

August 20, 2015

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Tim Conner, Scottsdale, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Thursday, August 27, 2015 - 1:30 p.m.
MAG Office, Suite 200 - Saguaro Room
302 North 1st Avenue, Phoenix

A meeting of the MAG Air Quality Technical Advisory Committee has been scheduled for the time and place noted above. Members of the Air Quality Technical Advisory Committee may attend the meeting either in person, by videoconference or by telephone conference call. Those attending by videoconference must notify the MAG site three business days prior to the meeting. If you have any questions regarding the meeting, please contact Chair Connor or Lindy Bauer at 602-254-6300.

Please park in the garage underneath the building, bring your ticket, and parking will be validated. For those using transit, Valley Metro/Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

In 1996, the Regional Council approved a simple majority quorum for all MAG advisory committees. If the MAG Air Quality Technical Advisory Committee does not meet the quorum requirement, members who arrived at the meeting will be instructed a legal meeting cannot occur and subsequently be dismissed. Your attendance at the meeting is strongly encouraged. If you are unable to attend the meeting, please make arrangements for a proxy from your entity to represent you.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Jason Stephens at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

TENTATIVE AGENDA

COMMITTEE ACTION REQUESTED

1. Call to Order

2. Call to the Audience

An opportunity will be provided to members of the public to address the Air Quality Technical Advisory Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Air Quality Technical Advisory Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.

3. Approval of the May 21, 2015 Meeting Minutes

4. EPA Notice Proposing to Reclassify the Maricopa Eight-Hour Ozone Nonattainment Area From Marginal to Moderate for the 2008 Ozone Standard

On August 19, 2015, the Environmental Protection Agency (EPA) issued a notice proposing to take actions for each of the 36 nonattainment areas currently classified as Marginal for the 2008 ozone standard (0.075 parts per million). In the notice, EPA is proposing to determine that the Maricopa Eight-Hour Ozone Nonattainment Area did not attain the standard by the July 20, 2015 attainment date, did not qualify for a one-year extension of the attainment date, and would be reclassified from Marginal to Moderate. The attainment date for Moderate Areas is July 20, 2018. A new plan will be due by January 1, 2017 to address the Moderate Area

2. For information.

3. Review and approve the May 21, 2015 meeting minutes.

4. For information and discussion.

requirements. The plan is required to demonstrate at least a 15 percent reduction in volatile organic compound emissions over a six year period (2012-2017). Since the attainment date is in the middle of the summer ozone season, the plan is required to demonstrate attainment of the standard in the prior 2017 ozone season. In addition, the region will need to have clean data at the air quality monitors in 2017 to meet the standard. MAG is closely coordinating with the Maricopa County Air Quality Department, Arizona Department of Environmental Quality, and Arizona Department of Transportation on the plan. EPA will accept comments on the proposal for 30 days after publication in the Federal Register. Please refer to the enclosed material.

5. Air Quality Status Report

The air quality monitoring data for the region will be reviewed with the Committee. The region has met the carbon monoxide standard and two of the ozone standards for several years. The region has not yet met the 2008 ozone standard of 0.075 parts per million. In addition, EPA has determined that the region has met the PM-10 standard based upon three years of clean data for 2010-2012. A presentation will be provided.

6. Update on the MAG Eight-Hour Ozone Moderate Area Plan for the Maricopa Nonattainment Area

The planning effort has been initiated to prepare the MAG Eight-Hour Ozone Moderate Area Plan to address the Moderate Area requirements in the Clean Air Act. These requirements include an emissions inventory; reasonable further progress demonstration (at least a 15 percent reduction in volatile organic compound emissions over the six year period of 2012-2017); modeling attainment demonstration; reasonably available control technology; motor vehicle inspection and maintenance program; off-set requirements for business and industry;

5. For information and discussion.

6. For information and discussion.

reasonably available control measures; contingency measures; and motor vehicle emissions budgets for conformity. An update will be provided.

7. Draft Maricopa County 2014 Air Monitoring Network Plan

The Maricopa County Air Quality Department has prepared the Draft Maricopa County 2014 Air Monitoring Network Plan. A presentation will be provided on the plan. Please refer to the enclosed material.

8. Tentative MAG Air Quality Project Schedule

The Tentative MAG Air Quality Project Schedule for January 1, 2015-December 31, 2016 has been prepared. Please refer to the enclosed material.

9. Call for Future Agenda Items

The next meeting of the Committee has been tentatively scheduled for **Thursday, September 24, 2015 at 1:30 p.m.** The Chair will invite the Committee members to suggest future agenda items.

7. For information and discussion.

8. For information and discussion.

9. For information and discussion.

MINUTES OF THE
MARICOPA ASSOCIATION OF GOVERNMENTS
AIR QUALITY TECHNICAL ADVISORY COMMITTEE MEETING

Thursday, May 21, 2015
MAG Office
Phoenix, Arizona

MEMBERS ATTENDING

- * William Mattingly, Peoria, Chairman
- Tim Conner, Scottsdale, Vice Chair
- Drew Bryck, Avondale
- Robert van den Akker for John Minear, Buckeye
- # Jon Sherrill for Jim Weiss, Chandler
- # Jamie McCullough, El Mirage
- Jessica Koberna, Gilbert
- Megan Sheldon, Glendale
- * Cato Esquivel, Goodyear
- # Kazi Haque, Maricopa
- # Scott Bouchie, Mesa
- Joe Gibbs for Joe Giudice, Phoenix
- # Antonio DeLaCruz, Surprise
- Oddvar Tveit, Tempe
- * Youngtown
- Ramona Simpson, Queen Creek
- * Walter Bouchard, American Lung Association of Arizona
- Kyle Heckel for Kristin Watt, Salt River Project
- Rebecca Hudson, Southwest Gas Corporation
- Michael Denby for Nancy Nesky, Arizona Public Service Company
- # Gina Grey, Western States Petroleum Association
- Robert Forrest, Valley Metro/RPTA
- * Dave Berry, Arizona Motor Transport Association
- Jeanette Fish, Maricopa County Farm Bureau
- * Steve Trussell, Arizona Rock Products Association
- Ashley Ferguson for Claudia Whitehead, Greater Phoenix Chamber of Commerce
- # Amanda McGennis, Associated General Contractors
- * Spencer Kamps, Homebuilders Association of Central Arizona
- * Mannie Carpenter, Valley Forward
- Kai Umeda, University of Arizona Cooperative Extension
- Beverly Chenausky, Arizona Department of Transportation
- * Arizona Department of Environmental Quality
- * Environmental Protection Agency
- Corky Martinkovic, Maricopa County Air Quality Department
- Scott DiBiase, Pinal County
- Michelle Wilson, Arizona Department of Weights and Measures
- * Ed Stillings, Federal Highway Administration
- * Judi Nelson, Arizona State University
- Stan Belone, Salt River Pima-Maricopa Indian Community

- *Members neither present nor represented by proxy.
- #Participated via telephone conference call.
- +Participated via video conference call.

OTHERS PRESENT

- Lindy Bauer, Maricopa Association of Governments
- Julie Hoffman, Maricopa Association of Governments
- Matt Poppen, Maricopa Association of Governments
- Kara Johnson, Maricopa Association of Governments
- Dean Giles, Maricopa Association of Governments
- Taejoo Shin, Maricopa Association of Governments
- Ieesuck Jung, Maricopa Association of Governments
- Randy Sedlacek, Maricopa Association of Governments
- Feng Liu, Maricopa Association of Governments
- Adam Xia, Maricopa Association of Governments
- Joonwon Joo, Arizona Department of Transportation
- Bob Huhn, Maricopa County Air Quality Department

1. Call to Order

A meeting of the Maricopa Association of Governments (MAG) Air Quality Technical Advisory Committee (AQTAC) was conducted on May 21, 2015. Tim Conner, City of Scottsdale, Vice Chair, called the meeting to order at approximately 1:30 p.m. Scott Bouchie, City of Mesa; Antonio DeLaCruz, City of Surprise; Jamie McCullough, City of El Mirage; Jon Sherrill, City of Chandler; Gina Grey, Western States Petroleum Association; Kazi Haque, City of Maricopa; and Amanda McGennis, Associated General Contractors attended the meeting via telephone conference call. Ms. McGennis requested that the March 26, 2015 minutes be changed to show her attendance at the meeting through telephone conference call.

Acting Chair Conner indicated that copies of the handouts for the meeting are available. He noted for members attending through audio conference, the presentations for the meeting will be posted on the MAG website under Resources for the Committee agenda, whenever possible. If it is not possible to post them before the meeting, they will be posted after the meeting.

Lindy Bauer, Maricopa Association of Governments, stated that a memorandum was sent to the Committee on the AQTAC chair and vice chair appointments that are due to expire on June 30, 2015. In accordance with the MAG Committee Operating Policies and Procedures, the Committee chair and vice chair are eligible to serve an additional two-year term since they succeeded to an unexpired term of twelve months or less. Ms. Bauer stated that the current chair has indicated a preference to not serve an additional two-year term, if at all possible. Therefore, the vice chair will ascend to the chair position and a new vice chair will be approved by the MAG Executive Committee. MAG is requesting that member agencies interested in the vacant vice chair position submit a letter of interest by May 27, 2015 to the MAG Chair, Mayor Michael LeVault.

2. Call to the Audience

Acting Chair Conner stated that the Call to the Audience provides an opportunity for members of the public to address the Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Comment cards for those wishing to speak are available on the tables adjacent to the doorways inside the meeting room. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard. Acting Chair Conner noted that no public comment cards had been received.

3. Approval of the March 26, 2015 Meeting Minutes

The Committee reviewed the minutes from the March 26, 2015 meeting. Acting Chair Conner noted the modification to the March 26, 2015 minutes to reflect that Ms. McGennis attended the meeting by telephone conference call. Ms. McGennis, moved and Ramona Simpson, Town of Queen Creek, seconded and the motion to approve the March 26, 2015 meeting minutes, with the correction, carried unanimously.

Ms. Bauer apologized to Ms. McGennis. She indicated that MAG will be careful moving forward.

4. EPA Approval of the MAG 2014 State Implementation Plan Revision for the Removal of Stage II Vapor Recovery

Ms. Bauer stated that on March 30, 2015, the Environmental Protection Agency (EPA) issued a notice to approve the MAG 2014 State Implementation Plan Revision for the Removal of Stage II Vapor Recovery Controls in the Maricopa Eight-Hour Ozone Nonattainment Area. She stated that EPA made a determination that onboard refueling vapor recovery systems are in widespread use throughout the motor vehicle fleet, effective May 16, 2012. She noted that EPA indicated that they did not wish to impose an economic burden on communities, business and industry. Ms. Bauer stated that MAG worked closely with the Arizona Department of Weights and Measures, Arizona Department of Environmental Quality (ADEQ), and the Maricopa County Air Quality Department. EPA will be publishing the notice in the Federal Register in the near future.

5. Maricopa County Ozone Campaign

Bob Huhn, Maricopa County Air Quality Department, provided an overview of the Maricopa County Ozone Campaign. He stated that the region faces some challenges regarding ozone. The region does not attain the current 2008 eight hour ozone standard of 0.075 parts per million (ppm) and EPA has proposed tightening the ozone standard. Mr. Huhn displayed a graph of the 2014 ozone design values and proposed health standards. He indicated that three Maricopa County monitors are violating the current ozone standard and a majority are exceeding the proposed EPA ozone standard, (within the range of 1.065 to of 0.070 ppm). Therefore, the Maricopa County Air Quality Department is developing a campaign to address ozone.

Mr. Huhn discussed the ozone campaign. The target audience is drivers, especially single occupancy drivers; residents; and businesses in Maricopa County. Mr. Huhn displayed the icons for “Commit to One Day”. He stated that the campaign will utilize the “Commit to One Day” slogan and also use characters to represent opportunities to help reduce ozone each day of the week. The campaign slogan is, “Commit to One Day and Help Keep the Ozone Away”. The Clean Air Make More website will feature a webpage for the ozone campaign. The focus of the campaign will be to educate residents on ozone and why is important to reduce ozone.

Mr. Huhn displayed the ozone campaign characters. He noted that the characters are not final and are subject to change. Mr. Huhn noted that the first character walking his dog will be changed so that he is walking to work. The second character would be used to encourage alternative modes, and may be changed to include more characters waiting for the bus. Characters were also displayed for refueling after dark, carpool, and bicycling. In addition, Mr. Huhn indicated that the character sweeping may be changed. The idea behind the character is to sweep outside instead of using leaf blowers, however it may be confused with dust instead of ozone. Mr. Huhn also discussed a character for no drive-thru Thursday.

Mr. Huhn indicated that the characters and icons will be used on the webpage and mobile application. The characters on the mobile application will be animated. The icons on the webpage can also be added to a calendar. In addition, the campaign will be promoted on the

radio and the County is looking to focus on sponsoring traffic reports to hit the target audience of drivers during peak times. Mr. Huhn stated that a short tag line would be aired before the traffic report and a 15 second ozone campaign spot after the traffic report.

Mr. Huhn discussed the mobile application. He stated that the Maricopa County mobile application has been successful and that the County is pleased with the download rate. Recently, the average downloads per week for the application is approximately 50. Mr. Huhn added that hopefully the downloads increase during the ozone campaign.

Mr. Huhn stated that the Maricopa County is also looking to utilize billboards. The billboard may include a character and will mention ozone.

Mr. Huhn indicated that Maricopa County is discussing promotion of the campaign with Valley Metro. Maricopa County is looking to promote the campaign at bus stops. In addition, Maricopa County will be applying for space on the light rail. He stated that Valley Metro has three light rail trains that are made available to non-profit and government organizations if certain requirements are met. Mr. Huhn stated that the County cannot purchase advertising space on the light rail since it can only be sold to for-profit entities. However Maricopa County would purchase the light rail wraps if awarded the space.

Ms. McGennis stated that the Association of General Contractors (AGC) would like to sponsor a billboard and discussed potentially a 6 by 8 foot building banner to be placed in front of the AGC offices for the campaign. She also indicated that if the County can provide a template that signage could be placed at active construction projects along fence lines. Ms. McGennis noted that AGC is committed in helping to promote the ozone campaign in the region. Mr. Huhn responded that their help is appreciated and thanked Ms. McGennis.

Mr. Huhn added that Maricopa County is working with the cities and towns and many have already agreed to help with the campaign. The Arizona Diamondbacks have also agreed to space in Chase Field for the campaign.

Ms. Simpson inquired if the website for the campaign is live. She stated that the Town of Queen Creek has a dust awareness campaign the first week of June in which they could include the ozone campaign information. Mr. Huhn replied that the website is not yet active, however once the website and artwork is finalized, the County will send it out to the cities and towns. Ms. Simpson asked if there was an estimated timeframe. Mr. Huhn responded that Maricopa County is aiming to finalize the entire campaign by June 30th and the artwork is anticipated to be available mid-June. Ms. Simpson noted that once there is finalized artwork for the campaign, Queen Creek would promote it through their website and social media. Mr. Huhn commented that this campaign will be similar to the No Burn Campaign in that kits will be sent out containing artwork and language for the ozone campaign. Ms. Simpson stated that Queen Creek is happy to help in the campaign and noted that Queen Creek has a high commuter population. Mr. Huhn indicated that he appreciates all the support for the campaign.

Beverly Chenausky, Arizona Department of Transportation, suggested using “rake it up” instead of “sweep it up” for the Saturday campaign character so that more residents would think of lawn and garden equipment instead of sweeping their home. Mr. Huhn replied that this is an option in which the County has also contemplated making Saturday about low volatile organic

compound (VOC) paints instead of the lawn and garden equipment. He indicated that the challenge is educating residents on the impact leaf blowers, lawn mowers, and other lawn and garden equipment have on ozone. Mr. Huhn commented that the ozone campaign is a tougher message to convey as opposed to the No Burn Campaign because ozone is not visible.

Mr. Conner asked about the length of the campaign. Mr. Huhn responded that the campaign is aiming to target as much of the summer and ozone season months as possible, but mainly July and August. He indicated that the billboards and radio spots would run the month of July going to mid to late August.

6. Development of the 2014 Periodic Emissions Inventory

Taejoo Shin, Maricopa Association of Governments, provided an overview on the development of the 2014 Periodic Emissions Inventory. He stated that MAG is working with the Maricopa County Air Quality Department on the 2014 calendar year periodic emissions inventories for ozone precursors and PM-10 that are being developed for Maricopa County and the nonattainment areas. Mr. Shin indicated that the inventories for ozone precursors include annual and ozone season-day emissions of VOC, nitrogen oxide (NO_x), and carbon monoxide (CO). The PM-10 inventory includes annual and daily emissions of PM-10, PM-2.5, NO_x, sulphur oxides (SO_x), and ammonia (NH₃). He stated that the County-level emissions for 2014 are required to be submitted to EPA's National Emissions Inventory. The nonattainment area emissions inventories are included and required in air quality plans for attaining and maintaining EPA air quality standards.

Mr. Shin continued reporting on the 2014 Periodic Emissions Inventory. He mentioned that MAG develops emissions for: onroad mobile sources; nonroad mobile sources; biogenic sources; and three area sources, which include windblown dust, dust from offroad recreational vehicles, and dust from unpaved parking lots. Maricopa County Air Quality Department develops emissions for: point sources; most area sources; and one nonroad mobile source, locomotives. The Maricopa County Air Quality Department is responsible for the publication of the final periodic emissions inventory.

Mr. Shin discussed the onroad mobile source emissions. He stated that MAG utilizes EPA's Motor Vehicle Emission Simulator 2014 (MOVES2014) that calculates onroad and off-network vehicle emissions. He noted that off-network vehicle emissions include engine starting, parking, and idling emissions. The inputs for MOVES2014 include: hourly meteorology data such as temperature and humidity; vehicle registration, provided by the Arizona Department of Transportation, which includes vehicle population by vehicle type and model year; fuel inspection data, provided by the Arizona Department of Weights and Measures, include Reid Vapor Pressure, fuel sulfur percentage, and oxygen percentage; inspection and maintenance programs from ADEQ, which is one of the most important inputs, screen malfunctioning vehicles, and have them repaired. Both VMT and vehicle fleet speed data are derived from the MAG TransCAD model outputs.

Mr. Shin stated that the TransCAD modeling outputs are important in the development of onroad mobile source emission inventories. The TransCAD outputs provide approximately 120,000 link data for four time periods: AM peak (6 a.m. to 9 a.m.), midday (9 a.m. to 2 p.m.), PM peak (2

p.m. to 6 p.m.), and night time (6 p.m. to 6 a.m.). Mr. Shin indicated that the TransCAD modeling outputs include link specific travel time and traffic volume by area type, road type, and vehicle type. He noted that TransCAD outputs provide so many link data that they are difficult to process manually, therefore MAG staff developed the MOVESLINK2014 model.

Mr. Shin reported on the MOVESLINK 2014 that is designed to utilize link specific data to calculate onroad mobile source emissions for the periodic emissions inventory, regional transportation conformity analysis, and photochemical air quality modeling analysis. The model was coded with Python programming language and Geographic Information System technology. MOVESLINK 2014 employs a bottom-up method: link-specific vehicle fleet emissions are calculated using link-specific VMT and speed data by road type, vehicle type and area type, that are subsequently summed to estimate county or sub-county level emissions. The top-down methodology calculates total county emissions using county-level VMT and speed data. The County emissions are disaggregated into sub-county level emissions using a spatial surrogate (population density and distribution). Mr. Shin noted that the top-down method is less accurate than the bottom-up methodology since the spatial surrogate cannot perfectly account for vehicle emissions distribution and the link specific traffic congestion emissions cannot be addressed by the top-down methodology. Therefore, MAG utilizes the more accurate bottom-up approach for MOVESLINK 2014. In addition, MOVESLINK 2014 estimates hourly, gridded, and chemically speciated emissions for photochemical air quality modeling analyses.

Mr. Shin provided an overview of the nonroad mobile source emissions which are calculated by the EPA NONROAD2008a model. The NONROAD2008a model calculates emissions for the following sources: agricultural equipment; construction, commercial, and mining equipment; industrial equipment; lawn and garden equipment; pleasure craft and recreational equipment; and railway maintenance equipment. The nonroad emissions calculations are dependent upon equipment types, fuel types, usage, deterioration rates, population, age, and power load factor. The NONROAD2008a inputs include temperature, Reid Vapor Pressure, sulfur and oxygen content percentage.

Mr. Shin indicated that MAG is utilizing the Federal Aviation Administration's Emissions Dispersion Modeling System (EDMS) 5.1 to develop airport emissions. The EDMS model calculates aircraft, auxiliary power unit, and ground support equipment emissions for 15 airports in Maricopa County. Emissions are calculated for four aircraft categories: air carrier, air taxi, general aviation, and military. Mr. Shin noted that air carrier and air taxis are a commercial category where flights are regularly scheduled. The categories are distinguished by the number of seats; air carriers have at least 60 seats and air taxis have less than 60 seats. General aviation is private aircrafts for personal use. The inputs for airport emissions include: the number of aircraft operations or the number of landing and takeoff cycles - landing and takeoff are considered two separate operations; fleet mix data; and aircraft monthly, daily, hourly operation profiles. Mixing height data are developed using AERMOD model that utilizes Sky Harbor Airport surface and Tucson upper air meteorology data.

Mr. Shin discussed biogenic source emissions. The natural source emissions include lightning NO_x and volcanic eruptions. He stated that natural source emissions for the area are mainly vegetation emissions. The Model of Emissions of Gases and Aerosols from Nature (MEGAN) 2.1 calculates the vegetation VOC and soil microbial NO_x emissions. Model inputs include:

modeling domain information; hourly meteorological data (including temperature, solar radiation, humidity, wind speed) from Weather Research and Forecasting meteorological model outputs and/or monitor data; vegetation emissions factors; leaf area index or foliar density; and plant functional type. Mr. Shin noted that the last three inputs are provided by the model itself; however, the input files can be updated with local data.

Michael Denby, Arizona Public Service, inquired how biogenic emissions are determined by area. Mr. Shin replied that the modeling domain is defined in the MEGAN model; it will calculate the total modeling domain emissions. Mr. Denby asked if the model knows about the amount of vegetation. Mr. Shin responded that the model inputs include land use data which includes a percentage of trees and grasses for that area. He noted that the model determines the biogenic emissions based on the trees, foliage, or agriculture in that area. Mr. Shin stated that land use data is broken into categories in which each category has specific emission factors that are included in the modeling domain.

Joe Gibbs, City of Phoenix, inquired if the model accounts for southwest vegetation. Mr. Shin replied that there are two biogenic emission models, MEGAN and the EPA Biogenic Emission Inventory Model. He explained that the EPA model was based on east coast vegetation factors; however, the MEGAN model contains southwest vegetation factors. Mr. Shin reported that in 2005 MAG worked with Environ, an environmental consultant, who enlisted the help of a well-known professor of the Biogenics Emissions Inventory Model, to measure desert tree and vegetation emission factors, which were then applied to the MEGAN model. He stated that the MEGAN model is the most accurate biogenic model for the southwest since desert vegetation factors are included in the model. Ms. Bauer added that the MEGAN model was developed for this area with very specific data applicable to the region. She indicated that the professor created an inventory for the region that is updated with current land use data. Ms. Bauer stated that different vegetation in the area have varying levels of isoprenes emitted that can contribute to ozone. She noted that some vegetation and trees were better than others with regard to ozone formation. She mentioned that it was a very interesting study that was developed specifically for this region.

Mr. Gibbs asked if an accommodation is given by EPA for biogenic emissions. Ms. Bauer responded that for a Moderate Area plan, the 15 percent reduction for reasonable further progress is calculated for man-made emissions only. She added that when modeling ozone concentrations for an attainment demonstration, the biogenic emissions are factored back into the photochemical grid model. She mentioned that MAG utilizes the CMAQ and CAMx model. Mr. Shin added that biogenic emissions are used for background emissions. Ms. Bauer commented that biogenics emissions are included for background concentrations that are used in attainment and maintenance demonstrations. Mr. Shin stated that biogenic emissions are a large portion of VOC emissions, therefore biogenic emissions must be included to accurately replicate ozone concentrations and to better model performance.

Drew Bryck, City of Avondale, inquired about biogenic emissions from salt cedars. He added that salt cedars are a challenge in the Tres Rios project. Mr. Shin explained that the professor used a gas chromatography to measure emissions from varying trees and agriculture in the region. Mr. Bryck commented that potentially biogenic emissions could be a defense for the removal of the salt cedars. Ms Bauer responded that she would check to see if the salt cedar was

on the list in the study: however, MAG has not recommended the removal of vegetation. She added that plants and vegetation are good for PM-10 as they help stabilize the soil.

Kai Umeda, University of Arizona Cooperative Extension, asked about the biogenic emissions contribution. Mr. Shin indicated that biogenic emissions contributed approximately 60 percent of VOC in the 2011 Periodic Emissions Inventory. He added that according to a recent EPA study, more than 70 percent of VOC's are biogenic source emissions. Mr. Shin stated that biogenic source emissions are spread out and mainly impact the background concentrations. Anthropogenic source emissions are highly concentrated in the urban areas.

Matt Poppen, Maricopa Association of Governments, provided an overview of the development of emissions for three area sources, which include: windblown dust, dust from offroad recreation vehicles, and dust from unpaved parking lots. He stated that with regard to windblown dust, MAG first identifies land uses capable of producing windblown dust. Mr. Poppen presented a map that displayed land uses that contribute to windblown dust. The next step is to determine the percentage of stable and disturbed land uses through Maricopa County inspection data. Mr. Poppen stated that wind speed data is collected for the entire year from area monitoring stations and applied to the land uses that are nearest the monitors. He indicated that rural monitors cover more land than urban monitoring sites. Mr. Poppen explained that wind speed is multiplied by land use acreage and wind tunnel emission factors to determine PM-10 emissions from each land use. To standardize 2014 windblown dust PM-10 emissions, they are compared to the percentage of 2014 PM-10 concentrations associated with wind speeds of 12 mph or greater. Mr. Poppen displayed a table that shows the percent of PM-10 concentrations associated with high winds using 2014 data. He noted that on average five percent of concentrations at a monitor are association with high winds. Mr. Poppen noted that on an annual basis windblown dust emissions account for approximately five percent of the inventory. He added that this percentage is smaller than the 2011 emissions inventory of 12 percent due to more windblown dust activity in 2011 as compared to 2014.

Mr. Poppen discussed the dust from the offroad recreation vehicles category. He indicated that the EPA NONROAD2008a model provides estimates of the number of offroad vehicles and the annual mileage for offroad vehicles in Maricopa County. The total VMT are multiplied by EPA emission factors for travel on unpaved roads to produce annual and daily PM-10 and PM-2.5 emissions for fugitive dust from offroad recreational vehicles. Maricopa County emissions are allocated to the PM-10 nonattainment area using the ratio of land uses in the PM-10 nonattainment area to Maricopa County. Mr. Poppen reported that approximately 18 percent of the offroad vehicle dust emissions are assumed to occur in the nonattainment area as opposed to Maricopa County where there is more opportunity to ride offroad vehicles.

Mr. Poppen reported on dust from unpaved parking lots. He stated that GIS land use data and prior fugitive dust emissions studies are used to identify and estimate the total acreage of unpaved parking lots in Maricopa County and the PM-10 nonattainment area. Once the land uses are identified, estimates of the VMT on unpaved parking lots are developed assuming an average of 10 vehicles on each lot per day, driving an average distance of 0.031 miles per day. The total vehicle miles traveled is then multiplied by the EPA emission factors for travel on unpaved roads to produce annual and daily PM-10 and PM-2.5 emissions for fugitive dust from unpaved parking lots. Mr. Poppen added that the emissions are strictly dust, they do not include exhaust from vehicles.

Mr. Gibbs inquired about mileage for off-road recreational vehicles in Maricopa County. Mr. Poppen responded that the NONROAD2008a model breaks the mileage down by county for the entire country.

Mr. Poppen indicated that by January 15, 2016, Maricopa County is required to submit county-level emissions to EPA's National Emissions Inventory. In August 2016, the Maricopa County Air Quality Department would publish the final periodic emissions inventories, which would include emissions for the ozone and PM-10 nonattainment areas.

Mr. Poppen stated that the last periodic emission inventories were completed for 2011. He provided pie charts on the annual emissions of VOC, NO_x, CO, PM-10, and PM-2.5 for 2011.

7. Call for Future Agenda Items

Acting Chair Conner indicated that the next meeting of the Committee has been scheduled for Thursday, June 25, 2015 at 1:30 p.m. He requested suggestions for future agenda items. With no further comments, the meeting was adjourned at approximately 2:30 p.m.

Proposed Rule: Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified as Marginal for the 2008 Ozone National Ambient Air Quality Standards

FACT SHEET

ACTION

- On August 19, 2015, the U.S. Environmental Protection Agency (EPA) is proposing to take one of three actions for each of the 36 designated nonattainment areas currently classified as Marginal for the 2008 ozone National Ambient Air Quality Standards (NAAQS).
- First, the EPA proposes to determine that the 17 areas listed below attained the 2008 ozone standards by the July 20, 2015, attainment date.

Allentown-Bethlehem-Easton, PA	Knoxville, TN
Baton Rouge, LA	Lancaster, PA
Calaveras County, CA	Memphis, TN-MS-AR
Charlotte-Gastonia-Rock Hill, NC-SC	Reading, PA
Chico (Butte County), CA	San Francisco Bay Area, CA
Cincinnati, OH-KY-IN	Seaford, DE
Columbus, OH	Tuscan Buttes, CA
Dukes County, MA	Upper Green River Basin, WY
Jamestown, NY	

- Second, the EPA proposes to determine that the eight areas listed below did not attain the 2008 ozone standards by the July 20, 2015, attainment date, but qualify for a 1-year attainment date extension based in part on their 2014 monitored air quality data.

Cleveland-Akron-Lorain, OH	San Luis Obispo County (Eastern San Luis Obispo), CA
Houston-Galveston-Brazoria, TX	Sheboygan, WI
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	St. Louis-St. Charles-Farmington, MO-IL
Pittsburgh-Beaver Valley, PA	Washington, DC-MD-VA

- Third, the EPA proposes to determine that the 11 areas listed below did not attain the 2008 ozone standards by the July 20, 2015, attainment date, do not qualify for a 1-year attainment date extension, and would be reclassified as Moderate based on their 2012-2014 air quality data.

Atlanta, GA	Mariposa County, CA
Chicago-Naperville, IL-IN-WI	Nevada County (Western part), CA

Denver-Boulder-Greeley-Fort Collins-
Loveland, CO

Greater Connecticut, CT

Imperial County, CA

Kern County (Eastern Kern), CA

New York, N. New Jersey-Long Island,
NY-NJ-CT

Phoenix-Mesa, AZ

San Diego County, CA

- The EPA is proposing two options for establishing the due date by which air agencies would be required to submit State Implementation Plan (SIP) revisions to address Moderate nonattainment area requirements for the areas reclassified as a result of any final EPA action. The proposed due dates are: (1) the beginning of the respective 2017 ozone season for each reclassified area; or (2) January 1, 2017, for all areas.
- The EPA will accept comment on the proposal for 30 days after publication in the Federal Register.

BACKGROUND

- In March 2008, the EPA revised the primary and secondary ozone standards from a level of 0.08 ppm to 0.075 ppm. The EPA later issued a rule in April 2012 designating 46 areas throughout the country as nonattainment for the 2008 ozone standards, effective July 20, 2012. In that same rule, the EPA established classifications for the designated nonattainment areas, and classified 36 of those areas as Marginal. The deadline for Marginal areas to attain the 2008 ozone NAAQS is 3 years from the effective date of designation, or July 20, 2015.
- This action is proposing determinations for the 36 areas in 26 states and the District of Columbia subject to the July 20, 2015, Marginal area attainment date. If the EPA finalizes the determinations for the 11 areas that failed to attain the 2008 ozone standards, the Clean Air Act instructs the EPA to reclassify those areas as Moderate. The reclassified areas must then attain the 2008 ozone standards as expeditiously as practicable, but not later than July 20, 2018.
- The EPA's proposed determinations of attainment for 17 areas does not officially change the attainment status of any of these nonattainment area. These areas remain nonattainment until the state's request and the EPA takes separate action to approve redesignation requests that include 10-year maintenance plans. The EPA has recently approved redesignations to attainment for the Knoxville, TN, and the North Carolina portion of the Charlotte-Gastonia-Rock Hill, NC-SC, nonattainment areas. These redesignations are effective as of August 12, 2015, for the Knoxville, TN, area, and as of August 27, 2015, for the NC portion of the Charlotte--Gastonia-Rock Hill, NC-SC, area. Given that these areas were still designated nonattainment as of July 20, 2015, the EPA is including them among the areas for which the agency is proposing determinations of attainment by the attainment date.

HOW TO COMMENT

- Comments, identified by Docket ID No. EPA-HQ-OAR-2015-0468, may be submitted by one of the following methods:
 - Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments.
 - Email: A-and-R-Docket@epa.gov. Include Docket ID No. EPA-HQ-OAR-2015-0468 in the

subject line of the message.

- Fax: (202) 566-9744.
- Mail: Environmental Protection Agency, EPA Docket Center (EPA/DC), Mail Code 28221T, Attention Docket ID No. EPA-HQ-OAR-2015-0468, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th Street, NW, Washington, D.C. 20503.
- Hand/Courier Delivery: EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue, NW, Washington, D.C. 20004. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

FOR MORE INFORMATION

- To download this action from the EPA's website, go to Ozone Regulatory Actions at <http://www.epa.gov/ozonepollution/actions.html>.
- Today's action and other background information are also available either electronically at <http://www.regulations.gov>, the EPA's electronic public docket and comment system, or in hardcopy at the EPA Docket Center's Public Reading Room.
 - The Public Reading Room is located at the EPA Headquarters, room number 3334 in the EPA William Jefferson Clinton West Building, 1301 Constitution Avenue, NW, Washington, D.C. Hours of operation are 8:30 a.m. to 4:30 p.m. eastern standard time, Monday through Friday, excluding Federal holidays.
 - Visitors are required to show photographic identification, pass through a metal detector and sign the EPA visitor log. All visitor materials will be processed through an X-ray machine as well. Visitors will be provided a badge that must be visible at all times.
 - Materials for these proposed actions can be accessed using Docket ID No. EPA-HQ-OAR-2015-0468
- For further information about this action, contact Mr. Cecil (Butch) Stackhouse of the EPA's Office of Air Quality Planning and Standards, at (919) 541-5208 or by email at stackhouse.butch@epa.gov.

The EPA Acting Assistant Administrator for Air and Radiation, Janet G. McCabe, signed the following notice on 8/19/2015, and EPA is submitting it for publication in the *Federal Register* (FR). While we have taken steps to ensure the accuracy of this Internet version of the rule, it is not the official version of the rule for purposes of compliance. Please refer to the official version in a forthcoming FR publication, which will appear on the Government Printing Office's FDSys website (<http://gpo.gov/fdsys/search/home.action>) and on Regulations.gov (<http://www.regulations.gov>) in Docket No. EPA-HQ-OAR-2015-0468. Once the official version of this document is published in the FR, this version will be removed from the Internet and replaced with a link to the official version.

6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-HQ-OAR-2015-0468; FRL-_____]

Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified As Marginal for the 2008 Ozone National Ambient Air Quality Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing three separate and independent determinations related to the 36 areas that are currently classified as “Marginal” for the 2008 ozone National Ambient Air Quality Standards (NAAQS). First, the EPA is proposing to determine that 17 areas attained the 2008 ozone NAAQS by the applicable attainment date of July 20, 2015, based on complete, quality-assured and certified ozone monitoring data for 2012-2014. Second, the EPA is proposing to grant 1-year attainment date extensions for eight areas on the basis that the requirements for such extensions under the Clean Air Act (CAA or Act) have been met. Third, the EPA is proposing to determine that 11 areas failed to attain the 2008 ozone NAAQS by the applicable attainment date of July 20, 2015, and that they are not eligible for an extension, and to reclassify these areas as “Moderate” for the 2008 ozone NAAQS. Once reclassified as Moderate, states must submit State Implementation Plan (SIP) revisions that meet

the statutory and regulatory requirements that apply to 2008 ozone NAAQS nonattainment areas classified as Moderate. In this action, the EPA is proposing and taking comment on two options for the deadline by which states would need to submit to the EPA for review and approval the SIP revisions required for Moderate areas once their areas are reclassified.

DATES: *Comments.* Comments must be received on or before **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*]**. *Public Hearings.* If anyone contacts us requesting a public hearing on or before **[INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**, we will hold a public hearing. Please refer to SUPPLEMENTARY INFORMATION for additional information on the comment period and the public hearing.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-OAR-2015-0468, to the *Federal eRulemaking Portal*: <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. If you need to include CBI as part of your comment, please visit <http://www.epa.gov/dockets/comments.html> for instructions. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. For additional submission methods, the full EPA public comment policy, and general guidance on making effective comments, please visit <http://www.epa.gov/dockets/comments.html>.

FOR FURTHER INFORMATION CONTACT: Mr. Cecil (Butch) Stackhouse, Office of Air Quality Planning and Standards, Air Quality Policy Division, Mail code C539-01, Research Triangle Park, NC 27711, telephone (919) 541-5208; fax number: (919) 541-5315; email address: *stackhouse.butch@epa.gov*.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

Entities potentially affected by this action include states (typically state air pollution control agencies), the District of Columbia and, in some cases, tribal governments. In particular, 26 states¹ with areas designated nonattainment and classified as “Marginal” for the 2008 ozone NAAQS and the District of Columbia are affected by this action. Entities potentially affected indirectly by this proposal include owners and operators of sources of volatile organic compounds (VOC) and nitrogen oxides (NO_x) emissions that contribute to ground-level ozone formation within the subject ozone nonattainment areas.

B. What should I consider as I prepare my comments for the EPA?

1. Submitting CBI. Do not submit this information to the EPA through <http://www.regulations.gov> or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to the EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the

¹ AR, AZ, CA, CO, CT, DE, GA, IL, IN, KY, LA, MA, MD, MO, MS, NC, NJ, NY, OH, PA, SC, TN, TX, VA, WI and WY.

comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed to be CBI must be submitted for inclusion in the public docket.

Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR Part 2.

2. *Tips for Preparing Your Comments.* When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, *Federal Register* date and page number).
- Follow directions - The agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified.

C. *Where can I get a copy of this document and other related information?*

In addition to being available in the docket, an electronic copy of this notice will be posted at <http://www.epa.gov/airquality/ozonepollution/actions.html#impl>.

D. What information should I know about a possible public hearing?

To request a public hearing or information pertaining to a public hearing on this document, contact Ms. Pamela Long at (919) 541-0641 before 5 p.m. on **[INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. If requested, further details concerning a public hearing for this proposed rule will be published in a separate *Federal Register* notice. For updates and additional information on a public hearing, please check the EPA's website for this rulemaking at

<http://www.epa.gov/airquality/ozonepollution/actions.html#impl>.

E. How is this preamble organized?

The information presented in this preamble is organized as follows.

I. General Information

- A. Does this action apply to me?
- B. What should I consider as I prepare my comments for EPA?
- C. Where can I get a copy of this document and other related material?
- D. What information should I know about a possible public hearing?
- E. How is this preamble organized?

II. Overview and Basis of Proposal

- A. Overview of Proposal
- B. What is the background for the proposed actions?
- C. What is the statutory authority for the proposed actions?
- D. How does the EPA determine whether an area has attained the 2008 ozone standard?

III. What is the EPA proposing and what is the rationale?

- A. Determination of Attainment
- B. Extension of Marginal Area Attainment Date
- C. Determination of Failure to Attain and Reclassification
- D. Moderate Area SIP Revision Submission Deadline
- E. Summary of Proposed Actions

IV. Environmental Justice Considerations

V. Statutory and Executive Order Reviews

- A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
- B. Paperwork Reduction Act (PRA)
- C. Regulatory Flexibility Act (RFA)

- D. Unfunded Mandates Reform Act (UMRA)
- E. Executive Order 13132: Federalism
- F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
- G. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks
- H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use
- I. National Technology Transfer and Advancement Act (NTTAA)
- J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

II. Overview and Basis of Proposal

A. *Overview of Proposal*

CAA section 181(b)(2) requires the EPA Administrator to determine, based on an area's design value (which represents air quality in the area for the most recent 3 year period)² as of an area's attainment deadline, whether an ozone nonattainment area attained the ozone standard by that date. The statute provides a mechanism by which states that meet certain criteria may request and be granted by the EPA Administrator a 1-year extension of an area's attainment deadline. The CAA also requires that areas that have not attained the standard by their attainment deadlines be reclassified to either the next "highest" classification (e.g., Marginal to Moderate, Moderate to Serious, etc.) or to the classifications applicable to the areas' design values in Table 1 of 40 CFR 51.1103. In this notice, the EPA proposes to find that 17 Marginal areas attained the 2008 NAAQS by the applicable deadline of July 20, 2015, based on complete, quality-assured

² An area's design value for the 8-hour ozone NAAQS is the highest 3-year average of the annual fourth highest daily maximum 8-hour average ozone concentration of all monitors in the area. *See* 40 CFR part 50, Appendix P.

and certified ozone monitoring data for 2012-2014³. The EPA also proposes to find that 8 Marginal areas meet the criteria, as provided in CAA section 181(a)(5) and interpreted by regulation at 40 CFR 51.1107, to qualify for a 1-year attainment date extension for the 2008 ozone NAAQS. Finally, the EPA proposes to find that 11 Marginal areas failed to attain the 2008 ozone NAAQS by the applicable Marginal attainment deadline of July 20, 2015, and do not qualify for a 1-year extension. Accordingly, as required by CAA section 181(b)(2)(A), if the EPA finalizes the determinations that these areas failed to attain, the EPA must reclassify those 11 Marginal areas to Moderate. The reclassified areas must attain the 2008 ozone NAAQS as expeditiously as practicable, but no later than July 20, 2018. Table 1 provides a summary of the EPA's proposed actions that would apply to these 36 Marginal areas.

The EPA is proposing in this notice to apply the discretion granted to the Administrator in the statute to adjust the statutory deadlines for submitting required SIP revisions for reclassified Moderate ozone nonattainment areas in order to align the SIP due dates with the regulatory deadline for implementing reasonably available control measures (RACM), including reasonably available control technology (RACT), in such areas as necessary to attain the 2008 ozone standard by the Moderate area attainment deadline of July 20, 2018.

Table 1: 2008 Ozone NAAQS Marginal Nonattainment Area Evaluation Summary

2008 NAAQS Nonattainment Area	2012-2014 Design Value (ppm)	Meets 2008 NAAQS by Marginal Attainment date	2014 4 th Highest Daily Maximum 8-hr Average (ppm)	Areas Not Attaining 2008 NAAQS Eligible for Attainment Date Extensions based on 2014 4 th Highest Daily Maximum 8-hr Average ≤0.075 ppm
Allentown-Bethlehem-Easton, PA	0.070	Attaining	0.068	Not applicable

³ These proposed determinations of attainment do not constitute a redesignation to attainment. Redesignations require states to meet a number of additional criteria, including EPA approval of a state plan to maintain the air quality standard for 10 years after redesignation.

2008 NAAQS Nonattainment Area	2012-2014 Design Value (ppm)	Meets 2008 NAAQS by Marginal Attainment date	2014 4 th Highest Daily Maximum 8-hr Average (ppm)	Areas Not Attaining 2008 NAAQS Eligible for Attainment Date Extensions based on 2014 4 th Highest Daily Maximum 8-hr Average ≤ 0.075 ppm
Atlanta, GA	0.077	Not Attaining	0.079	No
Baton Rouge, LA	0.072	Attaining	0.075	Not applicable
Calaveras County, CA	0.071	Attaining	0.071	Not applicable
Charlotte-Gastonia-Rock Hill, NC-SC	0.073	Attaining	0.068	Not applicable
Chicago-Naperville, IL-IN-WI	0.081	Not Attaining	0.076	No
Chico (Butte County), CA	0.074	Attaining	0.074	Not applicable
Cincinnati, OH-KY-IN	0.075	Attaining	0.071	Not applicable
Cleveland-Akron-Lorain, OH	0.078	Not Attaining	0.075	Yes
Columbus, OH	0.075	Attaining	0.070	Not applicable
Denver-Boulder-Greeley-Fort Collins-Loveland, CO	0.082	Not Attaining	0.077	No
Dukes County, MA	0.068	Attaining	0.059	Not applicable
Greater Connecticut, CT	0.080	Not Attaining	0.077	No
Houston-Galveston-Brazoria, TX	0.080	Not Attaining	0.072	Yes
Imperial County, CA	0.080	Not Attaining	0.078	No
Jamestown, NY	0.071	Attaining	0.066	Not applicable
Kern County (Eastern Kern), CA	0.084	Not Attaining	0.089	No
Knoxville, TN	0.067	Attaining	0.064	Not applicable
Lancaster, PA	0.071	Attaining	0.066	Not applicable
Mariposa County, CA	0.078	Not Attaining	0.077	No
Memphis, TN-MS-AR	0.073	Attaining	0.067	Not applicable
Nevada County (Western part), CA	0.079	Not Attaining	0.082	No
New York, N. New Jersey-Long Island, NY-NJ-CT	0.085	Not Attaining	0.081	No
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	0.077	Not Attaining	0.074	Yes
Phoenix-Mesa, Arizona	0.080	Not Attaining	0.080	No
Pittsburgh-Beaver Valley, PA	0.077	Not Attaining	0.071	Yes
Reading, PA	0.071	Attaining	0.068	Not applicable
San Diego County, CA	0.079	Not Attaining	0.079	No
San Francisco Bay Area, CA	0.072	Attaining	0.076	Not applicable
San Luis Obispo County (Eastern San Luis Obispo), CA	0.076	Not Attaining	0.073	Yes
Seaford, DE	0.074	Attaining	0.067	Not applicable
Sheboygan, Wisconsin	0.081	Not Attaining	0.072	Yes
St. Louis-St. Charles-Farmington, MO-IL	0.078	Not Attaining	0.072	Yes
Tuscan Buttes, CA	0.075	Attaining	0.076	Not applicable
Upper Green River Basin, WY	0.064	Attaining	0.065	Not applicable
Washington, DC-MD-VA	0.076	Not Attaining	0.069	Yes

B. What is the background for the proposed actions?

On March 12, 2008, the EPA issued its final action to revise the NAAQS for ozone to establish new 8-hour standards (73 FR 16436, March 27, 2008). In that action, we promulgated identical revised primary and secondary ozone standards, designed to protect public health and welfare, that specified an 8-hour ozone standard of 0.075 parts per million (ppm).⁴ Specifically, the standards require that the 3-year average of the annual fourth highest daily maximum 8-hour average ozone concentration may not exceed 0.075 ppm. The 2008 ozone NAAQS retains the same general form and averaging time as the 0.08 ppm NAAQS set in 1997 but is set at a level that is more protective of public health and the environment.

On April 30, 2012 (May 31, 2012), the EPA issued rules designating 46 areas throughout the country as nonattainment for the 2008 ozone NAAQS, effective July 20, 2012 (77 FR 30088, May 21, 2012 and 77 FR 34221, June 11, 2012). In April 30, 2012, action, the EPA established classifications for the designated nonattainment areas, and classified 36 of those areas as Marginal. We used primarily certified air quality monitoring data from calendar years 2008–2010⁵ to designate these areas as nonattainment, and as the basis for their classification (77 FR 30088 and 77 FR 34221). Also in the April 30, 2012, action, the EPA promulgated a Classifications Rule that specified some of the requirements for implementing the 2008 ozone

⁴ Since the 2008 primary and secondary NAAQS for ozone are identical, for convenience, we refer to both as “the 2008 ozone NAAQS” or “the 2008 ozone standard.”

⁵ In certain cases, states included as part of their designation recommendations a request that the EPA consider more up-to-date monitoring data from 2009–2011 in making final designation decisions. The EPA considered the state requests, and, accordingly, adjusted some of the classifications based on the more recent data.

NAAQS under the provisions of Subpart 2 of part D of title I of the CAA to the newly designated nonattainment areas for the 2008 ozone standard (77 FR 30160, May 21, 2012). CAA Section 181 provides that the attainment deadline for ozone nonattainment areas is “as expeditiously as practicable” but no later than the prescribed dates that are provided in Table 1 of that section. In the 2008 ozone NAAQS Classifications Rule, the EPA translated the “maximum” deadlines in Table 1 of Subpart 2 for purposes of the 2008 standard by measuring those deadlines from the effective date of the new designations, but extended those deadlines by several months to December 31 of the corresponding calendar year (77 FR 30166).

Pursuant to a challenge of the EPA’s interpretation of the attainment deadlines, on December 23, 2014, the D.C. Circuit issued a decision rejecting, among other things, the Classifications Rule’s attainment deadlines for the 2008 ozone nonattainment areas, finding that the EPA did not have statutory authority under the CAA to extend those deadlines to the end of the calendar year. *NRDC v. EPA*, 777 F.3d 456, 464-69 (D.C. Cir. 2014). Accordingly, as part of the final 2008 ozone NAAQS SIP Requirements Rule (80 FR 12264, March 6, 2015), the EPA modified the maximum attainment dates for all nonattainment areas for the 2008 ozone NAAQS, consistent with the court’s decision. As relevant here, the SIP Requirements Rule established a maximum deadline for Marginal nonattainment areas of 3 years from the effective date of designation, or July 20, 2015, to attain the 2008 ozone NAAQS. *See* 80 FR at 12268; 40 CFR 51.1103.

C. *What is the statutory authority for the proposed actions?*

The statutory authority for the actions proposed in this notice is provided by the CAA, as amended (42 U.S.C. 7401 et seq.). Relevant portions of the CAA include, but are not necessarily limited to, sections 181(a)(5) and 181(b)(2).

By way of background, CAA section 107(d) provides that when the EPA establishes or revises a NAAQS, the agency must designate areas of the country as nonattainment, attainment, or unclassifiable based on whether they are not meeting (or contributing to air quality in a nearby area that is not meeting) the NAAQS, meeting the NAAQS, or cannot be classified as meeting or not meeting the NAAQS, respectively. Subpart 2 of part D of title I of the CAA governs the classification, state planning and emissions control requirements for any areas designated as nonattainment for a revised primary ozone NAAQS. In particular, CAA section 181(a)(1) requires each area designated as nonattainment for a revised ozone NAAQS to be “classified” at the same time as the area is designated based on the severity of the ozone level in the area (as determined based on the area’s “design value,” which represents air quality in the area for the most recent 3 years). *See* footnote 2. Classifications for ozone nonattainment areas range from “Marginal” (for areas with monitored ozone levels just exceeding the level of the NAAQS) to “Extreme” (for areas with monitored ozone levels well above the levels of the NAAQS). CAA section 182 stipulates the specific attainment planning and additional requirements that apply to each ozone nonattainment area based on its classification. CAA section 182, as interpreted by the EPA’s implementation regulations at 40 CFR 51.1108-1117, also establishes the timeframes by which air agencies must submit SIP revisions to address the applicable attainment planning elements, and the timeframes by which ozone nonattainment areas must attain the relevant NAAQS.

Section 181(b)(2)(A) of the CAA requires that within 6 months following the applicable attainment date, the Administrator will determine whether an ozone nonattainment area attained the ozone standard based on the area's design value as of that date. Section 181(a)(5) of the CAA gives the Administrator the discretion to grant a 1-year extension of the attainment date specified in CAA section 181(a) upon application by any state if: (i) the state has complied with all requirements and commitments pertaining to the area in the applicable implementation plan; and (ii) no more than one measured exceedance of the NAAQS for ozone has occurred in the area preceding the extension year. The EPA may grant a second 1-year extension if these same criteria are met by the end of the first extension year.⁶

Because CAA section 181(a)(5)(B) was written for an exceedance-based standard, such as the 1-hour ozone NAAQS, the EPA has interpreted through notice-and-comment rulemaking the air quality requirement of the extension criteria for purposes of a concentration-based standard like the 2008 8-hour ozone NAAQS. For purposes of determining an area's eligibility for an attainment date extension for the 2008 ozone NAAQS, the EPA has interpreted the criteria of CAA section 181(a)(5)(B) to mean that an area's fourth highest daily maximum 8-hour value for the attainment year⁷ is at or below the level of the standard [80 FR 12264, 12292 (March 6, 2015); 40 CFR 51.1107].

In the event an area fails to attain the relevant ozone NAAQS by the applicable attainment date, CAA section 181(b)(2)(A) requires the Administrator to make the determination

⁶ The EPA considers the average of the annual fourth-highest daily maximum 8-hour ozone concentrations for 2 years at each monitoring site in an area.

⁷ See 40 CFR 51.1107(a)(1).

that an ozone nonattainment area failed to attain the ozone standard by the applicable attainment date, and subsequently requires the area to be reclassified by operation of law to the higher of (i) the next higher classification for the area, or (ii) the classification applicable to the area's design value as determined at the time of the required *Federal Register* notice.⁸ Section 181(b)(2)(B) requires the EPA to publish a notice in the *Federal Register* identifying the reclassification status of an area that has failed to attain the standard by its attainment date no later than 6 months after the attainment date, which in the case of the Marginal nonattainment areas addressed in this notice would be January 20, 2016.

Once an area is reclassified, the EPA must address the schedule by which the state is required to submit a revised SIP for that area to, among other things, demonstrate how the area will attain the relevant NAAQS as expeditiously as practicable but no later than the new applicable attainment date under the statute. According to CAA section 182(i), a state with a reclassified ozone nonattainment area must submit the applicable attainment plan requirements "according to the schedules prescribed in connection with such requirements" in CAA section 182(b) for Moderate areas, section 182(c) for Serious areas, and section 182(d) for Severe areas. However, the Act permits the Administrator to adjust the statutory due dates that would otherwise apply for any SIP revisions required as a result of the reclassification "to the extent that such adjustment is necessary or appropriate to assure consistency among the required submissions."

⁸ All of the affected nonattainment areas addressed in this notice would be classified to the next highest classification of Moderate. None of the affected areas has a design value that would otherwise place it in a higher classification (e.g., Serious) under CAA section 181(b)(2)(A)(ii).

D. How does the EPA determine whether an area has attained the 2008 ozone standard?

Under EPA regulations at 40 CFR part 50, Appendix P, the 2008 ozone NAAQS is attained at a site when the 3-year average of the annual fourth highest daily maximum 8-hour average ambient air quality ozone concentration is less than or equal to 0.075 ppm. This 3-year average is referred to as the design value. When the design value is less than or equal to 0.075 ppm at each ambient air quality monitoring site within the area, then the area is deemed to be meeting the NAAQS. The rounding convention under 40 CFR part 50, Appendix P, dictates that concentrations shall be reported in ppm to the third decimal place, with additional digits to the right being truncated. Thus, a computed 3-year average ozone concentration of 0.076 ppm is greater than 0.075 ppm and, therefore, over the standard.

The EPA's determination of attainment is based upon data that have been collected and quality-assured in accordance with 40 CFR part 58 and recorded in the EPA's Air Quality System database (formerly known as the Aerometric Information Retrieval System). Ambient air quality monitoring data for the 3-year period must meet a data completeness requirement. The ambient air quality monitoring data completeness requirement is met when the average percent of required monitoring days with valid ambient monitoring data is greater than 90 percent, and no single year has less than 75 percent data completeness as determined according to Appendix P of part 50.

III. What is the EPA proposing and what is the rationale?

The EPA is issuing this proposal pursuant to the agency's statutory obligation under CAA section 181(b)(2) to determine whether the 36 Marginal ozone nonattainment areas have attained the 2008 ozone NAAQS by the applicable attainment date of July 20, 2015. The

separate actions being taken in this proposal, as well as the rationale for these actions, are described in the sections below.

A. *Determinations of Attainment*

The EPA evaluated data from air quality monitors in the 36 Marginal nonattainment areas for the 2008 ozone NAAQS in order to determine the areas' attainment status as of the applicable attainment date of July 20, 2015. The data were supplied and quality assured by state and local agencies responsible for monitoring ozone air monitoring networks. Seventeen of the 36 nonattainment areas' monitoring sites with valid data had a design value equal to or less than 0.075 ppm based on the 2012-2014 monitoring period. Thus, the EPA proposes to determine, in accordance with section 181(b)(2)(A) of the CAA and the provisions of the SIP Requirements Rule (40 CFR 51.1103), that these 17 areas (listed in Table 2 below) attained the standard by the applicable attainment date for Marginal nonattainment areas for the 2008 ozone NAAQS. The EPA's determination is based upon 3 years of complete, quality-assured and certified data. Table 2 displays the 2012-2014 design value for these 17 areas. The fourth high values for each of the 3 years used to calculate each monitor's 2012-2014 design value are provided in the technical support document (TSD) in the docket for this action.⁹ The EPA is soliciting comments on these proposed determinations of attainment by the applicable attainment date.

Table 2: Marginal Nonattainment Areas that Attained the 2008 Ozone NAAQS by the July 20, 2015, Attainment Date

⁹ *“Technical Support Document Regarding Ozone Monitoring Data – Determinations of Attainment, 1-Year Attainment Date Extensions, and Reclassifications for Marginal Areas under the 2008 8-Hour Ozone National Ambient Air Quality Standard (NAAQS), EPA-HQ-OAR-2015-0468.*

2008 Ozone NAAQS Nonattainment Area	2012-2014 Design Value (ppm)
Allentown-Bethlehem-Easton, PA	0.070
Baton Rouge, LA	0.072
Calaveras County, CA	0.071
Charlotte-Rock Hill, NC-SC ^a	0.073
Chico (Butte County), CA	0.074
Cincinnati, OH-KY-IN	0.075
Columbus, OH	0.075
Dukes County, MA	0.068
Jamestown, NY	0.071
Knoxville, TN ^b	0.067
Lancaster, PA	0.071
Memphis, TN-MS-AR	0.073
Reading, PA	0.071
San Francisco Bay Area, CA	0.072
Seaford, DE	0.074
Tuscan Buttes, CA	0.075
Upper Green River Basin, WY	0.064

^a On July 28, 2015, the EPA redesignated to attainment the North Carolina portion of the Charlotte-Rock Hill, NC-SC, nonattainment area for the 2008 8-hour ozone NAAQS, effective August 27, 2015. *See* 80 FR 44873. Given that this area was still designated nonattainment as of July 20, 2015, the EPA is herein proposing to determine that this area attained the 2008 ozone NAAQS by the applicable attainment date in order to satisfy the agency's obligation under CAA section 181(b)(2)(A) to make determinations of attainment for nonattainment areas within 6 months following an area's applicable attainment date.

^b On July 13, 2015, the EPA redesignated to attainment the Knoxville, TN, nonattainment area for the 2008 8-hour ozone NAAQS, effective August 12, 2015. *See* 80 FR 39970. Given that this area was still designated nonattainment as of July 20, 2015, the EPA is herein proposing to determine that this area attained the 2008 ozone NAAQS by the applicable attainment date in order to satisfy the agency's obligation under CAA section 181(b)(2)(A) to make determinations of attainment for nonattainment areas within 6 months following an area's applicable attainment date.

B. Extension of Marginal Area Attainment Dates

Of the 36 Marginal nonattainment areas for the 2008 ozone NAAQS, there are eight areas for which the EPA is proposing to grant a 1-year attainment date extension based on determinations that these areas have met the requirements for an extension under CAA section 181(a)(5).

Specifically, for each of the eight nonattainment areas, the EPA received a letter from a state air agency requesting a 1-year extension of the area's attainment date and certifying that the state is in compliance with the applicable implementation plan, as required under CAA section 181(a)(5)(A). In their requests, the states certified that they have complied with all requirements and commitments pertaining to their respective nonattainment areas in the applicable implementation plan and that all monitors in the area have a fourth highest daily maximum 8-hour average of 0.075 ppm or less for 2014 (i.e., the last full year of air quality data prior to the July 20, 2015, attainment date). A summary of the information in these letters is provided in the TSD for this action. The EPA evaluated the information submitted by each state for its nonattainment area(s) and is proposing determinations that each state has met the requirement of CAA section 181(a)(5)(A) for each applicable area.¹⁰

The EPA has also evaluated the certified air quality monitoring data for 2014 and is proposing to determine that each of the eight areas listed in Table 3 meets the air quality requirements of CAA section 181(a)(5)(B) and the EPA's interpretation of that statutory provision in 40 CFR 51.1107. As explained in Section II.C of this preamble, the EPA has interpreted the air quality criterion in CAA section 181(a)(5)(B) for purposes of the 2008 8-hour standard to mean that an eligible area's fourth highest daily maximum 8-hour average in the year

¹⁰ The EPA notes that while Delaware did not submit a letter requesting a 1-year attainment date extension for the multi-state Philadelphia nonattainment area, based on extension requests from the other states with jurisdiction over that area, including Pennsylvania, New Jersey, and Maryland, and the EPA's own analysis of the CAA section 181(a)(5)(A) criteria with regard to Delaware, the EPA is exercising its discretion to propose granting the Philadelphia area a 1-year extension of the attainment date.

preceding the attainment date is equal to or below the NAAQS (80 FR 12292). The EPA has evaluated the data for these eight areas and has determined that the fourth highest daily maximum 8-hour average for each area in 2014 is equal to or below 0.075 ppm. Table 3 provides the fourth highest daily maximum 8-hour averages for 2014 for each of the eight Marginal nonattainment areas for which a state has requested an attainment date extension.

Based on the EPA’s evaluation and determination that eight Marginal nonattainment areas for the 2008 ozone NAAQS that failed to attain the NAAQS by July 20, 2015, have met the attainment date extension criteria of CAA section 181(a)(5), the EPA is exercising its discretion to propose granting a 1-year extension of the applicable Marginal area attainment date to July 20, 2016, from July 20, 2015, for the nonattainment areas listed in Table 3. If this proposal is finalized, then the nonattainment areas would remain classified as Marginal for the 2008 ozone NAAQS unless and until the EPA makes a determination that the areas have not attained the NAAQS by the July 20, 2016, attainment date. The EPA is soliciting comments on this proposal.

Table 3: Marginal Nonattainment Areas that Qualify for a 1-Year Attainment Date Extension for the 2008 Ozone NAAQS^a

2008 Ozone NAAQS Nonattainment Area	2012-2014 Design Value (ppm)	2014 4 th Highest Daily Maximum 8-hr Average (ppm)
Cleveland-Akron-Lorain, OH	0.078	0.075
Houston-Galveston-Brazoria, TX	0.080	0.072
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	0.077	0.074
Pittsburgh-Beaver Valley, PA	0.077	0.071
San Luis Obispo County (Eastern part), CA	0.076	0.073
Sheboygan, WI	0.081	0.072
St. Louis-St. Charles-Farmington, MO-IL	0.078	0.072
Washington, DC-MD-VA	0.076	0.069

^a The areas listed are Marginal nonattainment areas that did not attain the 2008 ozone standard by July 20, 2015, but qualify for an extended attainment date to July 20, 2016, under CAA section 181(a)(5).

C. Determinations of Failure to Attain and Reclassification

The EPA is proposing to determine that 11 Marginal nonattainment areas (listed in Table 4) have failed to attain the 2008 ozone NAAQS by the applicable attainment date of July 20, 2015. These areas are not eligible for a 1-year attainment date extension because the fourth highest daily maximum 8-hour average for at least one monitor in each area is greater than 0.075 ppm for 2014 (i.e., last full year of air quality data prior to the July 20, 2015, attainment date). Each of these areas failed to attain because the 2012-2014 design value for at least one monitor in each area exceeded the 2008 ozone NAAQS of 0.075 ppm. The TSD for this action shows all monitoring data for the relevant years for each of these nonattainment areas, as well as the 3-year design value calculations for each area.

CAA section 181(b)(2)(A) provides that a Marginal nonattainment area shall be reclassified by operation of law upon a determination by the EPA that such area failed to attain the relevant NAAQS by the applicable attainment date. Based on quality-assured ozone monitoring data from 2012-2014, as provided in the TSD for this proposal, the new classification applicable to each of these 11 areas would be the next higher classification of “Moderate” under the CAA statutory scheme.¹¹

¹¹ The 2012-2014 design value for each of the 11 areas does not exceed 0.100 ppm, which is the threshold for reclassifying an area to Serious per CAA section 181(b)(2)(A)(ii) and 40 CFR 51.1103.

Moderate nonattainment areas are required to attain the standard “as expeditiously as practicable” but no later than 6 years after the initial designation as nonattainment (which, in the case of these 11 areas, is July 20, 2018). The attainment deadlines associated with each classification are prescribed by the Act and codified at 40 CFR 51.1103.

We also note that states with areas that attain the 2008 ozone NAAQS after they are reclassified to Moderate can use the EPA’s existing Clean Data Policy. A state with an area attaining the NAAQS could also submit a complete redesignation request with a maintenance plan to the EPA prior to the SIP revision deadline that uses the EPA’s redesignation guidance.¹²

There are a number of significant emission reduction programs that will lead to reductions of ozone precursors, and that are in place today or are expected to be in place by 2017 to meet the July 20, 2018 attainment date for the 2008 ozone NAAQS Moderate areas. Examples of such rules include state and federal implementation plans adopted under the Cross-State Air Pollution Rule (CSAPR), the regional haze rule and the Best Available Retrofit Technology (BART) requirements, as well as regulations controlling on-road and non-road engines and fuels, ¹³ hazardous air pollutant rules for utility and industrial boilers, and various other programs already adopted by states to reduce emissions from key emissions sources. Further, states and the EPA are currently evaluating interstate transport obligations addressing CAA 110(a)(2)(D)(i)(I) requirements for this NAAQS, and the state or federal plans that are adopted to satisfy these obligations will provide a level of additional emission reductions from upwind states that will

¹² Details on the EPA’s existing Clean Data Policy and redesignation guidance are available at <http://www.epa.gov/air/urbanair/sipstatus/policy.html>.

¹³ 79 FR 23414 (April 29, 2014). Control of Air Pollution From Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards

further assist each nonattainment area in attaining the ozone NAAQS by the Moderate attainment area deadline.

Table 4: Marginal Nonattainment Areas that Will Be Reclassified as Moderate Because They Did Not Attain the 2008 Ozone NAAQS by the July 20, 2015, Attainment Date

2008 Ozone NAAQS Nonattainment Area	2012-2014 Design Value (ppm)	2014 4th Highest Daily Maximum 8-hr Average (ppm)
Atlanta, GA	0.077	0.079
Chicago-Naperville, IL-IN-WI	0.081	0.076
Denver-Boulder-Greeley-Fort Collins-Loveland, CO	0.082	0.077
Greater Connecticut, CT	0.080	0.077
Imperial County, CA	0.080	0.078
Kern County (Eastern Kern), CA	0.084	0.089
Mariposa County, CA	0.078	0.077
Nevada County (Western part), CA	0.079	0.082
New York-N. New Jersey-Long Island, NY-NJ-CT	0.085	0.081
Phoenix-Mesa, AZ	0.080	0.080
San Diego County, CA	0.079	0.079

D. Moderate Area SIP Revision Submission Deadline

For each new Moderate ozone nonattainment area, the states responsible for managing air quality in the 11 areas identified in Table 4 will be required to submit a revised SIP that addresses the CAA’s Moderate nonattainment area requirements, as interpreted and described in the final SIP Requirements Rule for the 2008 ozone NAAQS. *See* 40 CFR 51.1100 *et seq.* Those requirements include: (1) an attainment demonstration (CAA section 182(b) and 40 CFR 51.1108); (2) provisions for RACT (CAA section 182(b)(2) and 40 CFR 51.1112(a)-(b)) and RACM (CAA section 172(c)(1) and 40 CFR 51.1112(c)); (3) reasonable further progress (RFP) reductions in VOC and/or NO_x emissions in the area (CAA sections 172(c)(2) and 182(b)(1) and 40 CFR 51.1110); (4) contingency measures to be implemented in the event of failure to meet a

milestone or to attain the standard (CAA section 172(c)(9)); (5) a vehicle inspection and maintenance program, if applicable (CAA section 181(b)(4) and 40 CFR 51.350); and, (6) NO_x and VOC emission offsets at a ratio of 1.15 to 1 for major source permits (CAA section 182(b)(5) and 40 CFR 51.165(a)). *See also* the requirements for Moderate ozone nonattainment areas set forth in CAA section 182(b) and the general nonattainment plan provisions required under CAA section 172(c).¹⁴

As noted elsewhere in this preamble, when an area is reclassified under CAA section 181(b)(2), CAA section 182(i) directs that the state shall meet the new requirements according to the schedules prescribed in those requirements. It provides, however, “that the Administrator may adjust any applicable deadlines (other than attainment dates) to the extent such adjustment is necessary or appropriate to assure consistency among the required submissions.” CAA section 182(b), as interpreted by 40 CFR 51.1100 *et seq.*, describes the required SIP revisions and associated deadlines for a nonattainment area classified as Moderate at the time of the initial designations. However, these SIP submission deadlines (e.g., 3 years after the effective date of designation for submission of an attainment plan and attainment demonstration) have already passed. Accordingly, the EPA is proposing to exercise its discretion under CAA section 182(i) to adjust the SIP submittal deadlines for these 11 new Moderate nonattainment areas.

In determining an appropriate deadline for the Moderate area SIP revisions for these 11 areas, the EPA notes that pursuant to 40 CFR 51.1108(d), for each nonattainment area, the state must provide for implementation of all control measures needed for attainment no later than the

¹⁴ All 11 of the areas reclassified to Moderate except Denver-Boulder-Greeley-Fort Collins-Loveland, CO have been classified Moderate or higher classification for a prior ozone NAAQS.

beginning of the attainment year ozone season. The attainment year ozone season is the ozone season immediately preceding a nonattainment area's attainment date. In the case of nonattainment areas classified as Moderate for the 2008 ozone NAAQS, the attainment year ozone season is the 2017 ozone season (40 CFR 51.1100(g)). The ozone season is the ozone monitoring season as defined in 40 CFR part 58, Appendix D, section 4.1, Table D-3 (October 17, 2006, 71 FR 61236). We note that the EPA has proposed changes to the ozone monitoring season in its most recent proposal to revise the ozone NAAQS (79 FR 75234, December 17, 2014). For the purposes of reclassification for the 11 Marginal nonattainment areas identified in this proposal, Table 5 provides the starting month of the ozone monitoring season for each state with one of the 11 Marginal areas as currently codified in the EPA's regulations. Table 5 also includes the December 17, 2014, proposed changes, if any, to the beginning of the ozone monitoring season in such states. If the proposed changes to the beginning of the ozone monitoring seasons are included in the final ozone NAAQS revision (expected by October 1, 2015), and that rulemaking is finalized before the EPA finalizes this action, the revised ozone season dates would also apply to our adjusted deadlines for the Moderate area SIP revisions for the areas we propose to reclassify in this notice. We also note that we believe it is reasonable to provide states with a period of at least approximately 1 year after the reclassification is finalized to develop and submit the Moderate area SIP revisions. This provides time necessary for states and local air districts to finish their review of available control measures, adopt necessary attainment strategies, address other SIP requirements, and complete the public notice process necessary to adopt and submit SIP revisions.

Therefore, the EPA is proposing and taking comment on two options for setting the date by which states with jurisdiction for these 11 reclassified nonattainment areas would be required to submit for EPA review and approval SIP revisions to address Moderate area requirements. The first option, which is reflected in Table 5 below, would require that states submit the required SIP revisions as expeditiously as practicable, but no later than the beginning of the ozone season in 2017 for each state. This proposed option would align the SIP submittal deadline with the deadline for implementing applicable controls, which, as noted above, is also no later than the beginning of the ozone season in 2017 for each area. This option would give 9 states additional time that may be needed to accomplish planning, administrative and SIP revision processes. This option would treat states consistently in that they would need to have submitted SIP revisions by the beginning of their respective ozone seasons, but it would result in SIP submittal dates that vary among the states. In addition, as noted above, if the EPA finalizes the proposed changes to the start dates of the ozone season in a number of states, the proposed deadlines for SIP revisions in this rulemaking would also change accordingly. Under this first option, in multi-state nonattainment areas, such as the Chicago-Naperville area, where the three affected states do not have the same ozone season start date, the deadline for the entire nonattainment area would be the earliest ozone season start date for any of the states (e.g., April 1, 2017, for the Chicago area).

Table 5 – Beginning of Ozone Season for States with Areas Identified for Reclassification to Moderate for the 2008 Ozone NAAQS

2008 Moderate Ozone Areas	State	Current Month or Date Ozone Season Begins ^a	Proposed Deadline for Moderate	Proposed Month or Date Ozone Season Begins ^b
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			Area SIP Submittal	
Atlanta, GA	Georgia	March	1-Mar-17	No change
Chicago-Naperville, IL-IN-WI	Illinois	April	1-Apr-17	March
Chicago-Naperville, IL-IN-WI	Indiana	April	1-Apr-17	March
Chicago-Naperville, IL-IN-WI	Wisconsin	15-Apr	15-Apr-17	15-Mar
Denver-Boulder-Greeley-Fort Collins-Loveland, CO	Colorado	March	1-Mar-17	January
Greater Connecticut, CT	Connecticut	April	1-Apr-17	March
Imperial County, CA	California	January	1-Jan-17	No change
Kern County (Eastern Kern), CA	California	January	1-Jan-17	No change
Mariposa County, CA	California	January	1-Jan-17	No change
Nevada County (Western part), CA	California	January	1-Jan-17	No change
New York-N. New Jersey-Long Island, NY-NJ-CT	New Jersey	April	1-Apr-17	March
New York-N. New Jersey-Long Island, NY-NJ-CT	New York	April	1-Apr-17	March
New York-N. New Jersey-Long Island, NY-NJ-CT	Connecticut	April	1-Apr-17	March
Phoenix-Mesa, AZ	Arizona	January	1-Jan-17	No change
San Diego County, CA	California	January	1-Jan-17	No change

^a Table D-3 of Appendix D to Part 58—Ozone Monitoring Season by State. First day of beginning month except for WI.

^b Beginning of ozone season proposed in the ozone NAAQS revision proposal (79 FR 75234, December 17, 2014).

Under the second option, the EPA proposes that the deadline for the required SIP revisions for areas that would be reclassified under this rulemaking would be as expeditiously as practicable, but no later than January 1, 2017. By establishing a single specific submittal date, this option would establish a consistent deadline for all 11 areas, similar to the single uniform SIP submission deadline that would have applied to all areas if they had been initially classified as Moderate. A uniform deadline of January 1, 2017, is reasonable because it would provide all states with approximately 1 year after these reclassifications are finalized to develop complete

SIP submissions, and it is the latest SIP submittal date that would be compatible with ensuring controls are in place no later than the start of the attainment year ozone season for all of the 11 reclassified areas.

The EPA solicits comments on both of these proposed options for deadlines to submit the required SIP revisions that would apply to states after any current Marginal nonattainment area for the 2008 ozone NAAQS is reclassified to Moderate.

With regard to the New York-N. New Jersey-Long Island (NY-NJ-CT) nonattainment area, the EPA notes that in addition to the actions related to the 2008 ozone standard addressed in this proposed rulemaking, on May 15, 2014, the agency proposed to rescind the clean data determination (CDD) for that nonattainment area under the 1997 8-hour ozone standard because the EPA determined that the area was no longer attaining the 1997 ozone NAAQS (79 FR 27830, “May 2014 proposal notice”). The CDD, issued by the EPA in June 2012, suspended the three states’ obligations to meet attainment-related planning requirements for that standard, including submitting attainment demonstrations, RACM, RFP plans, and contingency measures. In the May 2014 proposal notice, the EPA proposed to find that the New Jersey, New York, and Connecticut’s SIPs were substantially inadequate to demonstrate attainment of the 1997 ozone NAAQS, and the agency proposed to issue a SIP Call under the authority of CAA section 110(k)(5) requiring the states to submit revised SIPs within 18 months to demonstrate how the New York-N. New Jersey-Long Island nonattainment area would re-attain the 1997 standard as expeditiously as practicable.

One option proposed by the EPA in the May 2014 proposal notice would permit the relevant states to respond to the final SIP Call by requesting to be reclassified to Moderate for

the 2008 ozone standard (*see* CAA section 181(b)(3)), which would consequently require that the states submit SIPs demonstrating how they would attain the more stringent 2008 standard as expeditiously as practicable. We proposed that this alternative response of submitting an attainment plan for the 2008 ozone standard would satisfy a final SIP Call on the 1997 ozone standard because an approvable plan would demonstrate compliance with a more stringent NAAQS.

The public comment period for the May 2014 proposal notice closed on June 16, 2014, and the EPA is reviewing comments received on the proposal. However, given that this action proposes to find that the New York-N. New Jersey-Long Island nonattainment area has failed to attain the 2008 ozone standard by its Marginal attainment date of July 20, 2015, and must be reclassified to Moderate by operation of law in accordance with CAA section 181(b)(2)(A), this proposed action would effectively eliminate the need for the three affected states to request reclassification for the area under the option described in the May 2014 proposal notice.

Although we are not taking final action in this notice on the proposed CDD rescission and SIP Call (79 FR 27830), the actions which may occur pursuant to this proposal (i.e., a final finding of failure to attain the 2008 standard by the applicable attainment date, reclassification of the area as Moderate, and a state submittal of a Moderate area attainment demonstration) would, thus, also serve to satisfy a final SIP Call under CAA section 110(k)(5). We also note that either of the 2008 ozone attainment plan due dates proposed in this notice would meet the statutory timeframe for the SIP revision due subsequent to a SIP Call for the 1997 ozone NAAQS for the area.

E. Summary of Proposed Actions

The actions proposed in this notice affect the 36 nonattainment areas for the 2008 ozone NAAQS that were initially designated and classified Marginal effective July 20, 2012, based on their individual design values. The design value of an area is represented by the annual fourth-highest daily maximum 8-hour average ozone concentration measured at each monitor in the area, averaged over a consecutive 3-year period. According to CAA section 181(a)(1), as interpreted by EPA regulations at 40 CFR 51.1103, nonattainment Marginal areas are required to attain the standard “as expeditiously as practicable” but no later than 3 years after the designation effective date of July 20, 2012 (i.e., no later than July 20, 2015). CAA section 181(b)(2)(A) requires that within six months of the attainment date, which, in the case of the Marginal areas that are the subject of this notice, was July 20, 2015, the EPA must determine, based on the ozone nonattainment area’s design value as of the attainment date, whether the area attained the ozone standard by that date. A Marginal nonattainment area has attained the 2008 ozone NAAQS by the attainment date if its design value is equal to or less than 0.075 ppm based on data from the period 2012-2014. If the EPA determines that an area has failed to attain by its attainment date, CAA section 181(b)(2) requires that those areas be reclassified to the higher of (i) the next highest classification, or (ii) the classification that corresponds with the area’s design value as of the time that the EPA publishes the notice identifying the areas that have failed to attain by their attainment date. Accordingly, the EPA is proposing that the following 11 Marginal nonattainment areas failed to attain the 2008 ozone NAAQS by July 20, 2015, and must be reclassified as Moderate: Atlanta, GA; Chicago-Naperville, IL-IN-WI; Denver-Boulder-Greeley-Fort Collins-Loveland, CO; Greater Connecticut, CT; Imperial County, CA; Kern County (Eastern Kern), CA; Mariposa County, CA; Nevada County (Western part), CA; New York-N.

New Jersey-Long Island, NY-NJ-CT; Phoenix-Mesa, AZ; and, San Diego County, CA. For these 11 areas, the EPA is further proposing that the responsible states must submit SIP revisions to fulfill the CAA's Moderate area requirements by one of the following two alternative deadlines: Option 1 - as expeditiously as practicable but not later than the start of each nonattainment area's 2017 ozone season; Option 2 – as expeditiously as practicable but not later than January 1, 2017. The EPA is taking comment on the determinations of failure to attain and subsequent reclassifications of each of these 11 nonattainment areas from Marginal to Moderate, and on an appropriate deadline for responsible states to submit SIP revisions to fulfill Moderate area requirements for these areas.

Upon application by any state, the Administrator may extend the 2008 ozone attainment date by 1 year, in accordance with CAA section 181(a)(5) and 40 CFR 51.1107, provided that the state has complied with all requirements and commitments pertaining to the area in the applicable implementation plan, and the area's fourth highest daily maximum 8-hour average value for the last full year of air quality data prior to the July 20, 2015, attainment date (i.e., 2014) is at or below 0.075 ppm. Based on state requests and a review of 2014 ozone air quality data, the EPA is proposing to grant 1-year extensions of the attainment date to July 20, 2016 (from July 20, 2015) for the following eight Marginal nonattainment areas: Cleveland-Akron-Lorain, OH; Houston-Galveston-Brazoria, TX; Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE; Pittsburgh-Beaver Valley, PA; San Luis Obispo County (Eastern part), CA; Sheboygan, WI; St. Louis-St. Charles-Farmington, MO-IL; and, Washington, DC-MD-VA. The EPA is taking comment on the 1-year attainment date extensions for each of these eight areas.

For the 17 remaining 2008 ozone NAAQS nonattainment areas currently classified as Marginal, the EPA is proposing to determine that each area has ozone design values for the 2012-14 period at or below 0.075 ppm, and, thus, each area has attained the NAAQS by the attainment date of July 20, 2015. The 17 areas are: Allentown-Bethlehem-Easton, PA; Baton Rouge, LA; Calaveras County, CA; Charlotte-Gastonia-Rock Hill, NC-SC; Chico (Butte County), CA; Cincinnati, OH-KY-IN; Columbus, OH; Dukes County, MA; Jamestown, NY; Knoxville, TN; Lancaster, PA; Memphis, TN-MS-AR; Reading, PA; San Francisco Bay Area, CA; Seaford, DE; Tuscan Buttes, CA; and, Upper Green River Basin, WY. The EPA is taking comment on the determinations of attainment by the applicable attainment date for these 17 areas.

VI. Environmental Justice Considerations

The CAA requires that states with areas designated as nonattainment submit to the Administrator the appropriate SIP revisions and implement specified control measures by certain dates applicable to the area's classification. By requiring additional planning and implementation requirements for the 11 nonattainment areas proposed to be reclassified from Marginal to Moderate, the part of this action reclassifying the areas from Marginal to Moderate will protect all those residing, working, attending school, or otherwise present in those areas regardless of minority or economic status.

VII. Statutory and Executive Order Reviews

A. *Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

The information collection activities associated with this proposed rule were submitted for approval to the OMB under the PRA as part of the information collection assessment for the 2008 ozone NAAQS SIP Requirements Rule. The Information Collection Request (ICR) document prepared by the EPA has been assigned the EPA ICR number 2347.01. You can find a copy of the ICR in the docket for the 2008 ozone NAAQS SIP Requirements Rule¹⁵ (EPA-HQ-OAR-2010-0885), and in the docket for this rule (EPA-HQ-OAR-2015-0468). The ICR is briefly summarized here.

The EPA issued the 2008 ozone NAAQS SIP Requirements Rule to provide states with assistance in interpreting how CAA requirements apply to their nonattainment areas when the states develop their SIPs for attaining and maintaining the 2008 ozone NAAQS. The intended effect of the SIP Requirements Rule — in conjunction with other rules that address additional aspects of implementation, such as this proposed action — is to provide assistance to states regarding their planning obligations such that states may begin SIP development. In preparing its analysis of the estimated paperwork burden associated with the SIP Requirements Rule and additional rules providing clarity on implementation of the 2008 ozone NAAQS, the EPA calculated that burden for the 46 areas designated non-attainment under that standard.^{16,17} The

¹⁵ 80 FR 12264, March 6, 2015.

¹⁶ 77 FR 30088, May 21, 2012.

¹⁷ 77 FR 34227, June 11, 2012.

estimate in the ICR included the assumption that 10 nonattainment areas originally classified as Marginal would require reclassification to Moderate after the July 20, 2015, attainment date for Marginal nonattainment areas. If this proposed action is finalized, 11 nonattainment areas originally classified as Marginal would be reclassified to Moderate. Therefore, we believe that the original estimate in the ICR has fairly quantified the information collection activities that will be associated with the 11 areas we proposed to reclassify in this action. Upon finalization of the reclassification to Moderate, the states with jurisdiction over the 11 areas will be required to prepare an attainment demonstration as well as submit SIP revisions for purposes of meeting RFP requirements and RACT. The attainment demonstration requirement is codified at 40 CFR 51.908, which implements CAA subsections 172(c)(1), 182(b)(1)(A) and 182(c)(2)(B). The RFP SIP submission requirement is codified at 40 CFR 51.910, which implements CAA subsections 172(c)(2) and 182(b)(1)(A), and the RACT SIP submission requirement is codified at 40 CFR 51.912, which implements CAA subsections 172(c)(1) 182(b)(2),(c),(d) and (e).

States should already have information from emission sources, as facilities should have provided this information to meet 1-hour and 1997 8-hour ozone NAAQS SIP requirements, operating permits and/or emissions reporting requirements. Such information does not generally reveal the details of production processes. But, to the extent it may, CBI for the affected facilities is protected. Specifically, submissions of emissions and control efficiency information that is confidential, proprietary and trade secret is protected from disclosure under the requirements of subsections 503(e) and 114(c) of the CAA.

The annual burden for the information collection associated with all 46 nonattainment areas, averaged over the first 3 years of the ICR, was estimated to be a total of 120,000 labor

hours per year at an annual labor cost of \$2.4 million (present value) over the 3-year period, or approximately \$91,000 per state for the 25 state respondents and the District of Columbia. The average annual reporting burden is 690 hours per response, with approximately two responses per state for 58 state responses.¹⁸ There are no capital or operating and maintenance costs associated with the SIP Requirements Rule's or this proposed rule's requirements. Burden is defined at 5 CFR 1320.3(b).

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

The comment period on the agency's need for this information ran from June 6, 2013, to August 5, 2013.¹⁹ No comments were received on the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden. The EPA public docket for this rule includes the ICR approved in conjunction with the 2008 ozone NAAQS SIP Requirements Rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities. The proposed determinations of attainment and failure to attain the 2008 ozone NAAQS

¹⁸ State responses are the number of SIP revisions required from the respective states to satisfy their 2008 ozone nonattainment requirements. Due to an oversight in the original submitted ICR, the estimated number of state responses (58) does not include the one required SIP revision for the Mississippi portion of the multi-state Memphis nonattainment area.

¹⁹ 78 FR 34178, June 6, 2013.

(and resulting reclassifications), and the proposed determination to grant 1-year attainment date extensions do not in and of themselves create any new requirements beyond what is mandated by the CAA. Instead, this rulemaking only makes factual determinations, and does not directly regulate any entities.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action has tribal implications. However, it will neither impose substantial direct compliance costs on federally recognized tribal governments, nor preempt tribal law. The EPA has identified a number of tribal areas implicated in the 36 areas covered by the EPA's proposed determinations of attainment and failure to attain the 2008 ozone NAAQS (and resulting reclassifications), and the proposed determination to grant 1-year attainment date extensions. We intend to communicate with potentially affected tribes located within the boundaries of the nonattainment areas for the 2008 ozone NAAQS as we move forward in developing a final rule.

G. Executive Order 13045: Protection of Children from Environmental Health and Safety

Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations. The results of this evaluation are contained in the section of the preamble titled “Environmental Justice Considerations.”

Page 34 of 34 - Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified As Marginal for the 2008 Ozone National Ambient Air Quality Standards

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Nitrogen oxides, Ozone, Volatile organic compounds, Intergovernmental relations, Reporting and recordkeeping requirements.

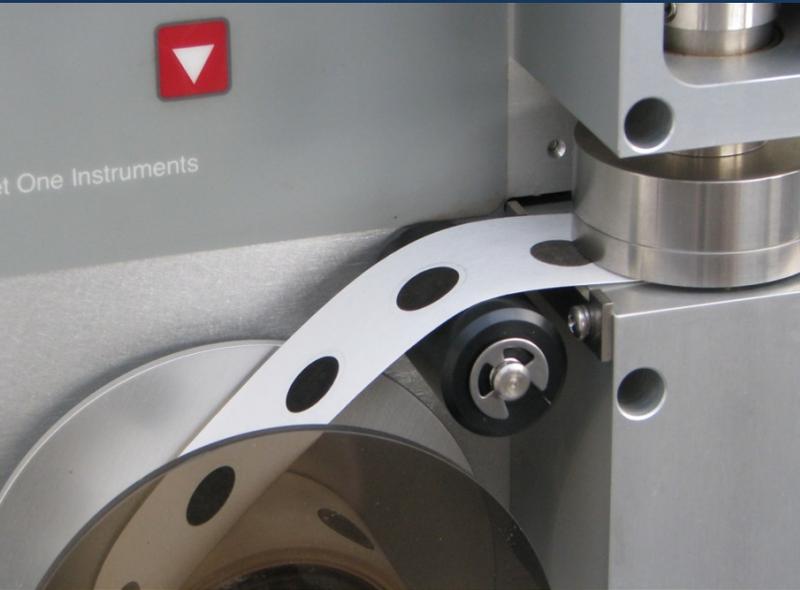
AUTHORITY: 42 U.S.C. 7401 et seq.

Dated:

Janet G. McCabe,
Acting Assistant Administrator.

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2014 AIR MONITORING NETWORK PLAN



Maricopa County
Air Quality Department

Publication Date: TBD

Author: Ceresa Stewart,
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ACKNOWLEDGEMENTS

In 2014, the Maricopa County Air Quality Department's Air Monitoring Division maintained 25 ambient air monitoring sites throughout Maricopa County. The division has eighteen team members including: one manager, two technician supervisors, two engineers, one quality assurance officer, one data analyst, and eleven technicians.

The division would especially like to thank all of its personnel and the department's atmospheric scientist for their excellent job in helping to maintain Maricopa County's air monitoring program. They are: Ben Davis, Gary Ensminger, Robert Dyer, Ceresa Stewart, Casey Bryan, John Neff, Tom Shorb, Chris Hernandez, Hugh Tom, Steve Sample, Daniel Daniels, Robert Sawicki, Reynaldo Santillano, Larry Seals, Alex Herrera, Freddie Alejandro, Tom Dubishar, David Dubiel, and Ron Pope, respectfully.

In addition, the department gratefully acknowledges the assistance of other agencies, which provided data and helpful comments to this review. These include: the Arizona Department of Environmental Quality, Pinal County Air Quality Control District, the Maricopa Association of Governments, and the Tribal air monitoring organizations adjacent to Maricopa County.

Last, we would like to thank the United States Environmental Protection Agency's Region 9 personnel for their guidance and support regarding our air monitoring program. The department respectfully submits this 2014 Air Monitoring Network Plan to Region 9 for review.

Reserved for Picture

2014 Maricopa County Air Monitoring Team

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KEY TO ACRONYMS AND TERMS

ADEQ:	Arizona Department of Environmental Quality
ADT:	Average Daily Traffic count
aka:	Also known as
AMD:	Air Monitoring Division
AMNP:	Air Monitoring Network Plan. The plan provides information regarding the establishment and maintenance of the County's air quality surveillance system that consists of a network of SLAMS monitoring stations and SPM monitoring stations.
Analyzer:	A monitor that samples the air and produces near real-time data without collecting a sample that must be analyzed.
ANSI:	American National Standards Institute
AQI:	Air Quality Index. An index that applies to each criteria pollutant and shows the concentration of each pollutant relative to its respective standard. When the AQI reaches 101, the pollutant's concentration has exceeded the NAAQS.
AQS:	The Air Quality System, sometimes define as the Air Quality Subsystem. The U.S. EPA's ambient air database.
ASQ:	American Society for Quality
Attainment:	This refers to an area being in compliance with a NAAQS and the U.S. Clean Air Act. After several years of no violations of a NAAQS, the EPA can classify a geographic area as in attainment for a particular CP.
AWT:	Average Weekday Traffic count
BAM:	Beta Attenuation Monitor. A continuous particulate measuring instrument used previously by MCAQD to measure PM ₁₀ .
CAA:	Clean Air Act
CASAC:	Clean Air Scientific Advisory Committee
CBSA:	Core-Based Statistical Area – is defined by the U.S. Office of Management and Budget as a statistical geographic entity consisting of the county or counties associated with at least one urbanized area/urban cluster of at least 10,000 in population, plus adjacent counties having a high degree of social and economic integration.
CFR:	The <i>Code of Federal Regulations</i> are published annually and contain the codification of the general and permanent rules published in the <i>Federal Register</i> by the executive departments and agencies of the Federal Government. An <i>eCFR</i> is a free electronic version; however, it is not the legal version.
Class I:	Federally designated parks or wilderness areas with mandated visibility protection.
CP:	Criteria pollutant, or the Central Phoenix site, depending upon context
CO:	Carbon monoxide, a criteria pollutant
Collocated:	The practice of establishing a second pollutant monitor within a specified distance and of a specified type at a monitoring site for QA purposes.

Continuous monitor:	A method of monitoring air pollutants that is continually measuring the quantity of the pollutant, either gaseous or particulate. Continuous monitors are analyzers that can obtain real-time or short-term averages of pollutants. Continuous monitors may also be referred to as “automated” monitors.
Criteria Pollutants:	Six pollutants (CO, O ₃ , NO ₂ , Pb, PM, and SO ₂) that have NAAQS established by the U.S. EPA.
CSA:	Combined Statistical Area - is defined by the U.S. Office of Management and Budget as when very large cities combine two or more CBSAs, these larger areas are referred to as combined statistical areas
CSN:	The chemical speciation network. A nationwide, research air monitoring network designed to ferret-out the chemical constituents of PM _{2.5} and to discern trends in PM _{2.5} pollution. This program is managed by the U.S. EPA Office of Air Quality Planning and Standards (OAQPS).
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; i.e., 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.
EBAM:	E-Beta Attenuation Monitor is a rugged, portable, battery or solar-operated analyzer that is suitable for obtaining and reporting continuous measurements of particulate matter in remote locations. EBAMs are often equipped with wind speed and direction instrumentation as well. EBAMs are particularly useful for temporary measurements of PM related to an event.
EPA R9:	Environmental Protection Agency Region 9
EE:	Exceptional Event – a high CP pollution event that is considered to be uncontrollable and caused by natural sources of pollution or an event that is not expected to recur at a given location. An EE can apply to any CP, but historical in Maricopa County, almost all EEs are related to high PM ₁₀ events.
Event:	Generally refers to a high pollution day where a NAAQS was exceeded
Exceedance:	Generally refers to a high pollution day where a NAAQS was exceeded
FDMS-TEOM:	Filter Dynamics Measurement System-Tapered Element Oscillating Microbalance. A continuous particulate analyzer used by MCAQD to measure PM _{2.5} .
FEM:	Federal Equivalency Method. An EPA-approved method of sampling and analyzing the ambient air for an air pollutant, i.e., includes the monitor and its operating firmware and procedure(s). An FEM must pass required testing found in <i>40 CFR Part 53</i> and show CP data produced are similar to the Federal Reference Method (FRM). Continuous particulate matter and some gaseous analyzers are FEMs.
Filter-based sampler:	A method of monitoring particulate pollution that involves exposing a pre-weighed filter to a specific flow rate for a prescribed period of time, usually midnight to midnight, or 1440 minutes. The filters are then post-weighed to determine the mass of particulates per volume, e.g. µg/m ³ .

FRM:	Federal Reference Method. An EPA-approved method of sampling and analyzing the ambient air for an air pollutant, i.e., includes the monitor and its operating firmware and procedure(s). An FRM must pass required testing found in <i>40 CFR Part 53</i> and show CP data produced are accurate based on acceptable precision and bias limits. These methods are the baseline that all other methods reference, e.g. Federal Equivalency Methods (FEM).
HAPs:	Hazardous air pollutants. An airborne 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
MCAQCED:	Maricopa County Air Quality Compliance and Enforcement Division
MCAQD:	Maricopa County Air Quality Department
MO:	monitoring organization
Monitor:	Monitor is a term that refers to an instrument, sampler, analyzer, or other device that measures or assists in the measurement of atmospheric air pollutants and which is acceptable for use in ambient air surveillance under the applicable provisions of <i>40 CFR Part 58 Appendix C</i> .
µg/m³:	micrograms per cubic meter
µm:	micrometers
MSA:	Metropolitan Statistical Area is designated by the U.S. Office of Management and Budget as a geographical area 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 within that core. Metropolitan and micropolitan statistical areas are the two categories of CBSAs. Metropolitan areas have populations greater than 50,000, and micropolitan areas have populations between 10,000 and 50,000. The AMD operates air monitoring stations within the Phoenix-Mesa MSA, which includes portions of Maricopa and Pinal County.
NAAQS:	National Ambient Air Quality Standards. Health and welfare-based standards established by the U.S. EPA that set permissible airborne concentration limits for the CPs.
NATTS:	National Air Toxics Trend Stations. A nationwide research air monitoring program designed to measure toxic air pollutant trends. This program is managed by the U.S. EPA Office of Air Quality Planning and Standards (OAQPS).
NCORE:	<u>National Core</u> 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 D.C., Virgin Islands, and Puerto Rico) located in both urban and rural areas. This program is managed by the U.S. EPA Office of Air Quality Planning and Standards (OAQPS).
Network:	All stations of a given type or types
NO₂:	Nitrogen dioxide. The indicator compound used to gauge the ambient concentration of NO _x .
NO_x:	Nitrogen oxide(s), a criteria pollutant. The sum of nitric oxide (NO), NO ₂ , and other nitrogen-containing compounds.
Nonattainment:	This refers to being an area not being in compliance with a NAAQS and the U.S. Clean Air Act. After several years of violating a NAAQS, the EPA can classify a

geographic area as being in nonattainment for a particular CP.

O₃:	Ozone, a criteria pollutant
OAQPS:	The U.S. EPA Office of Air Quality Planning and Standards located in Research Triangle Park, N.C., which serves as EPA “Headquarters” for ambient air monitoring guidance and the NAAQS reviews.
PAMS:	Photochemical Ambient Monitoring Stations. A nationwide research air monitoring program designed to measure specific airborne chemicals that are known to be “precursor pollutants” that form ozone when combined with ultraviolet light and heat. This program is managed by the U.S. EPA Office of Air Quality Planning and Standards (OAQPS).
PCAQCD:	Pinal County Air Quality Control District
Pb:	Lead, a criteria pollutant
PM:	Particulate matter, also known as “particulates”, project manager, or preventative maintenance depending on context
PM_{2.5}:	Particulate matter 2.5 micrometers in aerometric diameter or smaller, a criteria pollutant. PM _{2.5} is also referred to as “fine” particulate matter.
PM₁₀:	Particulate matter 10 micrometers in aerometric diameter or smaller, a criteria pollutant
PM_{10-2.5} and/or PM_c:	“Coarse” particulate matter is less than 10 micrometers, but recently, has come to mean PM ₁₀ minus PM _{2.5} , not currently regulated as a lone a criteria pollutant.
ppb:	parts per billion
ppm:	parts per million
PQAO:	Primary quality assurance organization - a monitoring organization (MO) or other organization that is responsible for a set of air monitoring stations that monitor the same pollutant and for which data quality assessments can be pooled. Each criteria pollutant sampler/monitor at a monitoring station in the SLAMS and SPM networks must be associated with one, and only one, primary quality assurance organization.
Primary Standard:	The portion of the NAAQS designed to protect public health.
QA:	Quality assurance – generally refers to the administrative or managerial processes in place to verify that quality control activities are successfully carried out by personnel and that data produced meet specified quality requirements prior to use, i.e., written guidance documents, program oversight activities, etc.
QC:	Quality control – generally refers to the technical activities in place to produce high quality data, i.e., air monitoring instruments operate within specified criteria, data collection from sites, etc.
Quality System:	The overall system of technical activities that measure the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer. (see <i>ANSI/ASQ E4-2004</i>)
RRNS:	Rapid Response Notification System - a communication tool used by MCAQD to manage high pollution events by alerting residents, intergovernmental personnel, and stakeholders of increasing PM concentrations.
Sampler:	A monitor that collects a physical sample for analysis.

Secondary Standard:	The portion of the NAAQS designed to protect public welfare and the environment.
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.
Site:	A site is a geographic location. One or more air monitoring stations may be located at a site.
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). Currently, AMD does not operate an NCORE station, and we only operate one SPM site.
SO₂:	Sulfur dioxide, a criteria pollutant
SPM:	Special Purpose Monitor. A special purpose monitor provides data for special studies needed by the State and local agencies to support SIPs and other air program activities. The SPMs are not permanently established as part of a particular pollutant's monitoring station(s); their location can be adjusted easily to accommodate changing needs and priorities.
SSI:	Size Selective Inlet. The inlet used on high- and low volume particulate samplers and analyzers to determine the size of particles sampled or measured by the monitor. The particle size separation process usually employs impaction, filtration, or cyclonic flow.
Station:	A station may comprise a single CP monitor, or a group of monitors with a shared objective, located at a particular site.
TEOM:	Tapered Element Oscillating Microbalance. A continuous FEM PM analyzer used by MCAQD to measure PM ₁₀ and/or PM _{2.5} concentrations, depending upon the instrument model and sample inlet configuration.
tpy:	tons per year
UATMP:	Urban Air Toxics Monitoring Program. A nationwide research air monitoring program designed to measure toxic air pollutants within urban areas. This program is managed by the U.S. EPA Office of Air Quality Planning and Standards (OAQPS).
U.S. EPA:	United States Environmental Protection Agency
VOC:	Volatile organic compound. 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 O ₃ pollution.
Volume:	The amount of air sampled onto a filter or other medium, or into a collection device such as a canister. Volume is calculated by multiplying the sampler's flowrate and the time period sampled, usually in minutes. The amount of data in a file or database.

ABSTRACT

In 2014, the Maricopa County Air Quality Department (MCAQD) Air Monitoring Division (AMD) successfully operated a robust air quality surveillance system that monitored for regulated ambient air pollutants as per *40 CFR Parts 50 and 58*. This plan documents how the system performed during 2014. The data generated by the system are intended for regulatory compliance determinations regarding regulated ambient air pollutants. Data met EPA's requirements of quality, which must occur before data can be used in this capacity. Notable accomplishments included the startup of our first near-road air monitoring station, which opened in February 2014. Significant advances occurred with establishing our second near-road monitoring station, which is scheduled to open in 2015.

The plan describes changes that need to be made to monitors, stations, and/or sites. In 2014, we did not request any waivers from air monitoring regulations, except for air monitoring waivers when access to a site prevented data collection for an extended period of time. When data collection interruptions occurred due to temporary or permanent site shutdowns, we made personnel at the Environmental Protection Agency's Region 9 (EPA R9) office aware of the situation immediately. Notably, our Higley site's location was closed in November 2014 due to the land owner needing use of their property, which housed the air monitoring station. We requested to suspend monitoring at this site until a suitable replacement location could be identified and established. We are working to secure a replacement site as close as possible to the previous geographic location so the same population is represented. There were no other waivers requested from regulatory requirements or to suspend air monitoring in 2014.

The department also performed specialized air monitoring projects that included, but were not limited to: collecting particulate filter samples for chemical speciation over the 2014 Thanksgiving, Christmas and New Year's holidays, planning a temporary air monitoring network for the 2015 Superbowl, and establishing temporary monitoring for emergency events.

Department personnel maintained successful working relationships with regulatory agency representatives, customers, and stakeholders. We provided our data to personnel from these groups as requested, and we responded to calls from the public regarding air monitoring questions. In late 2014, ADEQ decommissioned their gravimetric laboratory, and now, we process and weigh Arizona Department of Environmental Quality's (ADEQ) filter samples. Last, we assisted Pinal County Air Quality Control District (PCAQCD) and the Fort McDowell Yavapai Nation by temporarily loaning air monitors to them for special projects or to prevent data interruption due to their monitor being non-operational; however this information is not covered in detail. We continued to enhance our air monitoring website for the public's benefit as well.

INTRODUCTION TO THE AIR MONITORING NETWORK PLAN

Each year, MCAQD produces a comprehensive Air Monitoring Network Plan (AMNP) that provides vital information regarding the air monitoring surveillance system in place for Maricopa County. The EPA requires each air monitoring organization (MO) operating within the U.S and its territories to submit their plan on July 1st following a 30-day public comment period by way of *40 CFR Part 58, Subpart B §58.10(a)(1)*. This year's AMNP was submitted to EPA R9 on **TBD**.

The AMNP is preliminary to our annual data certification for EPA R9, and it helps us review and assess the quality of our data before submitting it for certification. The plan's secondary purpose is to inform the public of air pollutants that can potentially affect human health; thereby empowering our citizens and visitors with the ability to make informed decisions regarding their daily activities and lifestyles.

The plan describes our air monitoring system, which can be referred to as a conglomeration of six criteria pollutant (CP) networks, or a single, broad network that includes all 25 monitoring sites. It includes an abundance of information regarding each CP network's operation and data findings as well as brief information regarding special purpose and/or research-driven air monitoring. The plan's information includes, but is not limited to:

- Descriptions of air monitoring sites, i.e., site type and objective, spatial scale represented, geographic coordinates, and Air Quality System (AQS) site identification number;
- Each monitoring station's EPA classification, operating (sampling) schedule, the monitoring method in operation, and any laboratory analytical method used for analyzing physical samples if applicable;
- The population each monitor represents, e.g., Metropolitan Statistical Area (MSA), Core-based Statistical Area (CBSA), or the Combined Statistical Area (CSA);
- Information showing each monitor's siting and operating criteria met applicable regulatory requirements found in *40 CFR Part 58 - Appendices A (quality assurance), C (special purpose monitors), D (comparability of data to the National Ambient Air Quality Standards (NAAQS)), and E (currently reserved)*;
- Confirmation that data generated are or are not of suitable quality for comparison to the NAAQS, i.e., regulations that establish the ambient limit(s) for each CP;
- Required design value criteria, which are metrics used to determine how many monitoring stations/monitors are required to operate within a CP network;
- Three years of data from each station plus required statistical analyses;
- The NAAQS compliance status of each CP and how MCAQD plans to review and address a violating monitor;
- Any proposed changes, e.g., additions, relocations, and discontinuations to monitors, stations, and/or sites within the next 18 months;
- Any proposed changes to the monitoring or analytical methods employed by the County's surveillance system;
- Any requests for waivers from specific air monitoring requirements; and
- Public comments received regarding the draft AMNP and MCAQD's responses to the comments as requested by EPA R9.

The MCAQD first produces a draft AMNP and solicits public comments on the draft. Following the public comment period, the MCAQD amends the draft as needed. Then, the AMNP is sent to EPA R9 for review and approval, or disapproval. The EPA R9 completes the review process within 120 days of receiving the plan, and the EPA R9 administrator, or their representative, must specifically approve the requests for network changes and waivers. If the plan is not approved, then the MCAQD addresses the concerns presented by EPA R9 personnel, and resubmits the revised plan. Once the plan is approved, MCAQD posts it on our website, and the EPA makes it available to other MOs through the EPA's [Ambient Monitoring Technology Information Center \(AMTIC\) website](#).

The map below shows the location of MCAQD's air monitoring sites discussed in this year's plan (see Figure 1).

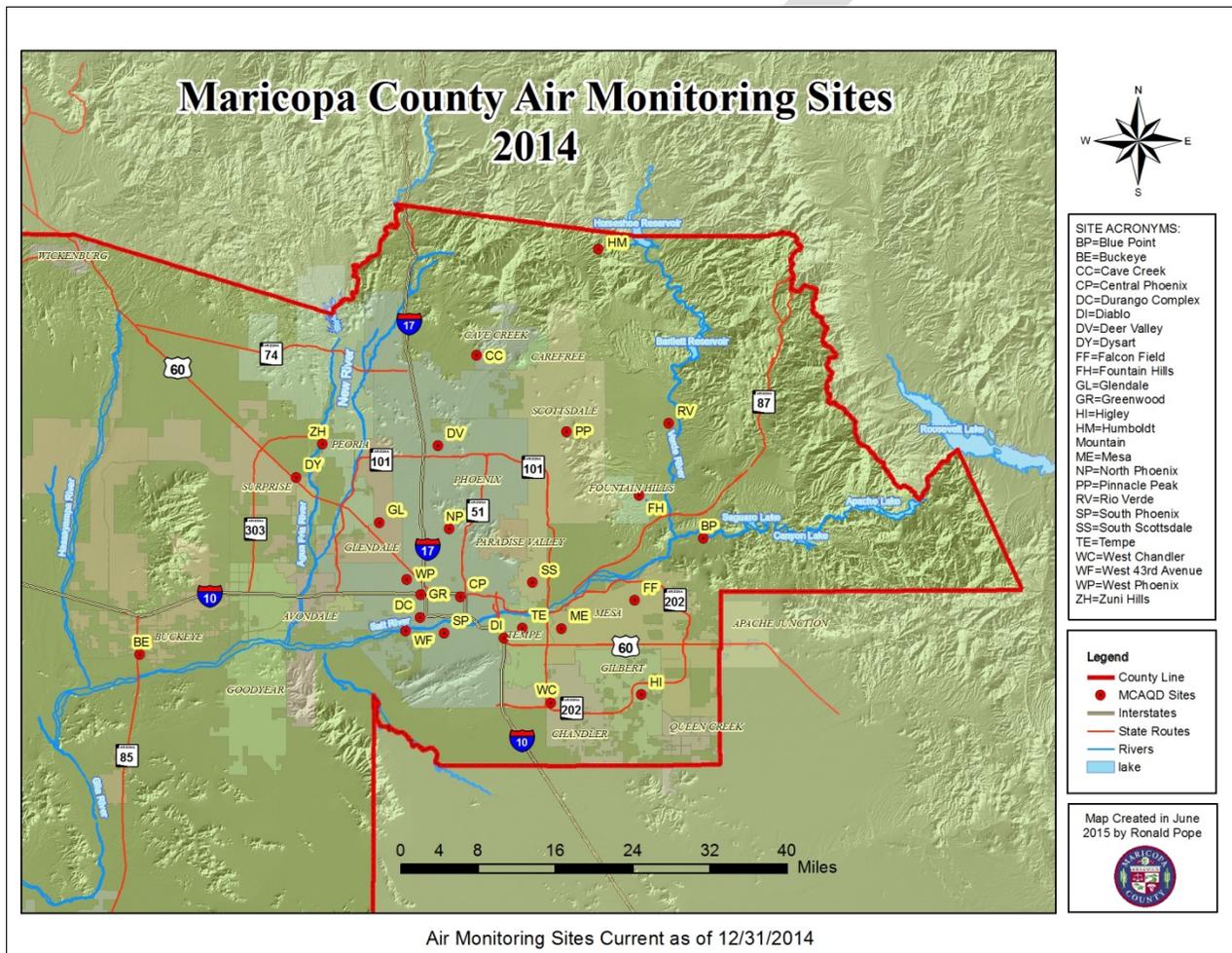


Figure 1. Air Monitoring Site Map

Overview of the Clean Air Act and Criteria Pollutants

Between the years 1900 and 1970, the emission of six principal ambient air pollutants increased significantly. The principal pollutants, referred to as CPs, occur throughout the U. S. The CPs are: carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_x) with nitrogen dioxide (NO₂) used as the indicator compound, ozone (O₃), particulate matter ≤10 micrometers (PM₁₀) and ≤2.5 micrometers (PM_{2.5}), and sulfur dioxide (SO₂). Criteria pollutants are known to cause health problems, property damage, and harm the environment. These issues led to the Clean Air Act (CAA) being signed into law in 1970. The CAA, and its amendments, provides the framework for all pertinent State/Local/Tribal (S/L/T) organizations to assess and protect air quality through an air monitoring program. The MCAQD monitors for all six CPs.

The U.S. EPA regulates CPs using the NAAQS, which establish ambient limits for each CP using health-based criteria. One set of limits, called “primary standards,” are designed to protect public health, while another set called “secondary standards”, are designed to protect public welfare, i.e., the prevention of damage to property such as farm crops and buildings, preservation of national parks and monuments, and the protection of wildlife. The U.S. EPA’s Regional Offices oversee the enforcement of the CAA, and monitoring agencies operating within Arizona fall under the jurisdiction of EPA R9. The U.S. EPA Office of Air Quality Planning and Standards (OAQPS) oversees the air monitoring program nationwide and the review of the NAAQS.

The NAAQS are not static. The CAA requires that they undergo periodic review using the most recent scientific, health-based information available. Historically, when a NAAQS limit is changed, it is lowered and becomes more stringent, or “conservative”. Lowering a NAAQS limit occurs when it is considered necessary to better protect the public’s health and/or welfare. The NAAQS review is a lengthy process that assesses the science upon which each NAAQS is based as well as the standard itself. The Clean Air Scientific Advisory Committee (CASAC) provides independent advice to EPA concerning the need to change a standard. In addition, comments are accepted from health researchers, air quality professionals, and the public. More information regarding the [NAAQS review process](#) is available at EPA’s website.

The National Ambient Air Quality Standards (NAAQS)

The NAAQS are geared toward improving air quality in geographical areas where the current quality is unacceptable as well as preventing air quality deterioration in geographical areas where the air is relatively free of pollution. Table 1 shows a summary of the current primary and secondary standards for each CP. Because each CP has different health effects and environmental damage potential, the NAAQS limit(s) are different for each pollutant. Some pollutants have standards for both long-term and short-term averaging times. The short-term standards are designed to protect against acute health effects, while the long-term standards are designed to protect against chronic health effects.

Table 1. National Ambient Air Quality Standards

Pollutant	Primary/ Secondary	Averaging Time	Level	Form	
Carbon Monoxide	primary	8-hour	9 ppm	Not to be exceeded more than once per year on avg. over 3 years	
		1-hour	35 ppm		
Lead	primary / secondary	Rolling 3-month average	0.15 $\mu\text{g}/\text{m}^3$	Not to be exceeded	
Nitrogen Dioxide	primary	1-hour	100 ppb	98 th percentile of 1-hour daily maximum concentrations, avg. over 3 years	
	primary / secondary	Annual	53 ppb	Annual Mean	
Ozone	primary and secondary	8-hour	0.075 ppm	3-year avg. of the annual fourth highest daily max 8-hour avg.	
Particulate Matter	PM _{2.5}	primary	Annual	12 $\mu\text{g}/\text{m}^3$	3-year avg. of the annual means
		secondary	Annual	15 $\mu\text{g}/\text{m}^3$	3-year avg. of the annual means
		primary / secondary	24-hour	35 $\mu\text{g}/\text{m}^3$	3-year avg. of the 98 th percentiles
	PM ₁₀	primary / secondary	24-hour	150 $\mu\text{g}/\text{m}^3$	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide	primary	1-hour	75 ppb	99 th percentile of 1-hour daily max., averaged over 3 years	
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	

Source: Adapted from the table shown on the [EPA's NAAQS webpage](#).

The Air Quality Index

To better communicate current CP health risks to the public, EPA developed the Air Quality Index (AQI), a health risk communication tool that converts CP concentrations into six health-impact related color-coded indices based upon the NAAQS. The AQI communicates air quality conditions using the graduated color scheme shown on Table 2. The AQI can be used to provide an overall air quality value by combining multiple CP concentrations as well as an air quality value for each CP, except NO₂, which is the only CP that does not have an AQI association. The AQI values change throughout the day based on the current data.

Developing AQIs was furthered over the past few years by continuous analyzers replacing many of their sampler predecessors; thereby making data available electronically as it is generated. Currently, many MOs, including MCAQD, provide near real-time CP data to their agency's website and/or the EPA's website. It is worth noting that the AQI and air quality forecasts are based on preliminary data, i.e., data that have not passed quality assurance (QA) tests. Occasionally, these data may contain some error.

Having continuous air monitoring data helps air quality professionals gauge current, local air quality conditions. Air quality forecasters may provide projected AQI values for the next 24 to 48 hours so the public can better prepare for expected air quality conditions. The public may use the AQI values to reduce their exposure to air pollution and its associated health effects by modifying their daily activities.

Table 2. 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 (e.g., 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.

Source: 40 CFR Part 58, Appendix G - Uniform Air Quality Index (AQI) and Daily Reporting

The AQI is used throughout the U.S. and the [EPA AIRNow website](#) provides air pollution forecast maps for O₃ and PM_{2.5}, plus real-time air pollution maps with CO, O₃, PM₁₀, and PM_{2.5} data for major metropolitan areas, including the Phoenix metropolitan area. Again, different colors on the map indicate health risks using pollutant concentrations. Figure 2 shows there is a moderate health risk due to O₃ and PM_{2.5} within the yellow area and an increased risk for unhealthy or sensitive groups within the orange area.

The MCAQD has participated in the AIRNow AQI program since 2001. The MCAQD, in cooperation with ADEQ and PCAQCD, 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.

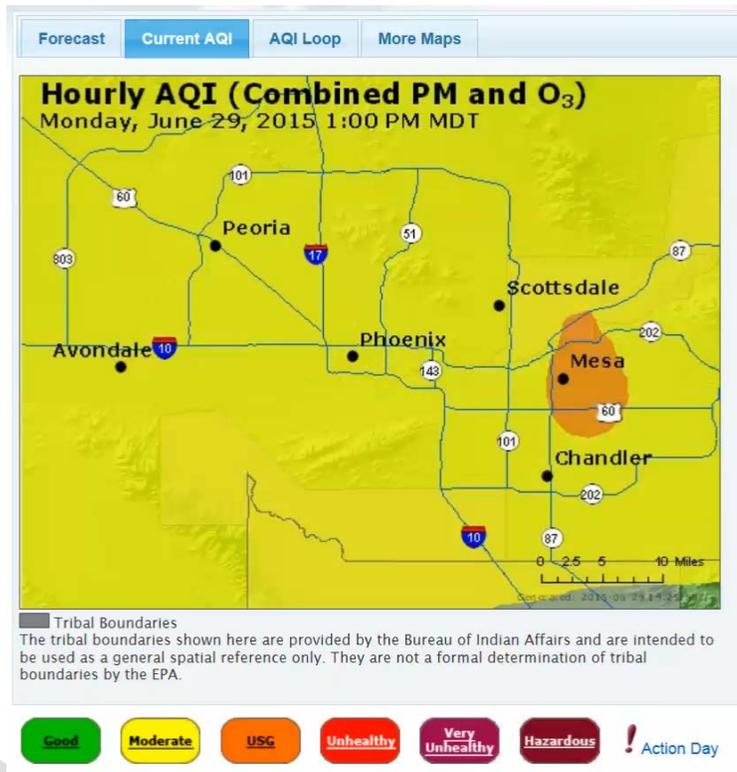


Figure 2. AIRNow AQI Forecast Map

Source: EPA AIRNow Website

The [MCAQD website](#) also shows the AQI values at our local air monitoring sites in colored circles (see Figure 3).

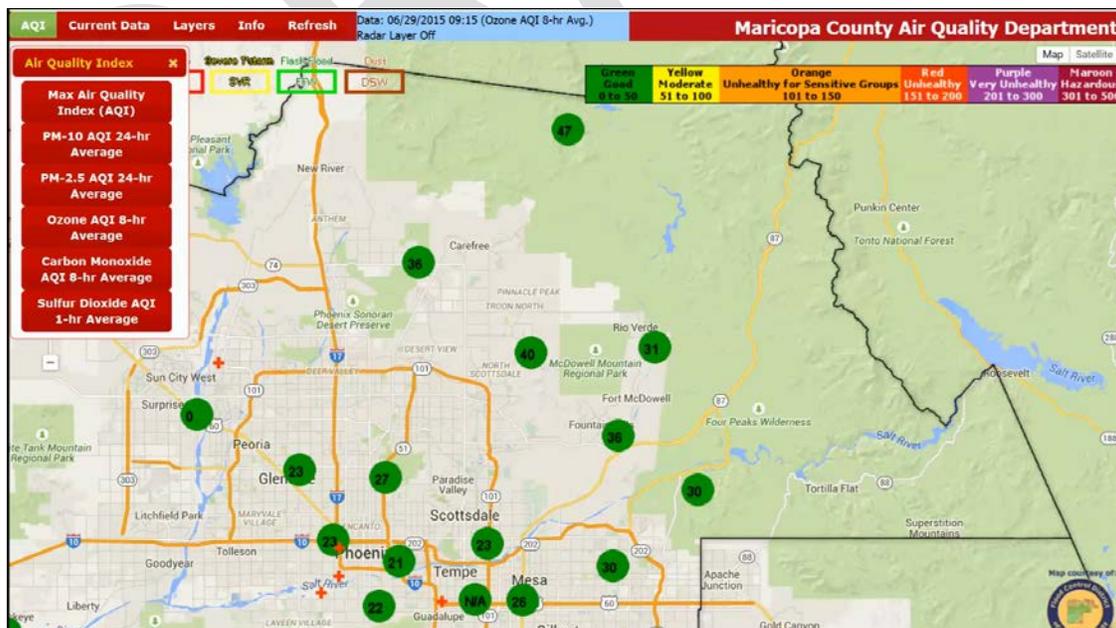


Figure 3. Maricopa County's AQI Map

Source: MCAQD's Air Quality Website

Information Regarding the Causes, Characteristics, and Compliance of Criteria Pollutants

The information regarding air pollutants was compiled from various pages at the EPA's [Air and Radiation website](#).

Carbon Monoxide (CO)

Carbon monoxide is a colorless, odorless gas found in both outdoor and indoor air. Carbon monoxide is primarily formed by the incomplete combustion of fossil fuels, e.g., carbon-containing fuels, and the photochemical reactions of gases in the atmosphere. Carbon monoxide is produced by both natural and anthropogenic sources, e.g., human activities. One of the more significant anthropogenic sources of CO is automobile exhaust, which currently contributes to about 50 percent of CO emissions nationwide. Concentrations of CO from motorized vehicles lowered considerably over the last two decades partly due to replacing carburetors with fuel injectors, which results in a more complete combustion of fuel. Industrial processes use CO to synthesize many compounds such as acetic anhydride, polycarbonates, acetic acid, and polyketones, which contributes some CO emissions. Carbon monoxide is emitted from the manufacturing of carbon black, which is used in numerous industrial applications such as a pigment in paints and as a reinforcing filler material in tires and rubber products. Natural, or biogenic, sources of CO emissions include volcanic emissions and smoke from wildfires. Smoke from tobacco, cooking, fireplaces, and woodstoves contribute to indoor exposure to CO. The global CO background measurements in ambient air are usually in the range of 25-350 ppb in the unpolluted atmosphere. Concentrations of CO tend to peak in the colder, winter months.

Many factors can influence a person's potential to respond adversely to CO exposure including: pre-existing medical disorders or disease states, age, gender, lifestyle, or increased CO exposures. People are considered to be at greater risk from chronic CO exposure when they live close to CO sources, including heavily travelled roadways. The population that is considered most at-risk from CO exposure includes: people with cardiovascular diseases, i.e., heart problems such as coronary artery disease and congestive heart failure, people with breathing problems due to chronic bronchitis, asthma, and chronic obstructive pulmonary disease, and people who suffer from anemia. Additional populations that may be at-risk include infants, children, and pregnant women; however, more study is needed in this area.

Carbon monoxide enters the body through inhalation, and the body eliminates CO primarily through exhalation and to a lesser extent through metabolic activity. After being inhaled, CO enters the bloodstream and binds to the blood's hemoglobin; thereby forming carboxy-hemoglobin that displaces oxygen (O₂) in the blood. This reduces the blood's capacity to carry O₂ to organs and tissues and causes the body to become O₂ deprived. This deprivation of O₂ is called hypoxia. This can adversely affect those with anemia, because anemia already reduces the blood's ability to carry O₂. Exposure to CO can result in a type of cardiovascular disease called ischemic heart disease, especially for those with existing heart problems. The central nervous system is adversely affected by CO as well. Acute exposure to severely high levels of CO is toxic and potentially fatal, and its effects on the body are well-known and widely studied. According to the [Agency for Toxic Substances and Disease Registry](#), severe acute poisoning can cause cardiac arrest, heart attack, seizures, hypotension, respiratory arrest, noncardiogenic pulmonary edema, and coma. Moderate exposure may include many symptoms such as: confusion, chest pain, and weakness. Mild exposure may lead to symptoms that include: headache, nausea, vomiting, dizziness, and blurred vision.

Furthermore, studies show that when CO is released into the environment, it remains in the atmosphere for approximately 2 months from the time of release and can be transported over long distances. When NO_x and water vapor are present in the air, and both usually are present to some degree depending on one's geographic location, they cause photochemical oxidation of CO that produces ground-level, or tropospheric, ozone (O₃). The National Aeronautics and Space Administration (NASA) [jet propulsion laboratory website](#) provides a brief summary on how O₃ forms and this reaction process. For this reason, CO is considered to be a precursor to O₃, and CO's influence on the formation of ground-level O₃ is of great interest to public health officials. To help better understand this process, EPA requires a CO analyzer at Type 2 stations within the Photochemical Ambient Monitoring Stations (PAMS) network. The ADEQ operates a PAMS Type 2 station within the Phoenix metropolitan area at JLG Supersite, and CO measurements have been collected at this site as far back as 1993.

Last, CO is considered a weak greenhouse gas (GHG) itself, but it adversely affects concentrations of other GHGs that are believed to contribute to global warming including: methane, ground-level O₃, and carbon dioxide (CO₂). As per the [EPA's website on climate change](#), CO₂ accounts for about 82% of GHG emissions due to human activities.

In 1971 EPA established identical primary and secondary standards for CO: an 8-hour primary standard at 9 parts per million (ppm) and 1-hour primary standard at 35 ppm. The EPA has reviewed the CO NAAQS several times since 1971, which led to the secondary standard being revoked in 1985. The primary standard levels have not changed to date, and currently, CO concentrations nationwide are substantially lower than the CO NAAQS. In 2014, Maricopa County achieved its 18th consecutive year of compliance with the 8-hour CO standard.

This general summary was compiled from the EPA's [Air and Radiation website](#) plus and the EPA's OAQPS Health and Environmental Impacts Division recently published the [Quantitative Risk and Exposure Assessment for Carbon Monoxide – Amended July 2010](#), which provides current CO exposure risk assessment information. This report was produced for the 2010 CO NAAQS review.

Lead (Pb)

Lead is a heavy metal that occurs naturally in the environment and is used in manufactured products. The major sources of Pb emissions have historically been motor vehicles such as cars and trucks, and industrial sources. In the early 1970s, EPA set national regulations to gradually reduce the Pb content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of EPA's regulatory efforts to remove Pb from gasoline, levels of Pb in the air decreased by 94 percent between 1980 and 1999. Levels of airborne Pb in Maricopa County were drastically reduced following the removal of Pb from automotive fuel. Since Pb concentrations were consistently below national levels, Maricopa County was allowed to discontinue ambient air monitoring for Pb in 1997.

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 Pb in air are generally found near lead smelters. General aviation airports are also a significant source of Pb, as general aviation fuel still contains Pb additives. Other stationary sources are: waste incinerators, utilities, and Pb-acid battery manufacturers.

An array of adverse health effects can be attributed to Pb exposure. Once taken into the body, Pb distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the O₂ carrying capacity of the blood. Currently, the foremost health effects associated with Pb exposure to children are neurological and for adults cardiovascular, e.g., high blood pressure and heart disease. Infants and young children are especially sensitive to even low levels of Pb, which may contribute to behavioral problems, learning deficits, and lowered IQ.

Lead is persistent in the environment and accumulates in soils and sediments through deposition from air sources, direct discharge of waste streams to water bodies, mining, and erosion. Ecosystems near Pb point-sources demonstrate a wide range of adverse effects including losses in biodiversity, changes in community composition, decreased growth and reproductive rates in plants and animals, and neurological effects in vertebrates.

Recent changes in the Pb NAAQS prompted the need to resume Pb monitoring activities within Maricopa County. In 2008, the Pb primary standard was revised to better public health, especially in "sensitive" populations, which include asthmatics, children, and the elderly. Initially, Pb monitoring was required near sources that emitted more than one ton of Pb per year. Later, Pb monitoring was required at NCORE stations around the U.S. In July 2010, MCAQD opened a new Pb monitoring site at Deer Valley Airport. The Deer Valley Airport is one of the busiest general aviation airports in Maricopa County, and the largest expected source of Pb emissions. Results from more than four years of monitoring have shown that ambient levels of Pb at the airport are still well below the current Pb NAAQS. The ADEQ operates the local NCORE station, and Pb concentrations have been collected at the JLG Supersite using a PM₁₀ sampler and inductively coupled plasma mass spectrometry for sample analysis as per EPA NCORE requirements.

Nitrogen Oxides (NO_x) with Nitrogen Dioxide (NO₂) as the Indicator Compound

Nitrogen dioxide belongs to a family of highly reactive gases called NO_x. These gases are formed when fuel is burned at high temperatures, and they are primarily emitted from automobile exhaust and power plants. Nitrogen oxides are key to the production of ground-level ozone (O₃). Ozone is formed when NO_x and volatile organic compounds (VOC) react in the presence of heat and sunlight. Emissions control measures have helped to significantly reduce NO₂ and may have the important co-benefit of reducing the formation of O₃ and fine particles as well.

When discussing health effects from this family of gases as well as NAAQS compliance, NO₂ is referenced; because, it has been selected by EPA as the “indicator” compound for NO_x. Unlike the other gaseous CPs, we measure the ambient levels of NO_x indirectly using chemiluminescent analyzers. The analytical process is sophisticated, but it basically involves determining the concentration of NO₂, then nitric oxide (NO). The NO₂ and NO concentrations are summed to determine the NO_x concentration as shown below.

$$\text{Equation 1: NO}_2 + \text{NO} = \text{NO}_x$$

For most of the population, the primary route of NO₂ entry into the body is inhalation. Current scientific evidence links short-term NO₂ exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Studies show a connection between breathing elevated short-term NO_x concentrations and increased visits to emergency rooms and hospital admissions for respiratory issues, especially asthma. Additionally, NO₂ reacts with ammonia, moisture, and other compounds to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.

In 1971, EPA set the first primary and secondary standards for NO₂ at 53 ppb, averaged annually. EPA reviewed the standards in 1985 and 1996, and chose not to revise either standard. In January 2010, EPA retained the 1971 standards and added to the primary standard a one-hour average limit of 100 ppb for the 98th percentile of the three-year average.

Recent research indicates that individuals who spend time on or near major roadways can experience acute NO₂ exposures considerably higher than measurement collected by the NO₂ network. Research by the EPA shows that NO₂ concentrations in vehicles and near roadways are appreciably higher than those measured at monitors in the current nationwide NO₂ network. EPA reports that in-vehicle concentrations can be 2-3 times higher than measured at nearby area-wide monitors. Near-roadway (within about 50 meters) concentrations of NO₂ have been measured to be approximately 30 to 100% higher than concentrations away from roadways.

For this reason, in February 2010 the EPA revised 1-hour NO₂ NAAQS and promulgated requirements for monitoring NO₂ at near-roadway stations. The S/L/T MOs are required to install near-road NO₂ monitoring stations in larger urban areas where hourly NO₂ concentrations are believed to be the highest in that urban area.

The regulations require a CBSA 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, to operate two near-road NO₂ monitors within that CBSA. Based on this regulation, Maricopa County is required to have two near-road NO₂ monitoring stations.

To ensure compliance with the new 1-hour NO₂ standard, AMD completed the installation and startup of the first of two near-road stations in February 2014. The station is housed at the new “Diablo” site, which is located off the I-10 near the Broadway curve, east of downtown Phoenix. We are currently in the construction phase for the second near-road monitoring station off the I-10, west of downtown. The new “Thirty-third” station is anticipated to startup in the second half of 2015.

In 2014, we recorded one 1-hour value that exceeded the 1-hour NO₂NAAQS limit at the Buckeye site, which is attributed to interference from exhaust of nearby construction vehicles. This is supported by meteorological data and site observations by personnel. Maricopa County is currently in attainment status for NO₂ compliance limits established in 1971 and 2010. In fact, there are no areas within Arizona that are in nonattainment with the NO₂ NAAQS.

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Ozone (O₃)

Ozone is a colorless, slightly odorous, reactive gas in which three oxygen atoms combine to form a molecule. Ozone occurs naturally in the Earth's upper atmosphere, known as the stratosphere, where it has a beneficial effect of protecting us from the Sun's harmful ultraviolet rays. However, at ground-level in the troposphere, it is the main component of smog, can harm our health, and affect vegetation and ecosystems even at low concentrations. Anthropogenic activities have been a leading cause of ground-level O₃ due to VOC and NO_x being emitted into the atmosphere from industrial facilities, electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents. Nationally, O₃ concentrations declined in the 1980's, leveled off in the 1990's, and showed a notable decline after 2002 in part due to more stringent emission controls that lowered VOC and NO_x concentrations.

Ozone is not directly emitted into the air, but is formed by a complex photochemical reaction that involves sunlight, heat, and a "soup" of pollutants, especially VOCs and NO_x. Ozone is continually going through a rapid, natural cycle of being formed, then converted back to the more stable, or "normal", double oxygen molecule (O₂). Ozone is likely to reach unhealthy levels on hot, sunny days in urban environments, but it can impact rural areas by being transported long distances by wind. Although the Phoenix metropolitan area has sunshine most of the year, there is a seasonal pattern to O₃ concentrations with lower concentrations occurring in the winter months. It is interesting to note that a recent study observed elevated O₃ concentrations during cold months at a few high elevation locations in the western U.S. due to high levels of local VOC and NO_x emissions.

Ozone causes significant physiological and pathological changes in both animals and humans at concentrations present in many urban environments. Ozone affects the respiratory system in people and animals, and it also affects the growth of plants. The primary route of entry into the body is inhalation. Symptoms of O₃ exposure generally involve the lungs, and can include: coughing, a sore or scratchy throat, shortness of breath and chest pain on deep inhalations, increases in asthma attacks, and damage to the lungs. The population at the greatest risk is children. This is because: their lungs are still developing, they are more likely to be active outdoors when O₃ levels are high, and they are more likely to have asthma than adults.

Animal studies suggest that O₃ exposure interferes with or inhibits the immune system. With plants, O₃ at ambient concentrations injures the stomates, which are the cells that regulate plant respiration, resulting in flecks on the upper leaf surfaces of dichotomous plants and the death of the tips of coniferous needles. Ozone is considered by plant scientists to be the most important of all of the phytotoxic air pollutants, causing over 90 percent of all plant injury from air pollution on a global basis.

In 1997, the primary and secondary O₃ NAAQS were lowered to 0.08 ppm using the annual fourth-highest daily maximum 8-hour concentration, averaged over three years. Many O₃ monitoring sites were found to exceed this limit, which led to EPA designating Maricopa County as nonattainment for the 1997 NAAQS in 2004. On June 15, 2005, EPA revoked the 1997 1-hour average primary standard for O₃, and it was been replaced by the 8-hour average standard for compliance purposes.

In March 2008, the NAAQS were lowered again to better protect public health and welfare. The EPA reduced the primary and secondary 8-hour O₃ NAAQS from 0.080 to 0.075 ppm (75 ppb). When the 2008 NAAQS became effective in May 2008, O₃ concentrations in the County had improved, but they were exceeding the new limit. This led to EPA designating portions of Maricopa and Pinal Counties as marginal nonattainment for the 2008 O₃ NAAQS in 2012. The Maricopa Association of Governments

(MAG) is responsible for implementing the plan for Maricopa County to reach attainment. Excluding portions of Maricopa and Pinal Counties, Arizona is currently in attainment for the O₃ NAAQS. Compliance with the standard is determined by averaging the 4th highest 8-hour average over a 3-year period. This 3-year average must be less than or equal to 0.075 ppm.

In 2014, the O₃ NAAQS review process began again, and we anticipate that both O₃ NAAQS will be lowered in late 2015 or 2016. The proposed limits for the primary standard are between 0.070 and 0.060 ppm. The limits for the secondary standard are similar. In 2014, 14 out of 18 MCAQD sites exceeded the 8-hour average of 0.075 ppm at least once during O₃ season. Based on our data, it is clear that lowering the NAAQS will introduce additional compliance challenges for Maricopa County. To achieve compliance with the new NAAQS and to improve air quality for all, additional strategies to reduce O₃ will have to be developed and implemented, and air monitoring efforts and associated resources are bound to increase. Lowering the NAAQS will potentially affect the attainment status of other geographical areas in Arizona, too.

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Particulate Matter (PM)

Particulate matter is a collective term describing very small solid or liquid particles that vary considerably in size, geometry, chemical composition, and physical properties. Numerous chemical components may be present in particle pollution including: acids, such as nitrates and sulfates, organic chemicals or biomass, metals, soils, and finer dust particles. Particulates can be formed by natural processes, such as pollen production and wind erosion, and anthropogenic activities, such as commercial, industrial, and agricultural operations. Particulates contribute to visibility reduction, pose a threat to public health, and cause economic damage.

Again, EPA currently regulates PM pollution using two size categories:

- “PM₁₀” with size range ≤ 10 micrometers (μm) in aerometric diameter;
- “PM_{2.5}”, aka "fine particles", with a size range of ≤ 2.5 μm in aerometric diameter.

The larger particles that make up PM₁₀ form through mechanical processes such as the grinding of matter and the atomization of liquids, natural weathering processes, and anthropogenic activities that disturb soil. The earth's crustal components are often present in PM₁₀. In Arizona, elevated concentrations of PM₁₀ are associated with people driving on unpaved roads, dusty industries, and dust storms related to high wind events. Previously, air quality personnel have referred to PM₁₀ as “coarse” PM; however, the description of PM coarse is evolving. The EPA currently refers to coarse PM (PM_{10-2.5} or PM_c) as particles having a diameter between 2.5 μm and 10 μm . Years ago, coarse particles were defined as having diameters ranging from about 2.5 μm to more than 40 μm . Furthermore, recent health effects studies are starting to separate PM into several size ranges: PM₁₀, PM_{2.5}, PM_c, and “ultrafine” particulates, a subpart of PM_{2.5} with particles having ≤ 1.0 μm aerometric diameter. The ability to separate particulates into these size categories is possible due to advances in PM monitors.

Fine particulates are formed by the condensation of vapors or by their subsequent growth through coagulation or agglomeration. Fine particulates are further classified as “primary”, meaning they are produced within and emitted from a source such as a controlled burn, wildfire, or a fireplace with little subsequent change, or “secondary”, meaning they are not directly emitted by the sources such as power plants and automobiles. Secondary particulates form in the atmosphere from gaseous emissions from sources. For example, the fine particles in smoke are classified as primary. Nitrates and sulfates are classified as secondary, because they formed by oxidation of gaseous SO₂ and NO₂. Last, some fine PM constituents, such as atmospheric carbon, can be classified as both a primary and secondary particulate, because it forms either way.

For PM, the primary route of entry into the body is through inhalation. The size, shape, and chemical composition of particulates determine the health effects that may result from PM exposures. The potential for causing health problems is directly linked to particle size. Smaller particles are more toxic than larger particles because of the higher relative content of toxic metals and ions combined with the increase of particle surface area. The EPA is concerned about particles ≤ 10 μm in diameter, because those are the particles that generally pass through the throat and nose and enter the lungs. Coarser particles are deposited in the upper parts of the respiratory system, but finer particles are deposited deeper into the respiratory system. Fine particles are small enough to be deposited in the lung's alveoli, which are tiny air sacks deep inside the lungs. Some research shows that the smallest of particles may enter the bloodstream as well. Currently, research is being conducted to better understand the health effects of ultrafine particles.

The populations most at risk from particulate exposure are diabetics, older adults, and children, because they tend to be more physically active and this causes them to breath faster and deeper. Once inhaled, these particles can cause serious heart and lung health effects that affect both humans and animals. Epidemiological studies show that long-term, chronic exposures, e.g., years, to high levels of particulates are associated with reduced lung function, the development of chronic bronchitis, and premature death. Studies show that short-term, acute exposures, e.g., hours to days, to high levels of particulates can aggravate lung disease, cause asthma attacks and acute bronchitis, and may increase susceptibility of respiratory infections. For those with heart disease, it can induce heart attacks. Acidic aerosols have been linked to the inability of the upper respiratory tract and pulmonary system to remove harmful particles.

In 1987, the EPA replaced the 1971 Total Suspended Particulates (TSP), i.e., particles around 40 μm and less in aerometric diameter, with the primary and secondary NAAQS for PM_{10} . The EPA revoked the annual PM_{10} NAAQS in 2006. Currently, the 24-hour primary and secondary limits for PM_{10} are both $150 \mu\text{g}/\text{m}^3$. In 2012, the PM_{10} NAAQS underwent review with exposure to $\text{PM}_{10-2.5}$ also being considered. This review resulted in EPA retaining the existing primary and secondary 24-hour PM_{10} NAAQS, which is considered to provide for protection against effects associated with acute exposure to thoracic $\text{PM}_{10-2.5}$, i.e., inhaled particles that make it past the larynx. According to the January 15, 2013 *Federal Register* (78 FR 3085), the U.S. EPA Administrator concluded that “the available health evidence and air quality information for $\text{PM}_{10-2.5}$, taken together with the considerable uncertainties and limitations associated with that information, suggests that a standard is needed to protect against short-term exposure to all types of $\text{PM}_{10-2.5}$ and that the degree of public health protection provided against short-term exposures to $\text{PM}_{10-2.5}$ does not need to be increased beyond that provided by the current PM_{10} standard.” This indicates that future NAAQS may be forthcoming for $\text{PM}_{10-2.5}$. The EPA is scheduled to complete the next NAAQS review for the PM standards in 2017.

In 1997, the EPA reviewed and updated the $\text{PM}_{2.5}$ NAAQS limits. Since then, these NAAQS have been reviewed in 2006 and 2012 with some limits being made more stringent. On December 14, 2012, EPA retained the primary 24-hour $\text{PM}_{2.5}$ standard of $35 \mu\text{g}/\text{m}^3$, but reduced the primary and secondary NAAQS annual $\text{PM}_{2.5}$ limit to $12 \mu\text{g}/\text{m}^3$ and $15.0 \mu\text{g}/\text{m}^3$, respectively. The January 2013 *Federal Register* (78 FR 3085), also shows the U.S. EPA’s final determinations for the 2012 $\text{PM}_{2.5}$ NAAQS review. The EPA’s new rulings on the PM NAAQS became effective March 18, 2013.

Effective April, 15, 2015, Maricopa County remains “unclassifiable/attainment” for the $\text{PM}_{2.5}$ NAAQS. A status of unclassifiable/attainment means that Maricopa County’s air quality meets or is expected to meet the $\text{PM}_{2.5}$ NAAQS, but limited data were available for use when the determination was made. This is good news, because we tend to experience 24-hour exceedances during the colder, winter months near the Thanksgiving, Christmas and New Year’s Day holidays. In colder months, smoke from residential fireplaces coupled with the air inversion tends to drive-up $\text{PM}_{2.5}$ concentrations throughout the metropolitan area.

In 2014, ADEQ and Maricopa County representatives worked together on a public outreach campaign to improve air quality in the County around the fall/winter holidays. Controls to reduce particulates have been in place for decades, beginning in the 1960s with a Pima County ordinance that required watering to reduce dust from construction. Maricopa County’s umbrella dust abatement rule, Rule 310, has been revised many times through the years and now regulates construction dust, trackout dust from construction sites, and dust from unpaved parking and vacant lots. Efforts to reduce dust resuspended

from paved roads have concentrated on eliminating trackout from construction sites, curbing and stabilizing road shoulders, and investigating more efficient street sweepers.

The Governor's Agricultural Best Management Practices Committee has developed a rule containing best management practices for agricultural activities (AgBMP) to reduce particulate emissions from tilling and harvesting activities of croplands and non-croplands. In a recent PM₁₀ State Implementation Plan (SIP), MAG committed to implementing 77 new measures including enhanced enforcement of the County's dust rules, implementation of AgBMP, diesel engine replacement and retirement programs, and requirements for cleaner burning fireplaces to further reduce PM_{2.5} emissions. As vehicle emission controls helped to reduce fine particulates and precursor gases, these cleaner burning fireplaces can reduce fine particulates as well. For example, reducing gaseous hydrocarbon emissions led to reductions in ambient concentrations of secondary organic carbon.

In 2005, Congress identified a need to account for events that result in exceedances of the NAAQS that are "exceptional" in nature, i.e., not expected to recur or caused by acts of nature beyond man-made controls. In response, the U.S. EPA promulgated the *Exceptional Events Rule (EER)* found in *40 CFR Parts 50 and 51* on March 22, 2007 (*72 FR 13560*). In an attempt to clarify this rule, the U.S. EPA released draft guidance documents on the implementation of the *EER* to S/T/L agencies for review on May 2, 2011 and July 12, 2012. Maricopa County is susceptible to both windblown dust due to the arid climate and to smoke events from fires, both of which may qualify as an "exceptional event" (EE). The *EER* allows for S/T/L to "flag" ambient air quality monitoring data as an EE and to exclude those data when determining NAAQS exceedances or violations if the EPA concurs with the demonstration package. Some exceedances of the PM₁₀ NAAQS within Maricopa County have been successfully approved as an EE. Exceptional event information for 2012 – 2014 is shown in the 2014 Summary of Network Results and Required Information section.

The ADEQ is responsible for producing and submitting EE packages to EPA Region 9 for concurrence. The MAG is responsible for designing strategies to reduce PM pollution and bring the County into attainment with the PM₁₀ NAAQS. The MCAQD implemented an automated alarm system that triggers email notifications and/or telephone calls to subscribers when concentrations of PM₁₀ and PM_{2.5} escalate to help reduce their concentrations. Subscribers of the alert system include, but are not limited to: MCAQD's compliance and air monitoring personnel as well as industrial source representatives who can take action to reduce PM emissions cause by their work activities. In addition, the County enforces a "no burn restriction" when a PM_{2.5} High Pollution Advisory (HPA) is issued by ADEQ.

Sulfur Dioxide (SO₂)

Sulfur dioxide is a colorless gas with a pungent irritating odor at elevated concentrations. It is emitted in gaseous form primarily from burning high-sulfur coal, oil, and diesel fuel. Most fuels contain trace quantities of sulfur and their combustion releases both gaseous SO₂ and particulate sulfate; therefore, separating the health effects of these two chemicals is difficult. Together, SO₂ 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.

Sulfur dioxide's primary route of entry into the body is by inhalation. It contributes to respiratory illness, particularly in children and the elderly, and aggravates existing heart and lung diseases. Sulfur dioxide contributes to the formation of acid rain, and it contributes to the formation of atmospheric particles that cause visibility impairment, most notably in national parks. Sulfur dioxide and the pollutants formed from SO₂, such as sulfate particles, can be transported over long distances and deposited far from the point of origin. This means that problems associated with SO₂ are not confined to areas where it is emitted.

Sulfur dioxide is removed from the atmosphere through dry deposition on plants, and it is converted to sulfuric acid, and eventually sulfate particles. Both contribute to public health problems and negatively impact the environment. The SO₂ and sulfate from vehicular emissions have been significantly reduced over the years through lowering the sulfur content in diesel fuel and gasoline. The EPA 2011 [National Emissions Inventory \(NEI\)](#) report shows the estimated quantity of SO₂ emitted from various sources in Arizona and in Maricopa County.

The majority of state-wide SO₂ emissions occurs in eastern Arizona and is produced by coal-based electricity generation, the smelting of non-ferrous, e.g., non-iron-containing, sulfide copper ore from mines, and smoke from wildfires. Major controls were installed in Arizona's copper smelters in the 1980s, which reduced SO₂ emissions substantially. In addition, most of the copper ore smelters that used to operate have been shutdown, which reduced SO₂ emissions in localized areas around the state. As of 2013, the only regulated smelters operating in Arizona are located about 90 miles east of downtown Phoenix, in Miami and Hayden, Arizona.

In Maricopa County, the majority of SO₂ is emitted from mobile and industrial sources. Currently, MCAQD operates two year-round SO₂ monitoring stations using pulsed fluorescence analyzers. The siting of SO₂ monitors is based on EPA requirements as is the case for all ambient air monitoring networks.

AIR MONITORING STRATEGIES AND SURVEILLANCE SYSTEM DESIGN

Overview of the Criteria Pollutant Networks

The AMD monitors for the six CPs by operating and maintaining 25 ambient air monitoring sites located throughout Maricopa County. The sites' startup dates range from 1961 for Central Phoenix to 2014 for Diablo. Land use patterns around the sites vary from densely populated urban areas to sparsely populated rural settings. The sites' elevations range from 845 feet above sea level at Buckeye to 5190 feet above sea level at the top of Humboldt Mountain. Each site's pollutant monitoring station(s) are chosen based on specific EPA requirements as described below, special requests from EPA, and/or specific needs of the County. Some sites measure many pollutants; while others may only measure one or two. The requirements for operating the ambient air monitoring system are found in both *40 CFR Parts 50 & 58*.

The MCAQD has been designated as a Primary Quality Assurance Organization (PQAO) by EPA R9 for our ambient air monitoring program, which basically means that we do not share QA roles and/or responsibilities with another MO. The MCAQD is fully responsible for designing, operating, and reporting data from our surveillance system to EPA's AQS database. However, MOs within Arizona may provide support to each other by exchanging technical services and/or knowledge when problems arise with instrumentation or special studies.

This section details how MCAQD designs its air monitoring networks to obtain representative CP data. In addition to producing this AMNP, EPA now requires a five-year network assessment as per *40 CFR § 58.10*. The 5-year assessment is best served by collaborating with EPA, ADEQ, and other local and/or tribal agencies. The first assessment was produced in 2010 and the second will be produced in 2015. The assessment process continues to improve, and MCAQD is working with other MOs regarding CP network design issues to the extent possible.

Monitoring Objectives

The ambient air monitoring networks must be designed to meet the three basic monitoring objectives listed below. The order of these objectives shown below is not based upon priority. Each objective is important and must be considered individually.

1. Provide air pollution data to the general public in a timely manner. Data can be presented to the public in a number of attractive ways including: air quality maps, newspapers, MO and EPA websites, and as part of weather forecasts and public advisories.
2. Support compliance with the NAAQS and developing emission control strategies. To determine compliance with the NAAQS and to develop attainment and maintenance plans, only data collected by EPA-approved methods can be used. The EPA classifies approved methods into one of three categories: a federal reference method (FRM), a federal equivalent method (FEM), or an approved regional method (ARM). The MCAQD only uses FRM and FEM instruments within the CP surveillance system. This practice ensures high-quality data of like kind are used for compliance-driven decisions. However, additional data from research monitors can be used to further evaluate regional air quality models used in developing emissions' strategies, tracking trends in air pollution, and evaluating the impact control measures are having on improving air quality.

3. Support air pollution research studies geared toward assessing health effects, atmospheric processes, or future monitoring methods in development. In addition to data collected by FRM and FEM monitors, MCAQD may produce other data for special studies as well. These data can be made available for decision makers; but they are not necessarily reported to AQS. In Maricopa County, EPA R9 has charged ADEQ with collecting the majority of research data at JLG Supersite via the following networks: National Core multi-pollutant site (NCORE), Photochemical Ambient Monitoring Stations (PAMS), Chemical Speciation Network (CSN), National Air Toxics Trends Stations (NATTS), and Urban Air Toxics Monitoring Program (UATMP). The data from these networks should be available in AQS.

Monitoring Site Types

To support the three basic air monitoring objectives, a network must be designed with a variety of monitoring site “types”. Monitoring sites must be capable of informing managers and the general public about peak air pollution levels, typical levels in populated areas, air pollution transported into and outside of a city or region, and air pollution levels near specific sources (see Table 3).

Table 3. Site Monitoring Types

Measure highest concentrations expected to occur in the area covered by the network.
Measure typical concentrations in areas of high population density.
Determine the impact of significant sources or source categories on air quality.
Determine general background concentration levels.
Determine the extent of regional pollutant transport among populated areas and in support of secondary standards.
Measure air pollution impacts on visibility, vegetation damage, or other welfare-based impacts.

Source: Adapted from 40 CFR Part 58, Appendix D

Spatial Scales of Monitoring

The concept of “spatial scale of representativeness” was created to help link monitoring objectives and site types with the physical location of a monitor. The spatial scale of representativeness is defined in terms of the physical dimensions of the air parcel around a monitoring site throughout which pollutant concentrations are reasonably similar. There are six scales of representativeness of most interest for the monitoring site types (see Table 4).

Table 4. Spatial Scales of Representativeness

Name	Distance
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
National and Global Scales	Characterizing the nation and the globe as a whole.

Source: Adapted from 40 CFR Part 58, Appendix D, 1.2

Air Monitoring Station Classifications

It is worth noting that NO₂ air monitoring stations can have several different classifications. An NO₂ station’s classification is largely determined by the underlying purpose for collecting the data, and the definitions regarding the various station classifications are found in 40 CFR Part 58. A brief overview of the potential NO₂ station classifications is provided below.

State and Local Air Monitoring Stations (SLAMS)

The stations operated by ADEQ are most often SLAMS, which gather data for comparison to the NAAQS. “SLAMS” make up the ambient air quality monitoring sites that are primarily needed for NAAQS comparisons, but may serve other data purposes as well. SLAMS exclude special purpose monitors (SPM) and Prevention of Significant Deterioration (PSD) monitors, but include air monitors for specialized programs that are considered a subset of SLAMS such as the NCore and PAMS stations.

Special Purpose Monitor (SPM) Stations

As defined by 40 CFR Part 58, an “SPM station” means a monitor included in an agency’s network that the agency has designated as a special purpose monitor station in its monitoring network plan and in the AQS. The agency does not count an SPM toward showing compliance with the minimum requirements for QA, siting, and for the quantity of monitors needed for a particular criteria pollutant. SPMs are not required to meet the rigorous QA/QC requirements applied to SLAMS monitors. Often

SPMs are used to quickly gather and report preliminary information regarding air quality in a local area. It is important to reference EPA requirements regarding the operation of an SPM monitor.

It is important to note that if an SPM station uses an FRM, FEM, or ARM method and meets the siting requirements in *40 CFR Part 58 Appendix E* (same as those applied to SLAMS), then the agency can be limited to its removal without EPA approval. Removal depends upon the particular CP concentrations recorded and the monitor's operating duration. Usually, if the monitor operates for more than two years, removing it will need prior approval by EPA. In the event the of a geographical area's population increases or air quality data indicate a SLAMS is more appropriate, an SPM station may be reclassified to a SLAMS and potentially outfitted with a different model FEM monitor. ADEQ plans to work with EPA regarding SPMs in our network and information regarding SPMs is also found in the ANP.

Locating Monitors

Since it is physically and fiscally impossible to monitor air quality in every location, the goal in locating monitors is to correctly integrate the monitoring objective and monitoring site type with the spatial scale of representativeness most appropriate for the air pollutant to be measured. For example, consider the case where the objective is to determine NAAQS compliance by understanding the maximum O₃ concentrations for an area. Such areas would most likely be located downwind of a metropolitan area, quite likely in a suburban residential area where children and other susceptible individuals are likely to be outdoors. Sites located in these areas are most likely to represent an urban scale of measurement. In this example, physical location was determined by considering O₃ precursor emission patterns, public activity, and meteorological characteristics affecting O₃ formation and dispersion. Thus, spatial scale of representativeness was not used in the selection process, but was a result of site location.

Using these principles, the total number of monitoring sites that will serve the variety of data needs will be substantially higher than federal minimum requirements. The optimal size of each pollutant's network involves trade-offs among data needs and available resources; and, the network's size is subject to change over time. Each pollutant's network must be dynamic enough to maintain a current representative sampling of the air quality.

Overview of the Air Monitoring Sites

Maricopa County has a population of over 3.9 million people based on the 2012 U.S. Census estimate. As per 40 CFR Part 58, the EPA mandates the minimum quantity of monitors required by a pollutant’s network to properly represent the County’s population. As previously mentioned, the MCAQD networks are designed using the concept of spatial scale representativeness and monitoring objectives. This has resulted in CP networks that meet, and in most cases exceed, the minimum quantity of monitors required by EPA (see “Required General Information on Monitoring Network” in Appendix II). The 25 monitoring sites operating in 2014 are shown again in Figure 4.

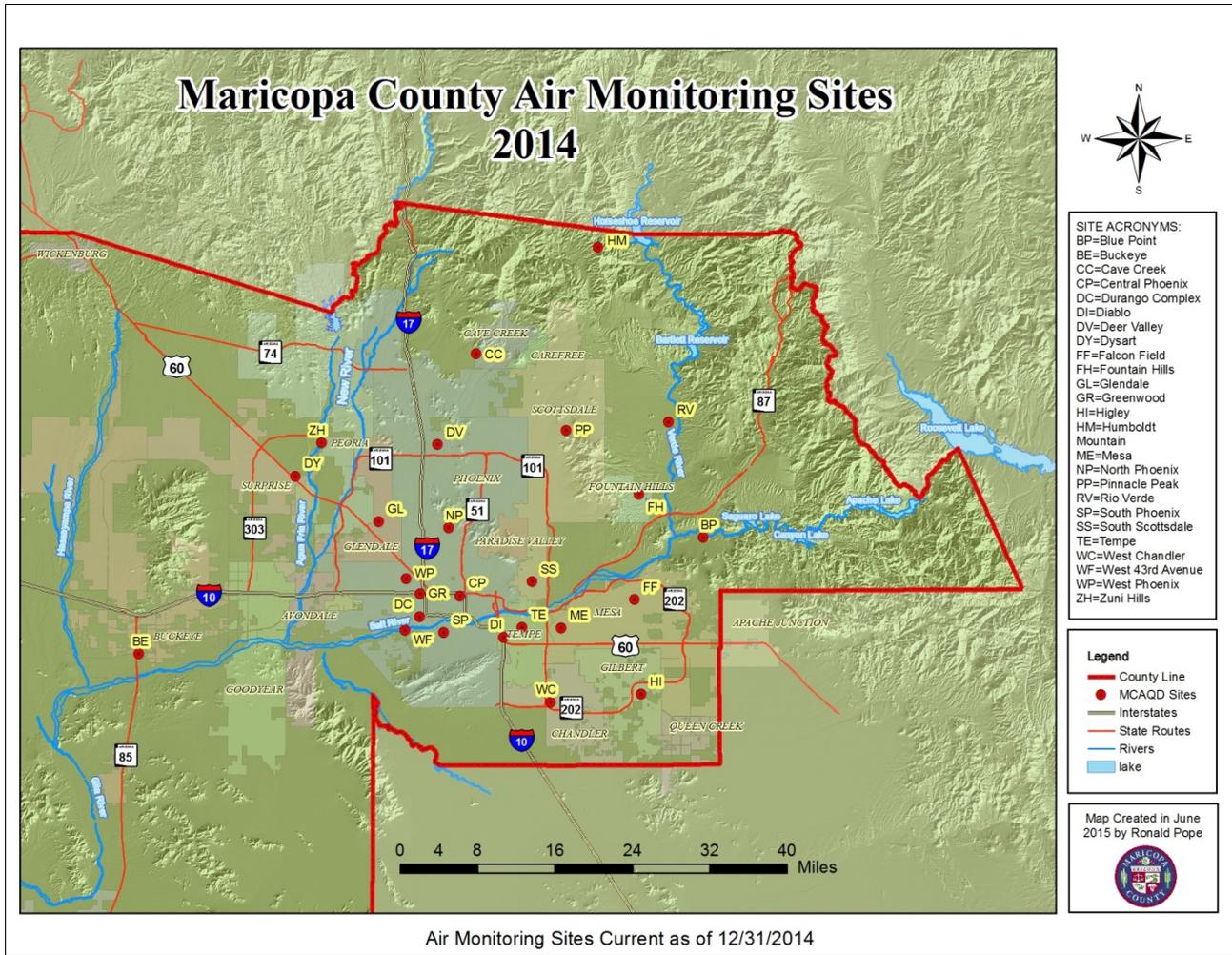


Figure 4. 2014 Air Monitoring Sites

The following tables show details regarding each site's AMD abbreviation symbol, EPA's AQS identification number, geographic coordinates, and the full complement of air monitors and/or sensors. All CP monitors are now classified as SLAMS. Table 5 shows the MCAQD's site abbreviations and the AQS identification number. Table 6 shows the specific geographic coordinates for the location of each site. Table 7 provides the complement of air monitoring instruments operating at each site in 2014.

Table 5. Maricopa County Ambient Air Monitoring Sites for 2014

Name	AMD Abbreviation	AQS ID
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
Diablo	DI	04-013-4019
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
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

* This site experienced an extended monitoring interruption in 2014.

Table 6. Location of Air Monitoring Sites

Site	Latitude	Longitude	Location	AQS Code
BP	33.54549	-111.60925	Usery Pass & Bush Highway	04-013-9702
BE	33.37005	-112.62070	MC 85 & AZ HWY 85	04-013-4011
CC	33.82169	-112.01739	32 nd St. & Carefree Highway	04-013-4008
CP	33.45793	-112.04601	19 th St & Roosevelt St.	04-013-3002
DV	33.684627	-112.08635	10 th Ave. & Deer Valley Rd.	04-013-4018
DC	33.42650	-112.11814	27 th Ave. & Durango St.	04-013-9812
DY	33.63713	-112.34184	Bell Rd. & Dysart Rd.	04-013-4010
DI	33.3961	-111.9680	Fairmont Dr. & Diablo Way	04-013-4019
FF	33.45223	-111.73331	McKellips Rd. & Greenfield Rd.	04-013-1010
FH	33.61103	-111.72529	E. Palisades Blvd. & Fountain Hills Blvd.	04-013-9704
GL	33.56936	-112.19153	59 th Ave & W. Olive Ave.	04-013-2001
GR	33.46093	-112.11748	27 th 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	7 th Street & Dunlap Ave.	04-013-1004
PP	33.70655	-111.85557	Alma School Rd. & Happy Valley Rd.	04-013-2005
RV	33.71881	-111.67183	Forest Rd. & Del Ray Ave.	04-013-9706
SP	33.40316	-112.07533	Central Ave. & Broadway Rd.	04-013-4003
SS	33.47968	-111.91721	Scottsdale Rd. & Miller 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	43 rd Ave. & Broadway Rd.	04-013-4009
WP	33.48385	-112.14257	39 th Ave. & Earll Dr.	04-013-0019
ZH	33.686738	-112.294171	109 th Ave & Deer Valley Rd.	04-013-4016

Table 7. Air Monitoring Instruments by Site

AIR MONITORING SYSTEM OPERATIONS

Sites	AQS Site ID	CO	O ₃	NO ₂	SO ₂	PM ₁₀ Hourly	PM _{2.5} Hourly	PM _{2.5} Filter	Pb	Delta T	Amb. Temp	Baro. Press	Rel. Hum	WS / WD	Rain	Solar	Rm	Multi-Gas Calibrator	Active Instruments	Last Audit
BE	04-013-4011	1 *	1	1		1					1	1	1	1			1	1	10	06/02/15
BP	04-013-9702		1								1			1			1		4	06/02/15
CC	04-013-4008		1								1		1	1	1		1		6	06/02/15
CP	04-013-3002	1	1	1	1	1					1	1	1	1			1	1	10	06/02/15
DC	04-013-9812				1	1	1				1	1	1	1			1	1	9	06/02/15
DI	04-013-4019	1		1			1				1		1	1			1	1	8	06/02/15
DY	04-013-4010	1 *	1			1					1	1	1	1			1		8	06/02/15
DV	04-013-4018								2		1	1	1	1			1		6	06/02/15
FF	04-013-1010		1								1		1	1			1		5	06/02/15
FH	04-013-9704		1								1	1	1	1			1		6	06/02/15
GL	04-013-2001	1 *	1			1	1				1	1	1	1			1		9	06/02/15
GR	04-013-3010	1		1		1					1	1		1			1	1	8	06/02/15
HI	04-013-4006					1				1	1	1	1	1			1		6	11/01/14
HM	04-013-9508		1								1		1				1		4	06/02/15
ME	04-013-1003	1 *	1			1	1				1	1	1	1			1		9	06/02/15
MM #	Mobile Truck	1 *			1	1	1				1	1	1	1		1	1	1	11	06/02/15
NP	04-013-1004	1 *	1			1	1			1	1	1	1	1		1	1		10	06/02/15
PP	04-013-2005		1								1	1	1	1			1		6	06/02/15
RV	04-013-9706		1														1		2	06/02/15
SP	04-013-4003	1 *	1			1	1				1	1	1	1			1		9	06/02/15
SS	04-013-3003	1 *	1			1					1	1	1	1			1	1	9	06/02/15
TE	04-013-4005	1 *	1			1	1			1	1	1	1	1	1		1		9	04/01/15
WC	04-013-4004	1 *	1			1					1	1	1	1			1		8	06/02/15
WF	04-013-4009					1				1	1	1	1	1			1		6	06/02/15
WP	04-013-0019	1	1	1		1	1	1		1	1	1		1			1	1	12	06/02/15
ZH	04-013-4016					1					1			1					3	06/02/15
Active Instruments		14	18	5	3	17	9	1	2	5	25	18	16	24	2	2	25	8		

temporarily closed

* = seasonal or event monitor

= Mobile Monitoring Truck

Total # of Pollutant Monitors 69
Total # of Active Instruments 194
Number of Active Sites 24
Mobile Truck 1

2014 SUMMARY OF NETWORK RESULTS AND REQUIRED INFORMATION

Determining Data Quality and Acceptability

The EPA has established data quality and measurement quality objectives for CP data. In total, there are seven data quality indicators established by the EPA to determine the quality of ambient air data. Data must meet each indicator's requirement to be acceptable for use by decision makers for NAAQS compliance determinations, researchers, and the public. These indicators are: precision, bias, completeness, comparability, detectability, representativeness, and sensitivity. "Timeliness" of data collection, validation, and upload to AQS is important as well. This sections details the results obtained from our 2014 monitoring year.

With CP data, accuracy is defined as "a measure of the overall agreement of a measurement to a known value and includes a combination of random error (precision) and systematic error (bias) components of both sampling and analytical operations". The AMD's personnel evaluate data using these indicators, with precision, bias, and completeness being the most crucial to evaluate on an ongoing basis. If CP data pass all validation tests, the data meet EPA's quality requirements and can be used to determine compliance with the NAAQS.

Data Completeness

Before any data set can be considered valid, it must first pass a data recovery, or completeness, test. The test requirements begin with checking completeness at hourly and 24-hour concentration values. These values are commonly referred to as "samples". In general, CP pollutant data measurements, or samples, from continuous analyzers are based on a valid hour; while 24-hour filter samples from manual samplers are based on a 24-hour sampling period from midnight to midnight. For NAAQS determinations, the completeness tests are extended to data sets at 3-hour, 8-hour, quarterly, annual, and multiple year levels of data aggregation, which are specific to each CP.

For CPs, data completeness must be greater than 75% for a data set to pass the first validity test. To determine data completeness, the total quantity of actual samples/measurements collected is divided by the total quantity of scheduled samples/measurements for a certain time period.

$$\text{Equation 2: Data Completeness} = \text{Qty. of Samples Scheduled} / \text{Qty. of Samples Collected} (100)$$

The annual data completeness for 2014 is shown below (see Table 8).

Table 8. 2014 Criteria Pollutant Data Completeness for SLAMS

	CO	Pb	O ₃	NO ₂	SO ₂	PM _{2.5}	PM ₁₀	TOTAL
Percent Complete	98.5%	93.0%	98.4%	98.2%	98.0%	96.8%	98.7%	98.1%

Source: EPA AQS database - 2014 AQS Data Completeness Report (AMP 430)

Increasing Data Volumes

Due to increasing data requirements and the availability of FEM analyzers, the amount of data the AMD produces increased considerably over the past few years. Operating and maintaining all the various components of each air monitoring network is an ongoing challenge. To remain up-to-date with EPA's requirements and to meet decision makers' and researchers' data needs, AMD personnel adjusted standard operating processes accordingly to ensure only high-quality are being produced. In addition to the increased amount of CP data to be generated and validated, supporting components of the surveillance system such as the communications system to the sites and the database used for data management needed upgrading, too. So far, AMD has managed to make some significant program changes to keep up with the increasing demand for data. By automating some processes, we have been able to successfully respond to data needs without increases to personnel. The following information summarizes a few notable changes that have been implemented to date.

- A Rapid Response Notification System (RRNS) was implemented to better manage quickly-developing pollution events. The RRNS uses automated alarms to monitor instrument performance and incoming pollutant concentrations. The triggering instrument warning and pollutant concentration limits can be adjusted as needed for each alarm.
- A new, commercial database, AirVision™, was implemented, and it has enhanced our ability to manage the increase in data volume. It advanced data validation, retrieval/storage/security, and dissemination. The database must be maintained and updated regularly to keep up with software changes involving data collection, validation, and reporting to AQS.
- In addition, AMD now uploads preliminary data to the MC website as close as possible to real-time.
- AMD personnel perform multiple data checks throughout the work day to help prevent bad data from being released to the public via the County's and EPA's websites.

Table 9 shows the amount of 1-hour data AMD has been producing per year, plus the near ninefold increase of data produced when AMD started collecting 5-minute data.

Table 9. 2014 Total Amount of Data Produced

Type	1-Hour CP Data	1-Hour CP and Met Data	1-Hour, 5-minute and 24-hour CP and Met Data
Amount	587,162	1,612,082	14,901,002

NOTE: The amount does not include non-CP or special projects' data.

Summary of Data Produced by the Criteria Pollutant Networks

This section covers the 2014 data generated by each CP's network.

Carbon Monoxide (CO)

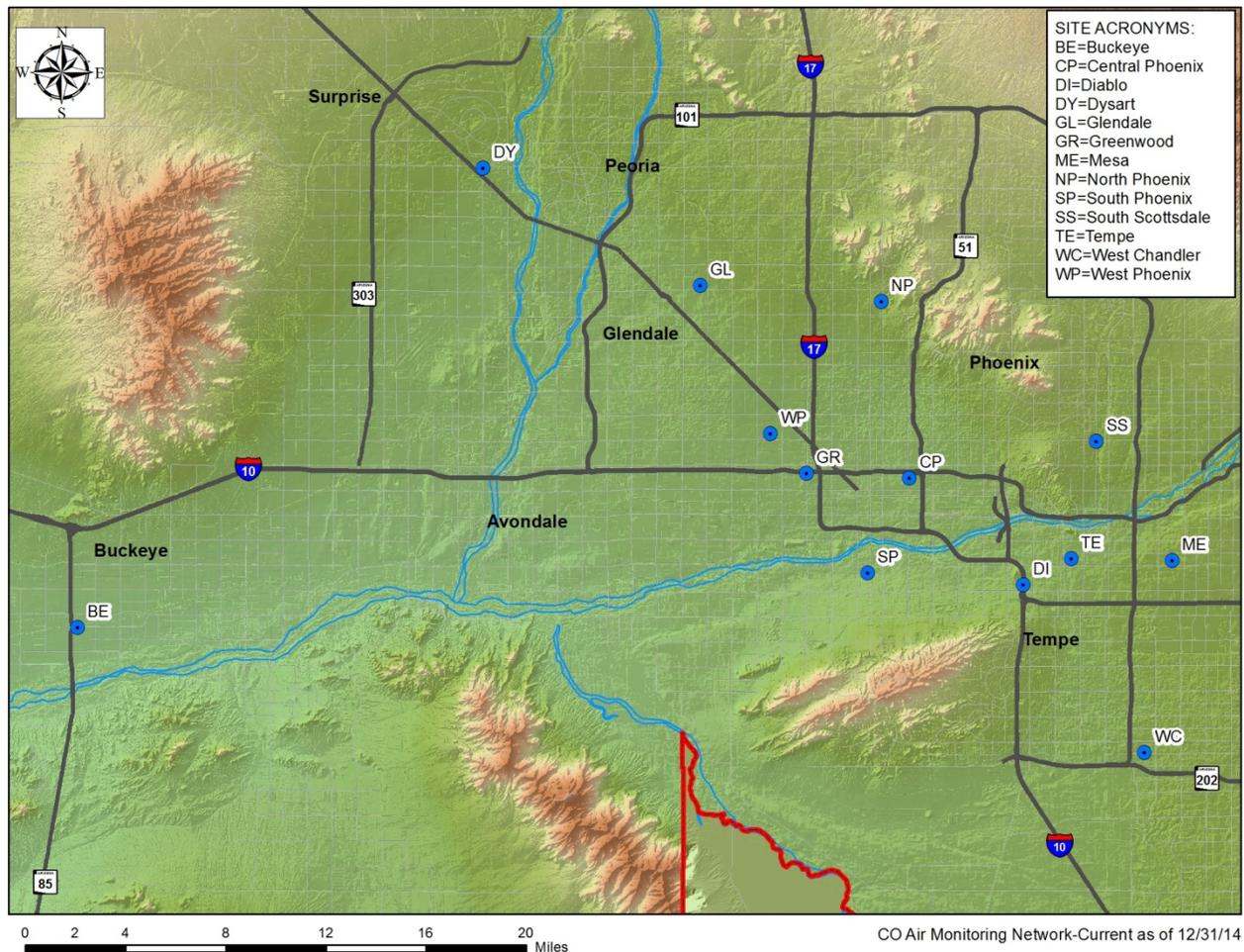


Figure 5. 2014 CO Monitoring Sites

There are two primary standard limits for CO: an 8-hour average of <9 ppm and a 1-hour average of <35 ppm. A violation of either standard is based on two exceedances in a calendar year. Since CO concentrations have been significantly lower than the 1-hour limit for so many years, we have not included it on Table 10. It is worth noting that the area has not exceeded the CO NAAQS since 1996.

The Phoenix metropolitan area and portions of Pinal County were once designated as a moderate nonattainment CO for the 1971 primary NAAQS. A nonattainment SIP was developed by ADEQ that covered how to reduce and maintain CO concentrations. The area failed to reach attainment by the end of 1995, which caused EPA to reclassify the area to serious nonattainment in 1996, with a new attainment date of December 31, 2000. In response, the Governor's Office, Legislature, Maricopa County, and other entities worked cooperatively together to find ways to reduce CO that included implementing innovative programs such as: a nationally recognized vehicle emissions inspection

program, a cleaner burning gasoline program, pollution reduction measures for commercial and industrial sources, and woodburning restrictions. As a result, CO concentrations declined and data showed that the area had reached attainment with the 8-hour primary NAAQS.

In April 2005, the EPA redesignated the Phoenix metropolitan area to attainment for CO and approved the attainment demonstration and maintenance plan, which shows how the area will maintain compliance with the CO NAAQS through 2015. However, Maricopa County must continue to show that the air quality is maintaining compliance with the NAAQS for a period of 20 years from the attainment determination. The area is now covered by a 10-year maintenance SIP that is renewed in its 8th year for the next 10-year maintenance SIP. At this time, the process for removing a geographical area from under the designation of maintenance/attainment is unclear. Since we are now in maintenance/attainment, the majority of CO monitors can operate seasonally rather than year-round.

In 2014, the quantity of active CO monitors increased from thirteen to fourteen with the addition of the Diablo near-road station on February 21st. All CO monitors are classified as SLAMS, and data from all monitors are reported to the AQS (see Figure 5). For calendar year 2014, no exceedances of either CO limit were recorded at any MCAQD monitoring sites Table 10.

Table 10. 2014 8-hour Average CO Data Summary

Site	CO 8-hour Average Max. (ppm)	CO 8-hour Average 2 nd Highest (ppm)	Number of Exceedances of 8-Hour NAAQS
Buckeye	0.6	0.5	0
Central Phoenix	2.5	2.4	0
Diablo	1.4	1.3	0
Dysart	0.6	0.6	0
Glendale	1.4	1.3	0
Greenwood	2.6	2.1	0
Mesa	1.4	1.2	0
North Phoenix	1.4	1.1	0
South Phoenix	2.9	1.9	0
South Scottsdale	1.4	1.3	0
Tempe	1.4	1.4	0
West Chandler	1.7	1.6	0
West Phoenix	4.2	2.8	0

Additional information required by EPA is shown in Table 11.

Table 11. CO Data Required by EPA

CBSA	Population & Census Year (2012)	Required Near-Road Monitors	Active Near-Road Monitors	Additional Near-Road Monitors Needed
38060	4,329,534	2	1	1

Lead (Pb)

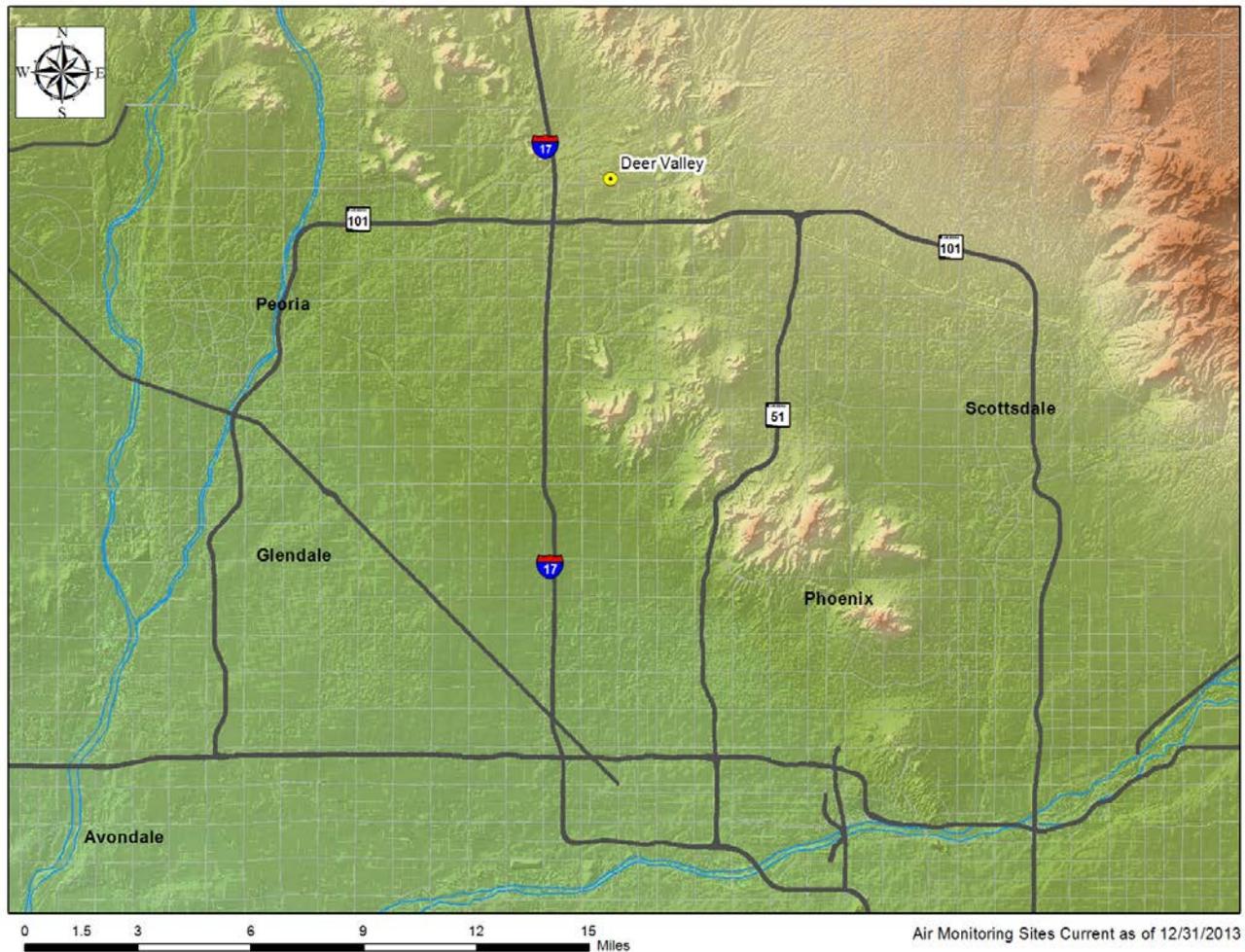


Figure 6. 2014 Pb Monitoring Sites

Figure 6 shows the Deer Valley site, which is the only site collecting Pb data. Two Pb monitors are required at the Deer Valley Airport for QA purposes and both monitors are classified as SLAMS. The Pb NAAQS has identical primary and secondary standards, a rolling 3-month average. The rolling 3-month average is violated by an exceedance of $0.15 \mu\text{g}/\text{m}^3$.

In July 2010, this Pb monitoring site was opened near the Deer Valley Airport in north Phoenix. This airport is one of the busiest general aviation airports in the region, and it serves a significant number of propeller-driven aircraft. Propeller-driven aircraft still use Pb-containing general aviation fuel unlike jet engine-driven aircraft. According to the EPA's National Emission Inventory, Deer Valley Airport is the largest point-source of Pb within Maricopa County that triggers the EPA 1.0 ton per year (tpy) threshold for Pb emissions (see Table 12).

Table 12. 2014 Pb Data Summary

Site	24-hour Max. ($\mu\text{g}/\text{m}^3$); Date: Hour	24-hour 2 nd Highest ($\mu\text{g}/\text{m}^3$); Date: Hour	Max. 3-month Rolling Quarterly Average ($\mu\text{g}/\text{m}^3$)	Number of Samples
Deer Valley	0.087	0.082	0.05	57

Additional Pb information required by EPA is shown in Table 13.

Table 13. Pb Data Required by EPA

Source Name	Location	2011 Pb Emission (tpy)	Emissions Inventory Source & Data Year	Max 3-month Design Value ($\mu\text{g}/\text{m}^3$)	Design Value Date	Required Monitors	Active Monitors	Additional Monitors Needed
Deer Valley Airport	Phoenix, AZ	1.16	General Aviation Airport 2011	0.05	January 2014	1	1	0

NOTE: The Pb emission value shown above is from the EPA's 2011 National Emissions Inventory report. The MCAQD also operates a collocated Pb monitor for QA purposes.

Nitrogen Dioxide (NO_x)

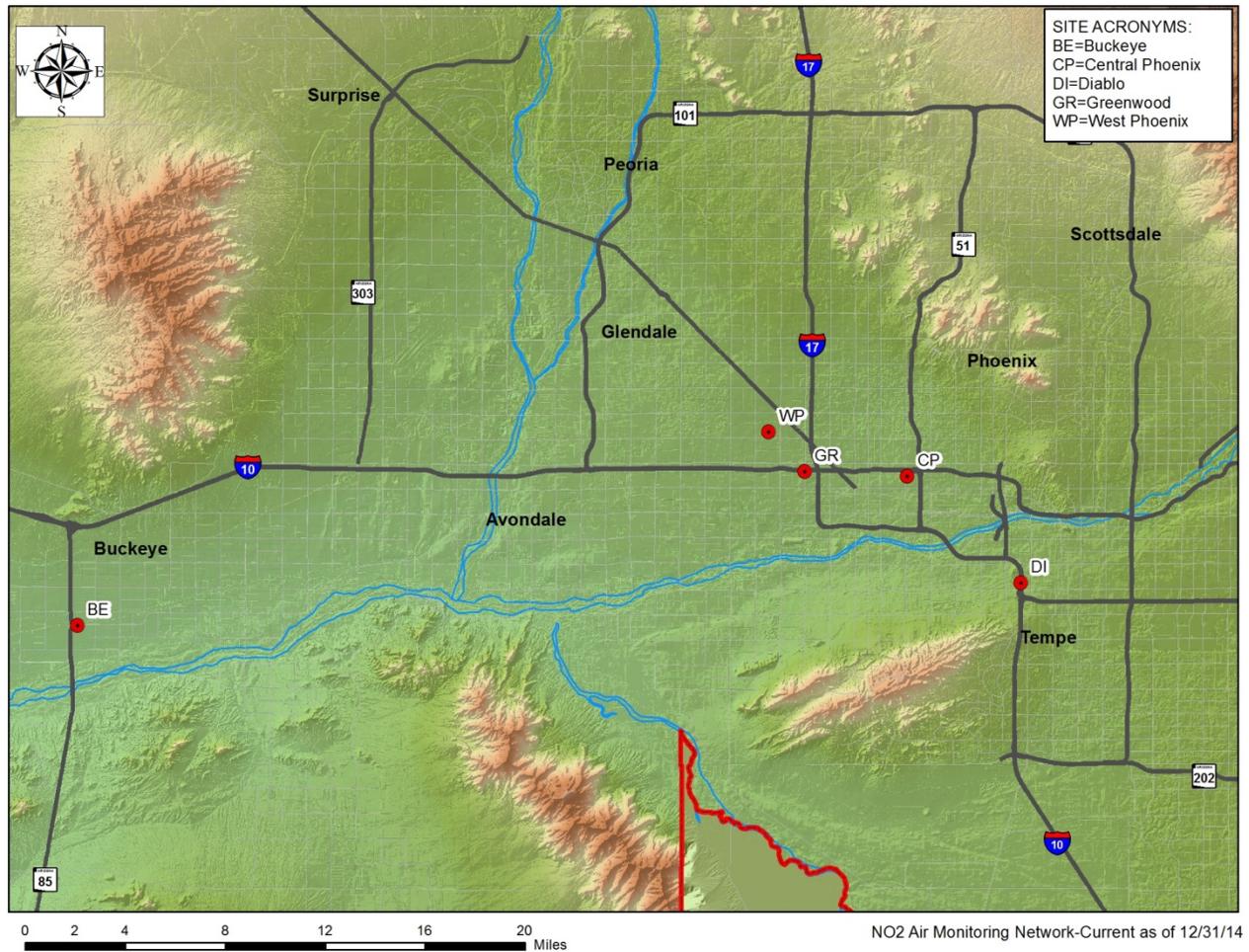


Figure 7. 2014 NO₂ Monitoring Sites

All parts of Maricopa County are in attainment for NO₂. Compliance with the NO₂ 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 NO₂ began in 2010; this regulation states that the 3-year average of the 98th percentile cannot exceed 100 ppb. For calendar year 2014, no exceedances of the NO₂ annual were recorded at Maricopa County monitoring sites. However, we did exceed the one-hour NAAQS once at the Buckeye site on 05/05/15.

In 2014, the quantity of active NO₂ monitors increased from four to five once the Diablo near-road station became active in February. Data from all five monitors were reported in AQS (see Figure 7). All NO₂ monitors are designated as SLAMS (see Table 14).

Table 14. 2014 NO₂ 1-hour Data Summary

Site Name	NO ₂ Maximum (ppb)	NO ₂ 98 th Percentile (ppb)	NO ₂ 3-Year Average of the 98 th Percentiles (ppb)	NO ₂ Annual Average (ppb)
Buckeye	102.0*	37.0	36	8.65
Central Phoenix	70.0	60.0	61	19.44
Diablo	62.0	59.0	59	20.85
Greenwood	67.0	64.0	64	24.55
West Phoenix	80.0	57.0	57	17.97

*Indicates an exceedance of the standard.

Source: The EPA's 2014 AQS AMP450 Report, aka "Quicklook Criteria Parameters Report"

Additional information required by EPA is shown in Table 15.

Table 15. NO₂ Data Required by EPA

CBSA	Population & Census Year (2012)	Max AADT Counts	Required Near-Road Monitors	Active Near-Road Monitors	Additional Near-Road Monitors Needed	Required Area-Wide Monitors	Active Area-Wide Monitors	Additional Area-Wide Monitors Needed
38060	4,329,534	320,137	2	1	1	1	4	0

Ozone (O₃)

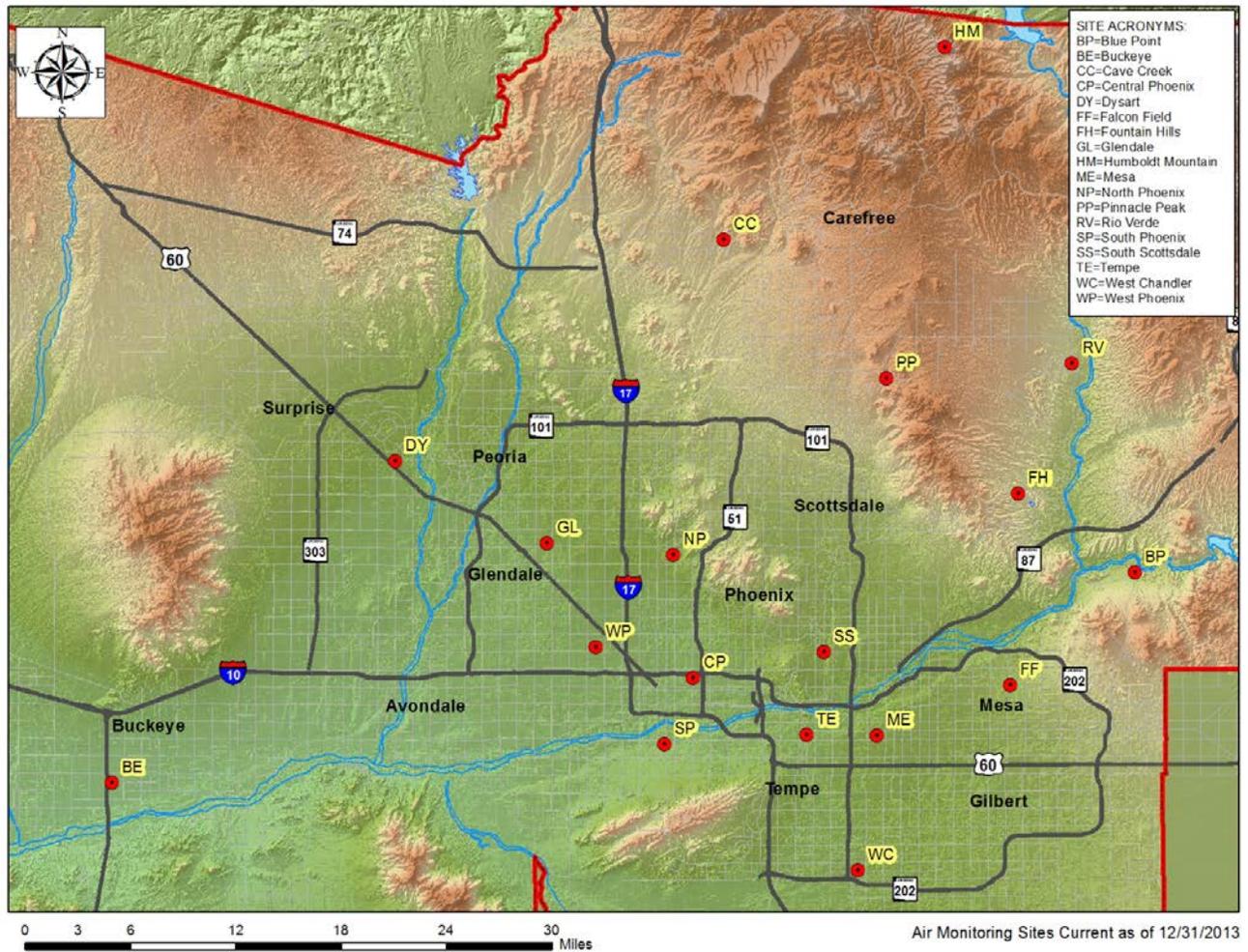


Figure 8. 2014 O₃ Monitoring Sites

As stated in the O₃ summary, compliance with the standard is determined by averaging the 4th highest 8-hour average over a 3-year period. This 3-year average must be less than or equal to 0.075 ppm. During 2014, eighteen O₃ monitors were reported as operational in AQS (see Figure 8). All of the O₃ monitors are classified as SLAMS (see

Table 6).

In 2014, there were 11 exceedance days of the 8-hour primary standard for O₃. Table 16 presents the 2014 data summary for 8-hour O₃ at departmental monitoring sites. In addition, there were nine (9) violations of the 8-hour primary standard. The 8-hour standard is violated when a 3-year average using the 4th highest concentration measured in each year exceeds 0.075 ppm (see Table 16).

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Table 16. 2014 8-hour Average O₃ Data Summary

Site	8-hr Max. (ppm)	2 nd Highest (ppm)	3 rd Highest (ppm)	4 th Highest (ppm)	Qty. of Days > 0.075 ppm
Blue Point	0.088*	0.076*	0.075	0.074	2
Buckeye	0.068	0.067	0.061	0.060	0
Cave Creek	0.081*	0.076*	0.074	0.074	2
Central Phoenix	0.077*	0.071	0.071	0.071	1
Dysart	0.075	0.074	0.072	0.070	0
Falcon Field	0.088*	0.078*	0.078*	0.076*	4
Fountain Hills	0.075	0.070	0.069	0.068	0
Glendale	0.079*	0.078*	0.075	0.071	2
Humboldt Mt.	0.082*	0.080*	0.077*	0.074	3
Mesa	0.086*	0.079*	0.078*	0.078*	6
North Phoenix	0.082*	0.081*	0.078*	0.078*	6
Pinnacle Peak	0.088*	0.081*	0.081*	0.080*	6
Rio Verde	0.085*	0.077*	0.074	0.073	2
South Phoenix	0.080*	0.076*	0.075	0.073	2
South Scottsdale	0.078*	0.073	0.072	0.072	1
Tempe	0.077*	0.073	0.071	0.071	1
West Chandler	0.074	0.074	0.071	0.070	0
West Phoenix	0.079*	0.078*	0.078*	0.076*	4

*Indicates an exceedance of the standard.

Source: The EPA's 2014 AQS AMP450 Report, aka "Quicklook Criteria Parameters Report"

Additional information required by EPA is shown in Table 17.

Table 17. O₃ Data Required by EPA

CBSA	County	Population & Census Year (2012)	8-Hr Design Value (ppm)	Design Value Site	Required Monitors	Active Monitors	Additional Monitors Needed
38060	Maricopa	4,329,534	0.080	04-013-1004	2	18	0

Source: The EPA's 2014 AQS AMP 480 Report, aka "Design Value Report"

Particulate Matter ≤ 10 Micrometers (PM_{10})

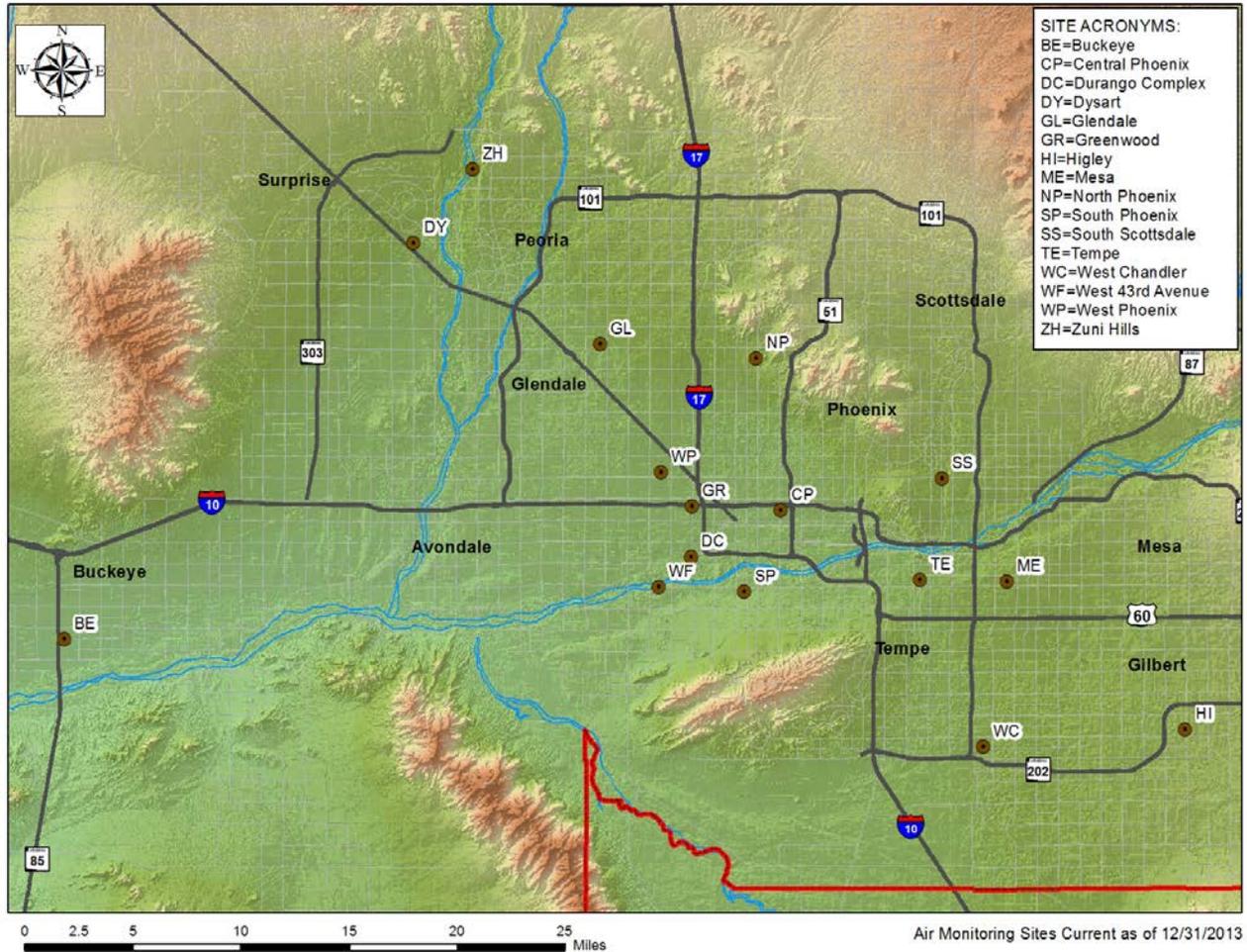


Figure 9. 2014 PM_{10} Monitoring Sites

During 2014, sixteen PM_{10} monitors were reported as operational in AQS (see Figure 9). All PM_{10} monitors are classified as SLAMS, except for Zuni Hills, which is classified as a Special Purpose Monitor (SPM). All PM_{10} monitoring stations now operate continuous PM_{10} analyzers that collect hourly-averaged data. It is worth noting that EPA does not require PM_{10} analyzers to be collocated at the PQAQ level or the national level as they did with PM_{10} samplers.

Although the 24-hour primary NAAQS standard for PM_{10} is 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), due to rounding the 24-hour average concentration must exceed 155 $\mu\text{g}/\text{m}^3$ to be considered an “exceedance”. This standard is violated when the expected number of exceedances at a monitor is more than one per year on average over three years. The expected number of exceedances is estimated using a formula provided in *40 CFR Part 50 Appendix K*. The formula takes into account the number of days sampling occurs and the number of valid samples that can be collected. A 3-year average of these estimated days is then used to determine compliance. Effective December 18, 2006, EPA revoked the PM_{10} annual primary standard; however, the annual average is still displayed below for informational purposes (see Table 18).

In recent years, some PM₁₀ exceedances occurring in the Maricopa County CBSA have been successfully attributed to an EE. As per the EPA's *EER*, an EE is considered to be an uncontrollable event that was caused by natural sources of pollution or an event that is not expected to recur at a given location. Again, ADEQ makes the determination of which events to classify as exceptional; then, they petition the EPA for acceptance of the classification. If the EPA accepts the petition, the PM₁₀ concentration(s) measured during the event will not be used in determination of compliance with the NAAQS. The EE counts below are current as of this review's publishing. To date, EE petitions have been submitted for PM₁₀ only.

Table 18. 2014 PM₁₀ Data Summary

Site Name	24-hr Avg. Max (µg/m ³)	24-hr Avg. 2 nd Highest (µg/m ³)	24-hour NAAQS Exceedances	Expected Exceedances	Annual Weighted Average (µg/m ³)	Quantity of EEs
Buckeye	271*	175*	2	2.0	43.4	1
Central Phoenix	182*	146	1	1.0	32.0	1
Durango Complex	172*	162*	2	2.0	42.1	2
Dysart	163*	138	1	1	26.7	1
Glendale	205*	102	1	1.011	27.4	1
Greenwood	208*	157*	2	2.011	44.0	2
Higley	179*	155*	2	2.0	34.8#	2
Mesa	155*	146	1	1.034	30.4	1
North Phoenix	199*	107	1	1.0	27.9	1
South Phoenix	170*	169*	3	3.0	40.6	3
South Scottsdale	193*	169*	2	2.045	31.0	2
Tempe	175*	140	1	1.011	28.7	1
West Chandler	163*	146	1	1.0	29.3	1
West 43rd Avenue	171*	141	1	1.0	45.9	1
West Phoenix	210*	165*	2	2.022	38.8	2
Zuni Hills	166*	86	1	1.247	24.0#	1

* Indicates an exceedance of the standard.

Indicates that the mean does not satisfy summary criteria

Source: The EPA's 2014 AQS AMP450 Report, aka "Quicklook Criteria Parameters Report"

Additional information required by EPA is shown in Table 19.

Table 19. PM₁₀ Data Required by EPA

CBSA	County	Population & Census Year (2012)	Max Concentration*	Max Concentration Site	Required Monitors	Active Monitors	Additional Monitors Needed
38060	Maricopa	4,329,534	175 µg/m ³	04-013-4011	6-10	16	0

* - excludes measurements submitted as EEs

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Particulate Matter ≤ 2.5 Micrometers ($PM_{2.5}$)

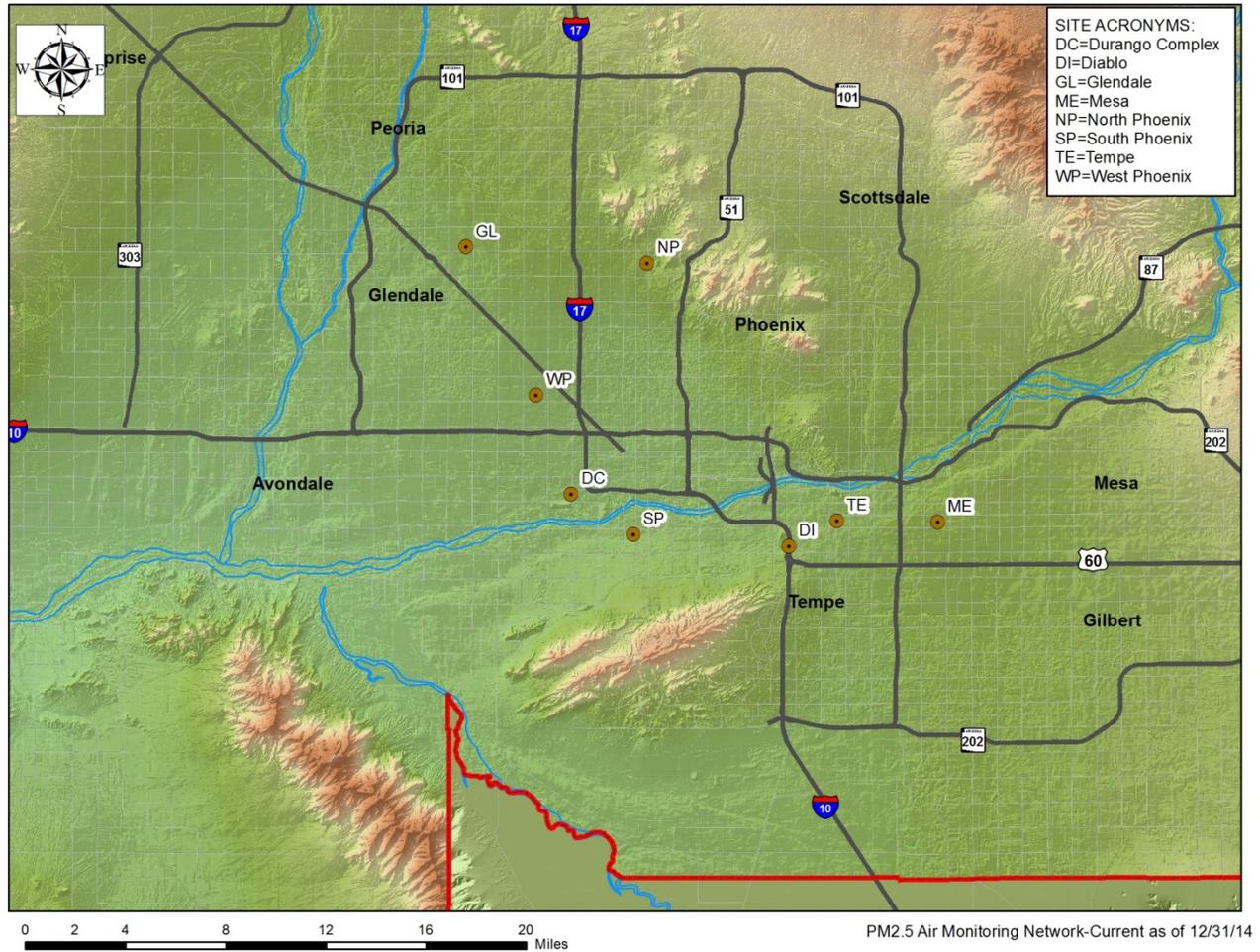


Figure 10. 2014 $PM_{2.5}$ Monitoring Sites

Figure 10 shows the sites monitoring for $PM_{2.5}$. Currently, the department operates eight continuous $PM_{2.5}$ analyzers at our $PM_{2.5}$ stations located at the following sites: Diablo, Durango Complex, Glendale, Mesa, North Phoenix, South Phoenix, Tempe, and West Phoenix. These continuous analyzers are classified as Federal Equivalency Methods (FEM), so their data are applicable for comparison to the NAAQS. All $PM_{2.5}$ monitors are identified as SLAMS.

In 2014, the AMD reduced the number of FRM $PM_{2.5}$ samplers in operation throughout the network from one to two. The primary sampler at the West Phoenix station was changed over to an FEM. The West Phoenix site is now our “collocated” site for $PM_{2.5}$, which means that we operate one FEM continuous analyzer designated as “primary monitor” and one FRM filter-based $PM_{2.5}$ sampler designated as the “secondary monitor”. The FRM sampler is required to meet the EPA’s QA collocation requirements for generating $PM_{2.5}$ data used for determining NAAQS compliance. Data from the secondary monitor are intended for QA usage, but can be substituted in place of the primary monitor’s data when necessary and as per *40 CFR Part 50 Appendix N*. Otherwise, the secondary monitor’s data are not used for NAAQS comparison. This secondary monitor collects a twenty-four hour (midnight-to-midnight) filter sample on the designated 1:12 day as required for collocated QA

samples. The OAQPS produces the [annual sampling calendar](#) each year and posts it on the AMTIC website.

Note that the PM_{2.5} network is much smaller than the PM₁₀ network. The reason for this is that historically more concern and resources have been given to PM₁₀, since portions of Maricopa County have been designated a nonattainment area for PM₁₀. Maricopa County is currently in attainment for PM_{2.5}. According to federal regulations, Maricopa County does operate more than the required minimum number of PM_{2.5} monitors for the core-based statistical area (CBSA) (see Table 24 and Appendix II). The AMD 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.

Compliance with the 24-hour standard is determined by taking the 3-year average of the 98th percentile concentration at each monitoring site. Compliance with the annual standard is determined by taking the 3-year average of the annual means. There were no violations of the 24-hour standard or the annual standard. The data are based on a 24-hour average and summarized in Table 20 and Table 24. **Error! Reference source not found..**

Table 20. 2014 PM_{2.5} FRM Filter-based Sampler Data Summary

Site Name	24-hr Avg. Max (µg/m ³)	24-hr Avg. 2 nd High (µg/m ³)	98 th Percentile Value	Annual Avg. (µg/m ³)
West Phoenix	30.3	29.0	28.3	9.95

Table 21. 2014 PM_{2.5} FEM Continuous Analyzer Data Summary

Site Name	24-hr Avg. Max (µg/m ³)	24-hr Avg. 2 nd High (µg/m ³)	98 th Percentile Value	Annual Avg. (µg/m ³)
Diablo	29.2	26.2	21.4	9.71#
Durango Complex	56.4*	30.7	24.1	10.12
Glendale	50.0*	30.1	18.6	7.73
Mesa	42.9*	26.8	19.4	8.28
North Phoenix	33.9	26.5	20.3	8.02
South Phoenix	101.7*	34.7	26.5	10.27
Tempe	44.0*	27.5	17.4	8.63
West Phoenix	170.7*	48.7*	28.9	11.13

*Indicates an exceedance of the standard.

Indicates that the mean does not satisfy summary criteria

Table 22. 2014 PM_{2.5} 3-Year Averages of 98th Percentile for FRM Samplers

Site Name	2012 98 th Percentile (µg/m ³)	2013 98 th Percentile (µg/m ³)	2014 98 th Percentile (µg/m ³)	98 th Percentile 3-Year Average
Mesa	23.3#	Shutdown	Shutdown	#
South Phoenix	24.4#	Shutdown	Shutdown	#
West Phoenix	29.0	28.0	28.3	28.43

#Does not meet data completeness standards

Table 23. 2014 PM_{2.5} 3-Year Averages of 98th Percentile for FEM Analyzers

Site Name	2012 98 th Percentile (µg/m ³)	2013 98 th Percentile (µg/m ³)	2014 98 th Percentile (µg/m ³)	98 th Percentile 3-Year Average
Diablo	Not operating	Not operating	21.4#	#
Durango Complex	24.9	27.2	24.1	25.4
Glendale	18.6	16.6	18.6	17.9
Mesa	10.4	12.8	19.4	14.2
North Phoenix	21.2	17.2	20.3	19.6
South Phoenix	20.9	25.8	26.5	24.4
Tempe	19.5	17.9	17.4	18.2
West Phoenix	23.6	29.0#	28.9	27.2#

#Does not meet data completeness standards

Additional information required by EPA is shown in Table 24.

Table 24. 2014 PM_{2.5} SLAMS Data Required by EPA

CBSA	County	Population & Census Year (2012)	Annual Design Value (µg/m ³)	Annual Design Value Site	Daily Design Value (µg/m ³)	Daily Design Value Site	Required Monitors	Active Monitors	Additional Monitors Needed
38060	Maricopa	4,329,534	11.0	04-013-0019	28	04-013-0019	3	7	0

* - excludes measurements submitted as EE

Sulfur Dioxide (SO₂)

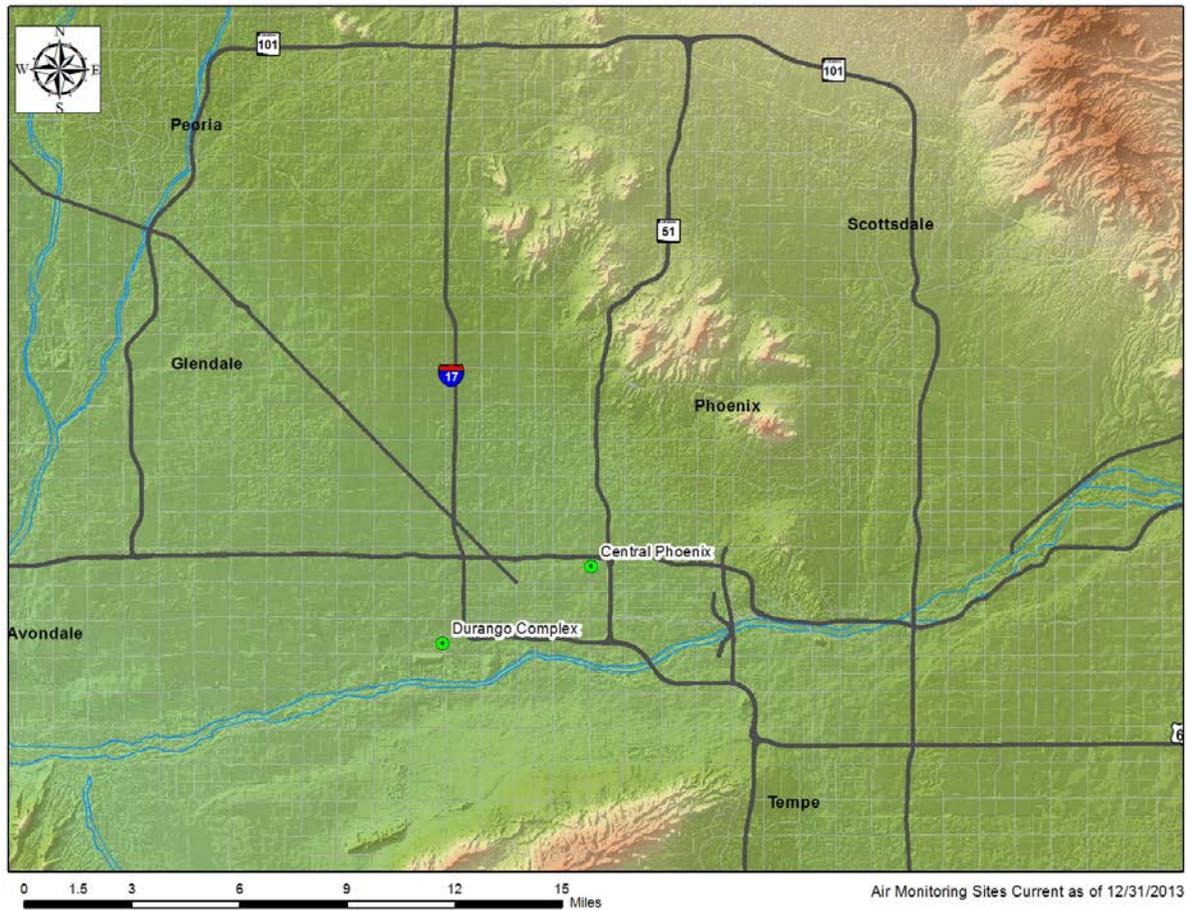


Figure 11. 2014 SO₂ Monitoring Sites

Maricopa County is in attainment for SO₂. During 2014, two SO₂ SLAMS monitors were operational and reported into AQS (see Figure 11). Sulfur dioxide has a 1-hour primary standard and a 3-hour 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 secondary standard occurs when a 3-hour average of 500 ppb is exceeded more than once per year. For calendar year 2014, no exceedances of the SO₂ 1-hour or 3-hour standard were recorded at Maricopa County monitoring sites (see Table 25). The EPA now requires that the highest 5-minute average per hour per day be reported to AQS; however, there is not a 5-minute SO₂ NAAQS limit.

Table 25. 2014 SO₂ Data Summary

Site	1-hour Max. (ppb)	1-hour 2 nd High (ppb)	1-hour 99 th Percentile (ppb)
Central Phoenix	11.0	8.0	7.0
Durango Complex	10.0	8.0	8.0

NOTE: EPA no longer requires the reporting of 3-hour values for the SO₂ secondary NAAQS.

Additional information required by EPA is shown in Table 26.

Table 26. SO₂ Data Required by EPA

CBSA	County	Population & Census Year (2012)	Total SO ₂ Emitted in 2011 (tpy)	Population Weighted Emission Index	Required Monitors	Active Monitors	Additional Monitors Needed
38060	Maricopa	4,329,534	1468	N/A	0	2	0

Source: The [EPA's Clearinghouse for Inventories & Emissions Factors database](#)

2014 NAAQS Exceedance and Violation Summary

The following is a summary of the number, types, and dates of exceedances and violations of the NAAQS for 2014 (see Table 27).

Table 27. 2014 NAAQS Exceedances and Violation Summary

CO	No exceedances or violations of the 1-hour or 8-hour NAAQS standard were logged.
NO ₂	There was one day when one monitor exceeded the 1-hour standard for one hour; there was no violation of the 1-hour NAAQS standard.
O ₃	There were twelve unique days when at least one monitor exceeded the standard. There were nine violations of the 8-hour standard.
Pb	No exceedances or violations of NAAQS were logged.
PM ₁₀	There were seven unique days when at least one monitor exceeded the 24-hour standard. There were no sites that violated the standard once EEs were removed.
PM _{2.5}	There were three unique days when at least one monitor exceeded the 24-hour standard. There were no violations of the 24-hour or annual standards.
SO ₂	No exceedances or violations of NAAQS were logged.

2014 O₃ Exceedance and Violation Details

The following information details the dates and values for exceedances of the 8-hour O₃ standard (see **Error! Reference source not found.**). The standard is 0.075 ppm for a rolling 8-hour average. Violations of the O₃ standard are calculated with a 3-year average of the fourth-high annual 8-hour value (see Table 28); if this 3-year average is greater than 0.075 ppm, the site violates the standard.

Table 28. 2014 O₃ 8-hour Average Exceedance Details

Ozone Exceedance Days 2014 9/26/2014																		
Ozone 8-hr avg. (ppm) Ozone NAAQS > 0.075 ppm																		
	Buckeye	Blue Point	Cave Creek	Central Phoenix	Dysart	Falcon Field	Fountain Hills	Glendale	Humboldt Mt.	Mesa	North Phoenix	Pinnacle Peak	Rio Verde	South Phoenix	South Scotts.	Tempe	West Chandler	West Phoenix
5/28/14			0.076															
6/5/14						0.078			0.080	0.078		0.081	0.077	0.076				
6/6/14		0.088	0.081	0.077		0.088		0.078	0.082	0.086	0.081	0.088	0.085	0.080	0.078	0.077		0.078
6/7/14						0.076			0.077	0.077		0.081						
6/9/14		0.076				0.078				0.078		0.080						
7/7/14											0.078							
7/14/14											0.077							
7/28/14											0.078	0.078						0.076
9/11/14								0.079		0.076	0.082							0.079
9/12/14										0.079								0.078
9/25/14											0.076	0.080						
Exceedance Days	0	2	2	1	0	4	0	2	3	6	6	6	2	2	1	1	0	4
Maximum Value		0.088	0.081	0.077		0.088		0.079	0.082	0.086	0.082	0.088	0.085	0.080	0.078	0.077		0.079
4th High Value>.075						0.076				0.078	0.078	0.08						0.076
All sites are located in or near the Ozone Non-Attainment Area Please see ADEQ for information on additional statewide ozone sites																		
Total Number of Days where at least one monitor exceeded the NAAQS Ozone Standard																		11

Table 29. 2014 O₃ NAAQS Violations

Site	Value (ppm)
North Phoenix	0.080
Pinnacle Peak	0.078
West Phoenix	0.078

NOTE: The data shown above are the 2012 to 2014 3-year averages of the 4th highest 8-hour O₃ concentrations.

2014 Exceedances of the 24-Hour PM₁₀ Standard

The following table details the site and date of exceedances of the 24-hour PM₁₀ standard (see Table 30). Note that this table includes all exceedances, even those that are expected to be or are in the process of being classified as EEs. Exceptional events are not used in calculating compliance with the NAAQS.

Table 30. 2014 PM₁₀ 24-hour Average Exceedance Details

Site	Date	24-hr avg. PM ₁₀ Concentration (µg/m ³)	Exceptional Event
Buckeye	07/03/14	271	*
	10/30/14	175	
Central Phoenix	05/11/14	182	*
Durango Complex	05/11/14	172	*
	07/25/14	162	*
Dysart	05/11/14	163	*
Glendale	05/11/14	205	*
Greenwood	05/11/14	208	*
	07/03/14	157	*
Higley	07/08/14	179	*
	09/04/14	155	*
Mesa	07/25/14	155	*
North Phoenix	05/11/14	199	*
South Phoenix	05/11/14	170	*
	07/25/14	169	*
	09/06/14	159	*
South Scottsdale	05/11/14	169	*
	07/25/14	193	*
Tempe	07/25/14	175	*
West 43rd Avenue	05/11/14	171	*
West Chandler	07/25/14	163	*
West Phoenix	05/11/14	210	*
	07/03/14	165	*
Zuni Hills	05/11/14	166	*
Quantity of Days in 2014 where at least one monitor exceeded the 24-hr PM₁₀ Standard		7	

*MCAQD has flagged these exceedances as EEs.

2014 Violations of the 24-Hour PM₁₀ Standard

As per 40 CFR Part 50.6 (a), the 24-hour NAAQS for PM₁₀, i.e., the 24-hour average block-average (midnight-to-midnight) concentration at a site is $\geq 155 \mu\text{g}/\text{m}^3$, is violated when the calculated “rate of expected exceedances” occurrence is >1 when averaged over three consecutive years (see Table 31).

Table 31. 2014 Violations of the 24-hour PM₁₀ Standard with EEs Shown

Site	2012		2013		2014		Rate of Expected Exceedances*
	24-hr Max. ($\mu\text{g}/\text{m}^3$)	Expected Exceedances*	24-hr Max. ($\mu\text{g}/\text{m}^3$)	Expected Exceedances*	24-hr Max. ($\mu\text{g}/\text{m}^3$)	Expected Exceedances*	
Buckeye	205‡	1.00	298‡	2.21	271‡	2.0	1.736
Central Phoenix	340‡	0	328‡	2	182‡	1.0	1.0
Durango Complex	221‡	0	303‡	3.022	172‡	2.0	1.674
Dysart	167‡	0	147	0	163‡	1.0	0.33
Glendale	337‡	0	210‡	2	205‡	1.011	1.003
Greenwood	323‡	0	273‡	2	208‡	2.011	1.337
Higley	224‡	1.00	211‡	1	179‡	2.0	1.33
Mesa	64#	0	151	0	155‡	1.034	0.344
North Phoenix	178‡	0	153	0	199‡	1.0	0.33
South Phoenix	342‡	0	294‡	2.045	170‡	3.0	1.68
South Scottsdale	102	0	195‡	1.05	193‡	2.045	1.031
Tempe	169‡	0	227‡	1	175‡	1.011	0.67
West Chandler	402	2.00	234‡	3.04	163‡	1.0	2.01
West 43rd Avenue	254‡	2.00	301‡	4.19	171‡	1.0	2.396
West Phoenix	189‡	1.0	255‡	1.7	210‡	2.022	1.574
Zuni Hills	285‡	0	165‡	1.011	166‡	1.247	0.752

Bold font = Exceeded number of exceedances that will be zeroed if EPA concurs on all 2014 data flagged as EE

* Calculated with all EE data included regardless of EPA’s decision of concurrence

Indicates <75% data available, i.e., does not meet data completeness requirements

‡ Indicates value was flagged as an EE

Exceptional Events for PM₁₀

The ADEQ has sent EE packages to EPA R9 for the seven exceedance days in 2014. If the EPA concurs with all of these packages, the number of sites that violated the PM₁₀ standard will drop from four to one at Buckeye (see Table 32).

Table 32. 2014 Violations of the 24-hour PM₁₀ Standard Excluding EEs with EPA Concurrence

Site	2012		2013		2014		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	205‡	1.00	298‡	0	175	1.00	0.666
Central Phoenix	340‡	0	328‡	0	135	0	0
Durango Complex	221‡	0	303‡	0	107	0	0
Dysart	167‡	0	147	0	90	0	0
Glendale	337‡	0	210‡	0	86	0	0
Greenwood	323‡	0	273‡	0	125	0	0
Higley	224‡	1.00	211‡	0	137	0	0.333
Mesa	64#	0	151	0	101	0	0
North Phoenix	178‡	0	153	0	107	0	0
South Phoenix	342‡	0	294‡	0	109	0	0
South Scottsdale	102	0	195‡	0	98	0	0
Tempe	169‡	0	227‡	0	88	0	0
West Chandler	402	2.00	234‡	0	146	0	0.666
West 43rd Avenue	254‡	2.00	301‡	0	121	0	0.666
West Phoenix	189‡	1.00	255‡	0	148	0	0.333
Zuni Hills	285‡	0	165‡	0	86	0	0

* Calculated minus the EE data with EPA concurrence

Indicates <75% data available, i.e., does not meet data completeness requirements

‡ Indicates value was flagged as an EE

2014 Exceedances of the 24-Hour PM_{2.5} Standard

The 24-hour primary and secondary NAAQS for PM_{2.5} is 35 µg/m³. If the 24-hour, midnight-to-midnight block-average concentration at a site surpasses this value, then it is counted as an exceedance. The 24-hour standard is violated when the 3-year average of the 98th percentile exceeds 35 µg/m³. Table 33 shows there were three exceedances of the PM_{2.5} NAAQS in 2014; but, there were no violations.

Table 33. 2014 PM_{2.5} Exceedances

Site	Date	24-hr Avg. PM _{2.5} Concentration (µg/m ³)
South Phoenix	01/01/14	102
West Phoenix	01/01/14	171
	07/04/14	49
	12/07/14	38
Durango Complex	01/01/14	56
Glendale	01/01/14	50
Mesa	01/01/14	43
Tempe	01/01/14	44
JLG Supersite (ADEQ)	01/01/14	63
Number of Days where at least one monitor exceeded the 24-hour PM _{2.5} Standard		3

Changes to the Criteria Pollutant Air Monitoring Networks

The MCAQD's AMD strives to provide the most reliable and relevant air monitoring data to the public. Air quality issues are diverse and controversial subjects for the citizens of Maricopa County. High-quality monitoring data is a cornerstone of developing and implementing effective SIPs, EE packages, and permits for new and existing sources. The following describes projects and changes that have occurred during 2014.

Station and Site Reclassifications, Relocations, and/or Shutdowns

The Zuni Hills station (04-013-4016) was temporarily shutdown because of construction in the area from June 2014 to August 2014. Because the Zuni Hills' PM₁₀ monitor has been operating for more than 24 months, its classification has been converted from an SPM to a SLAMS monitor as per EPA protocol. The Fountain Hills (04-013-9704) station was temporarily shutdown from August 27, 2013 through May 14, 2014 due to remodeling of the firehouse complex, which houses the station. In late 2014, the property owner of the Higley site (04-013-4006) notified us that they could no longer provide housing for that station. We were asked to vacate the property as soon as possible; therefore, the site was decommissioned in early November. Our plan is to establish a new site near the previous site. We are targeting relocation and startup by the end of 2015.

New Monitoring Sites

Near-Road NO₂ Monitoring Stations

The EPA [Near-road NO₂ Monitoring Technical Assistance Document](#) provides the procedures for locating the near-road NO₂ 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 affects 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, § 4.3.2.a*) to use the latest available census figures, i.e., census counts and/or estimates, and available traffic data in assessing what monitoring may be required.

1. Site #1 "Diablo"

The Diablo site, the first of two near-road monitoring stations, was activated in February 2014 after being approved by EPA in 2013. The site's location near Interstate-10 (I-10) and the Broadway Curve was chosen because it has:

- a #1 rating in fleet-equivalency rank (a comparative rating including both light and heavy-duty vehicles), #1 in average weekday traffic rank (AWT), and #3 in heavy-duty vehicle traffic;
- extreme traffic congestion;
- desirable supporting features such as highway orientation and surrounding grade;
- adjacent to commercial property with considerable residential parcels nearby;
- adequate safety, security, and power availability; and
- adequate accessibility because the highway frontage land is owned by the Arizona Department of Transportation (ADOT), who has granted access.
 - ADOT is planning a major road-widening construction project from the U.S. 60/I-10 split to the Interstate-17/I-10 split beginning in 2019. Based on discussions with ADOT

regarding site accessibility during construction, it appears that we'll be able to move the monitoring station back from the highway far enough to accommodate monitoring during construction. If moving the station is not feasible, then we will have to prepare a site relocation assessment. We believe other nearby locations adjacent to I-10 are suitable.

2. Site #2 "Thirty-Third"

For the second near-road site, a location was found near a high-density population source that does not represent the same traffic as the Diablo site. The EPA R9 approved our proposal for the second site's location, which is just east of 33rd Avenue on the south side of the I-10 highway in an area just past the soundwall. The secure monitoring shelter placement is within 10-20 meters of the road in the middle of the grade (see Figure 12 and Figure 13). As of June 2015, the site's construction is nearly complete, and we are targeting August 2015 for air monitoring startup.

This location was the most desirable because it has:

- a #13 rating in fleet-equivalency rank, #17 in AWT traffic, and #12 in heavy-duty vehicle traffic;
- extreme traffic congestion;
- many residential parcels nearby;
- favorable surrounding features and background NO₂ sources;
- adequate safety and security features that consist of the setback from the road, the grade of the slope, and a block wall around the shelter;
- adequate power supply; and,
- adequate accessibility because the highway frontage land is owned by ADOT, who has granted access.

We proposed that the location's positive aspects outweighed the negative, and features alongside this road segment will allow access while avoiding the soundwalls. The site's drawbacks include:

- an east-west orientation, which is parallel to the average predominate wind direction;
- the highway is approximately 20' below grade;
- an overpass is located at 35th Avenue; and,
- soundwalls exist on some parts of the interstate.

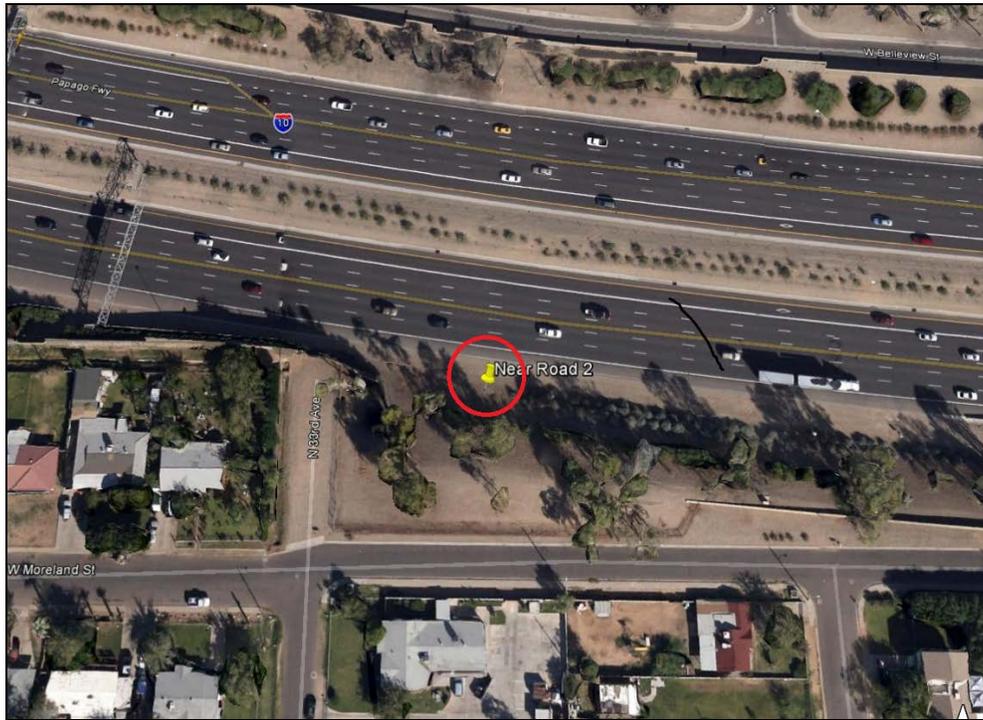


Figure 12. Aerial View of Near-road Site #2



Figure 13. Street View of Near-road Site #2

Seasonal Air Monitoring

There are no changes requested for reducing year-round monitors to seasonal monitors or vice versa. Currently, the AMD operates nine out of thirteen CO monitors on a seasonal basis (see Table 34). During the off-season, the quantity of CO monitors operating still exceeds the EPA's minimum requirements. By operating the CO network seasonally, AMD can better perform instrument upgrades, preventive maintenance that extends the life expectancy of the monitoring instruments while reducing replacement costs, and QA/QC checks on the required year-round monitors.

Table 34. Seasonal Monitors

Seasonal CO Monitoring Sites (Operational Sept. 1 – Apr. 1)
Buckeye
Dysart
Glendale
Mesa
North Phoenix
South Phoenix
South Scottsdale
Tempe
West Chandler

Daily Uses of Criteria Pollutant Data

Air Quality Forecasting

The ADEQ, in conjunction with MCAQD, has developed a year-round air quality forecasting capability for the Phoenix metropolitan area. ADEQ takes the lead on air quality forecasting and the issuing of High Pollution Advisories (HPA), while the MCAQD provides monitoring data and designates No-Burn Days. In 2014, AMD continued to supply CP and meteorological data to the ADEQ forecasters on a daily basis. In 2014, we began supplying CP and meteorological data to MAG on a daily basis as well.

Maricopa County's Air Monitoring Website

The department continued distributing 1-hour and 5-minute continuous CP data for the "[Maricopa County Interactive Pollution Map](#)". The website provides each pollutant's concentrations as well as AQI values. By having easy access to this information, the public can better plan their daily activities.

EPA's AIRNow Website

The department continued distributing 1-hour and 5-minute continuous CP data for the EPA's AIRNow website, which serves basically the same purpose as that of the Maricopa County's website.

Information Regarding Maricopa County's Supplementary Air Monitoring Programs

The 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 us to better respond to emergencies affecting air quality, to identify sources of air pollutants by performing localized air monitoring, and to collect and analyze hazardous air pollutant (HAP) samples. In addition, the program allows us to assist the Maricopa County Air Quality Compliance and Enforcement Division (MCAQCED) with the investigation and enforcement of air pollution control regulations.

In 2014, the mobile monitoring unit responded to air quality emergencies throughout Maricopa County such as heavy smoke from fires or toxic releases that threatened air quality (see Figure 14). By request, we responded to air quality concerns at an industrial source in Pinal County. All mobile monitoring personnel are required to meet medical monitoring and “hazwoper” training as per the U.S. Occupational Safety and Health Administration (OSHA) requirements found in *29 CFR 1910.120*. Members are recertified annually through refresher training.



Figure 14. 2014 Mulch Fire

Superbowl 2015

Phoenix hosted the National Football League's 49th Superbowl on February 1, 2015. The MCAQD was involved with the planning of safety and security for the games as well as other Superbowl events and activities scheduled in Glendale and downtown Phoenix. In 2014, activities primarily included attending Superbowl planning meetings and developing an air monitoring plan for public's safety and security. More information concerning our activities will be included in the next year's AMNP, because the Superbowl occurred in February 2015.

Rapid Response Notification System (RRNS)

Maricopa County enjoys many days with clean air. However, there are several days during the year when air pollution levels approach or exceed the NAAQS for PM₁₀, PM_{2.5}, or O₃. The MCAQD's robust ambient air monitoring system identifies when a significant amount of air pollution is building up. High CP pollution can cause immediate health impacts to County's residents and visitors and threaten our NAAQS attainment status. Therefore, MCAQD uses the RRNS to disseminate information regarding a developing situation to employees, stakeholders, and/or customers.

The RRNS serves as a tool to manage high pollution events using a three-part system:

1. dissemination of as near real-time as possible air quality data to the community;
2. a notification system to alert MCAQD personnel, stakeholders, and customers of a pollution problem; and,
3. onsite response from department inspectors and stakeholders to identify and discourage pollution activity and to reduce the risk of pollution impacts.

For PM₁₀ and PM_{2.5}, concentrations can buildup quickly due to a high wind speed or a fire, respectively. Overall, curtailing PM pollution from natural events is challenging; it requires advanced planning and implementation of control mechanisms to reduce the likelihood of an exceedance. However, anthropogenic activities that cause high PM concentrations near a site can often be addressed. If a quickly-developing PM event is not addressed, it could result in a NAAQS exceedance that may have been avoidable.

The AirVision™ database is programmed to trigger alerts for elevated PM₁₀ five-minute and hourly concentrations, and high PM_{2.5} five-minute concentrations. Immediately following an hourly or five-minute PM concentration surpassing an internally imposed notification limit, a high importance alert is sent out via email, text, and/or telephone. The MCAQD requests dust control permit holders inspect their sites as soon as possible and employ Best Available Control Measures to stabilize all disturbed soils to reduce blowing dust following the notification. The MCAQCED inspectors also review the data and current circumstances, make site visits, or take other appropriate actions to help stop PM concentrations from increasing. To better expedite response actions, meteorological data such as wind speed and direction are also available in five-minute increments.

Overall, there are little to no immediate actions that can be taken to reduce high concentrations of gaseous CPs. Currently, there are no RRNS triggers established for gaseous pollutants. In general, gaseous pollutant concentrations are decreased through planning and implementing long-term emission controls on sources. Depending on local sources of gaseous pollutants, it may be feasible to have a source stop operating at such times to reduce emissions. For instance, SO₂ is prone to spiking during certain industrial activities, and at such a time, temporarily shutting down an operation may be a viable control measure. Although a short-term increase or spike may occur for a particular gas, we rarely see them unless they are associated with out-of-the-ordinary activities near the site.

Emergency Response

The MCAQD is equipped to respond to air quality emergencies throughout Maricopa County, such as heavy smoke from fires or air toxic releases that threaten air quality. All division personnel are trained and use U.S. EPA and/or OSHA approved health and safety guidelines during hazardous materials and emergency response situations. Response team members are required to meet OSHA 29 CFR 1910.120 medical monitoring and training requirements. Members remain current through annual recertification.

In responding to emergencies, MCAQD has a wide variety of specialized equipment to assess air quality and meteorological conditions. These include several specially-equipped trailers and a large self-powered van equipped with CP monitors and meteorological instruments. In addition, AMD has purchased several portable monitors, including a FTIR to monitor air toxics and an Area-Rae system to monitor chlorine and ammonia.

When emergencies such as fires, chemical spills, or pipeline breaches occur, the air in the surrounding community can be adversely affected. The fire department with jurisdiction over the area is the designed authority to respond and mitigate such incidents. Most, if not all of the fire departments serving the metropolitan area have hazmat units and are prepared to identify and monitor for toxic chemicals resulting from the incident. Typically, the fire departments' mission is to monitor the air until the incident is under control, which may take several hours. The MCAQD's response may provide backup to and continuation of the fire department's monitoring efforts. Our intention is to provide monitoring during and following an incident to ensure air quality impacts are addressed. This continued monitoring allows us to provide a higher level of care and assurance to our population. The results of the study are being forthcoming.

PM_{2.5} Speciation Monitoring

Occasionally, the AMD operates PM_{2.5} speciation monitors at certain monitoring sites. Sampling locations and duration vary from year-to-year, depending on prior data findings, current air monitoring needs, and resources availability. Speciation samples are used to identify select chemical components of PM_{2.5}, which may help to identify PM_{2.5} sources as well. Speciation samples have been collected from midnight-to-midnight using the Met One SuperSASS™ samplers. An EPA-contracted commercial laboratory that supports the Chemical Speciation Network (CSN) prepares the pre-exposed filter for sampling and analyzes the filter samples following collection.

In late 2014, we conducted a special study at the Durango Complex and West Phoenix sites. These sites were chosen because of population density and/or a history of being prone to elevated concentrations of fine particulates. We collaborated with ADEQ's Air Monitoring Unit, who supported the study by temporarily loaning us a SuperSASS™ and by collecting additional samples at JLG Supersite, which is an official CSN site. The days monitored were: Thanksgiving Eve and Day, Christmas Eve and Day, and New Year's Eve and Day.

Information Regarding Additional Air Monitoring within Maricopa County

The ADEQ operates its own air monitoring surveillance system within the State of Arizona, which includes the JLG Supersite in central Phoenix. The JLG Supersite is part of the national air monitoring surveillance system, and CP data are collected at this site. In addition, ADEQ collects air quality data for research programs at both the JLG Supersite and MCAQD's South Phoenix site. These research air monitors are primarily geared toward a variety of EPA-required air pollution trends research programs. Specifically, ADEQ performs air monitoring in Maricopa County for the Chemical Speciation Network (CSN), the Interagency Monitoring of Protected Visual Environments (IMPROVE), the National Air Toxics Trends Stations (NATTS), the National Core multi-pollutant monitoring stations (NCORE), the Photochemical Assessment Monitoring Stations (PAMS), the Urban Air Toxics Monitoring Program (UATMP). They also operate visibility cameras and meteorological monitors within the County. Occasionally, ADEQ may temporarily use other sites for special projects.

For more information about ADEQ's network, consult their annual network plan located on the ADEQ [website](#).

DRAFT

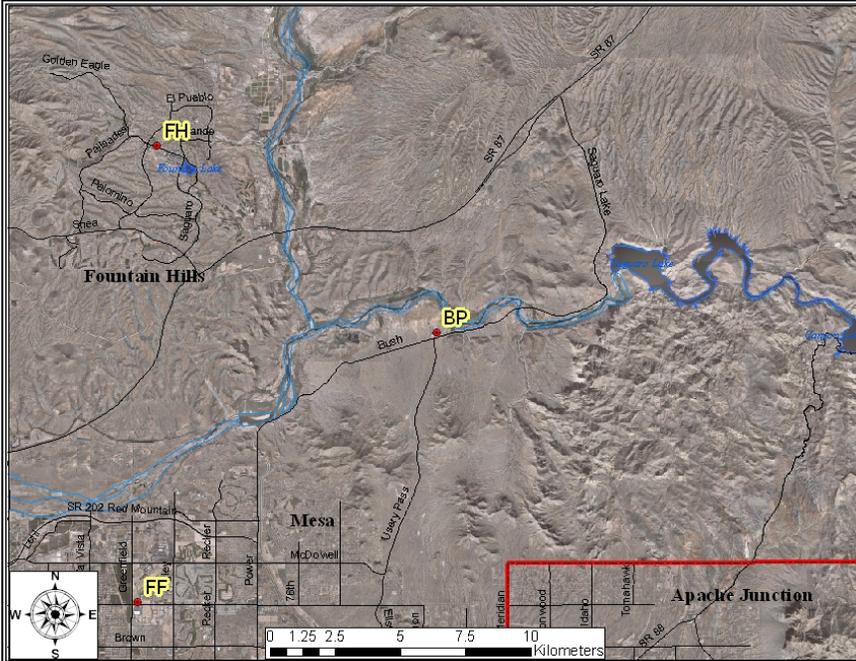
REFERENCES

1. *eCFR Title 40, Parts 50, 53, and 58*
2. EPA's Air-Data (AQS) information: <http://www.epa.gov/airdata>
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 Region 9 Air Program Information: <http://www.epa.gov/region9/air/index.html>
6. Maricopa County Air Quality Map: <http://alert.fcd.maricopa.gov/alert/Google/v3/air.html>
7. AIR-Now: <http://airnow.gov/>
8. Criteria Pollutant Information: <http://www.epa.gov/air/urbanair/>
9. Maricopa County Air Quality Department Prior Network Reviews: <http://www.maricopa.gov/aq/divisions/monitoring/network.aspx>

APPENDIX I –2014 AIR MONITORING DATA BY SITE

**Site information includes: photographs, site type and spatial scale,
and population represented.**

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



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



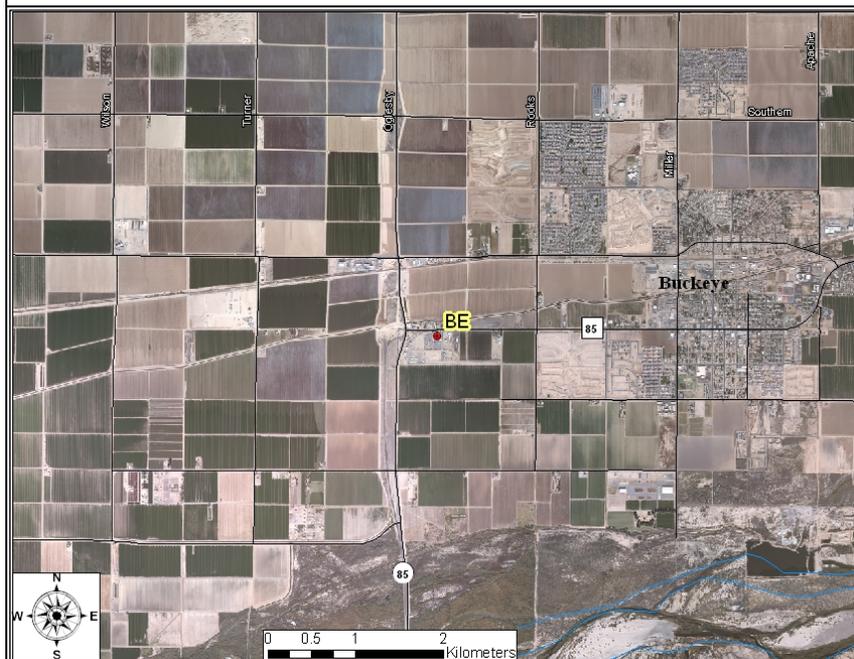
Site Description: The Blue Point site became operational in July 1995 and is located in a Maricopa County Sheriff's Sub-Station in Tonto National Forest. This site represents the maximum O₃ concentration and urban-scale downwind transport conditions. This site is located approximately 40 miles east of the Phoenix metropolitan area. This SLAMS location monitors for O₃. Meteorological monitors operating at this site include: ambient temperature and wind speed/direction.

		2012	2013	2014
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.079*	0.077*	0.088*
	O ₃ #Daily Exceedances >0.075 (ppm)	10	3	2
	O ₃ 3-year average of 4 th High (ppm)	0.075	0.077#	0.075

*Indicates an exceedance of the standard

#Indicates a violation of the standard

Buckeye (BE) (04-013-4011)



Location: US 85 & MC 85,
Buckeye
Spatial Scale: Neighborhood and
Urban (NO₂)
Monitoring Type: Population
Exposure



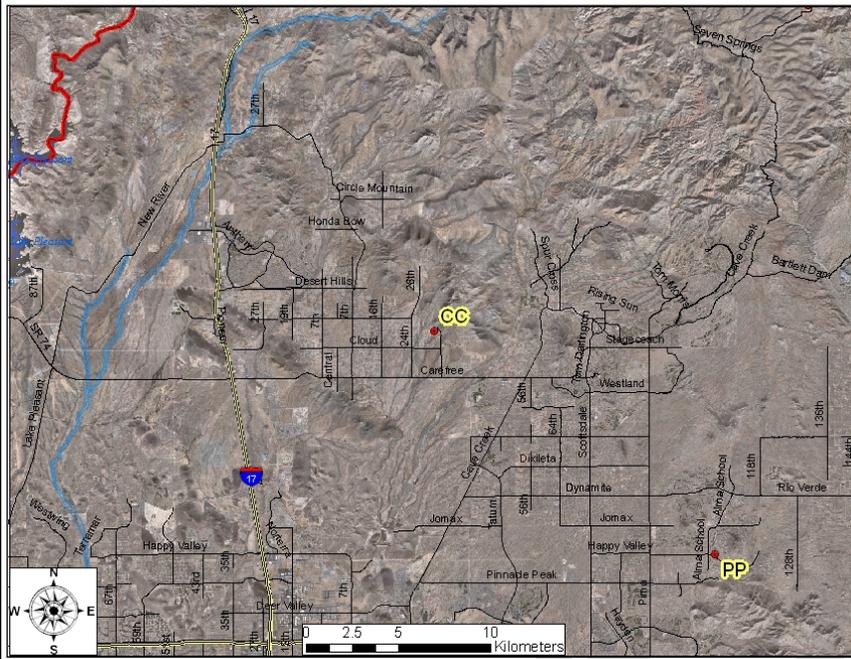
Site Description: The Buckeye site was established on August 1, 2004. The site is located in the Maricopa County Department of Transportation - Southwest Facility. The immediate area is agriculture and encroaching residential development. This SLAMS location monitors for CO seasonally, NO₂, O₃, and PM₁₀. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	0.5	0.4	0.6
	Number exceedances 8-hr CO	0	0	0
NO₂	Annual NO ₂ Avg. (ppb)	9.4	8.42	102.0
	NO ₂ 1-hour Ave. 98 th Percentile (ppb)	39.0	40.0	37.0
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.078	0.062	0.068
	O ₃ #Daily Exceedances >0.075	1	0	0
	O ₃ 3-year Avg. of 4 th High (ppm)	0.066	0.065	0.062
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	205*‡	298*‡	271*‡
	Number exceedances 24-hr PM ₁₀	2	2	2
	Annual PM ₁₀ Avg. (µg/m ³)	47.4	40.8	43.4

*Indicates an exceedance of the standard

‡Indicates EE 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 Type: Maximum Ozone Concentration



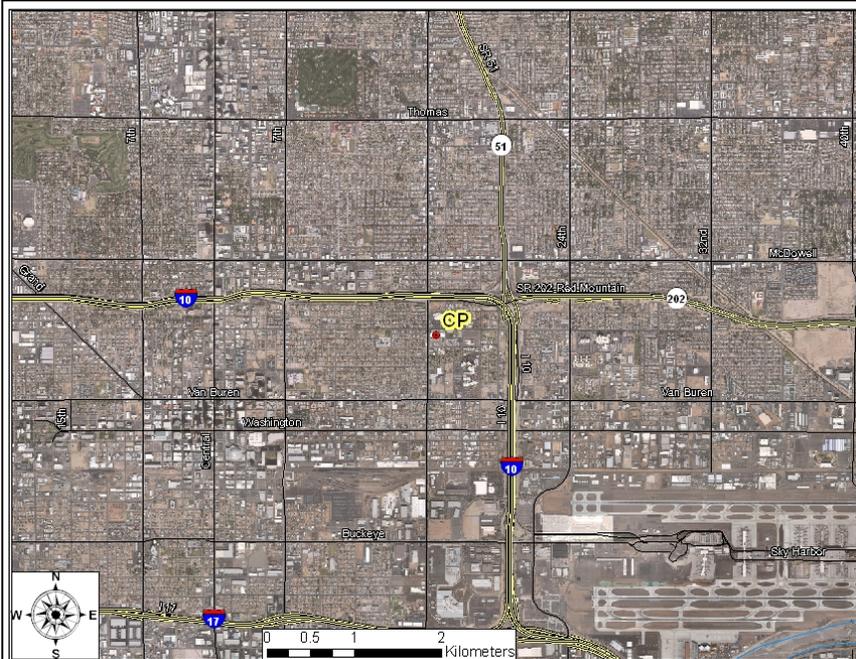
Site Description: The Cave Creek site became operational in August 2001 and is located in the Maricopa County Cave Creek Recreation Area (Park Office). This site was chosen through discussions on modifying the O₃ network for the 2005 8-hr O₃ standard. This SLAMS location monitors for O₃ only. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, rain, relative humidity, and wind speed/direction.

		2012	2013	2014
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.081*	0.076*	0.081*
	O ₃ #Daily Exceedances >0.075 (ppm)	10	1	2
	O ₃ 3-year average of 4 th High (ppm)	0.077#	0.077#	0.074

*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 Type: High Population
Exposure and Highest Concentration (NO₂ and SO₂)



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 SLAMS location monitors for CO, PM₁₀, NO₂, O₃, and SO₂. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	2.7	2.1	2.5
	Number exceedances 8-hr CO	0	0	0
NO₂	Annual NO ₂ Avg. (ppb)	21.2	19.71	17.97
	NO ₂ 1-hour Average 98 th Percentile (ppb)	63.0	60	57.0
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.084*	0.079*	0.077*
	O ₃ #Daily Exceedances >0.075 ppm	6	3	1
	O ₃ 3-year avg. of 4 th High (ppm)	0.074	0.075	0.074
PM₁₀	Max. 24-hr PM ₁₀ Avg. Continuous (µg/m ³)	340*‡	328*‡	182*‡
	Number exceedances Continuous 24-hr PM ₁₀	1	2	1
	Annual PM ₁₀ Avg. Continuous (µg/m ³)	37.9	31.8	32.0
SO₂	SO ₂ 1-hour 99 th Percentile (ppb)	3.4	8.0	7.0
	Number of Exceedances SO ₂	0	0	0
	Annual SO ₂ Avg. (ppb)	1.2	1.19	3.3

*Indicates an exceedance of the standard

‡Indicates EEs at this site - listed value is the highest official current AQS reading.

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



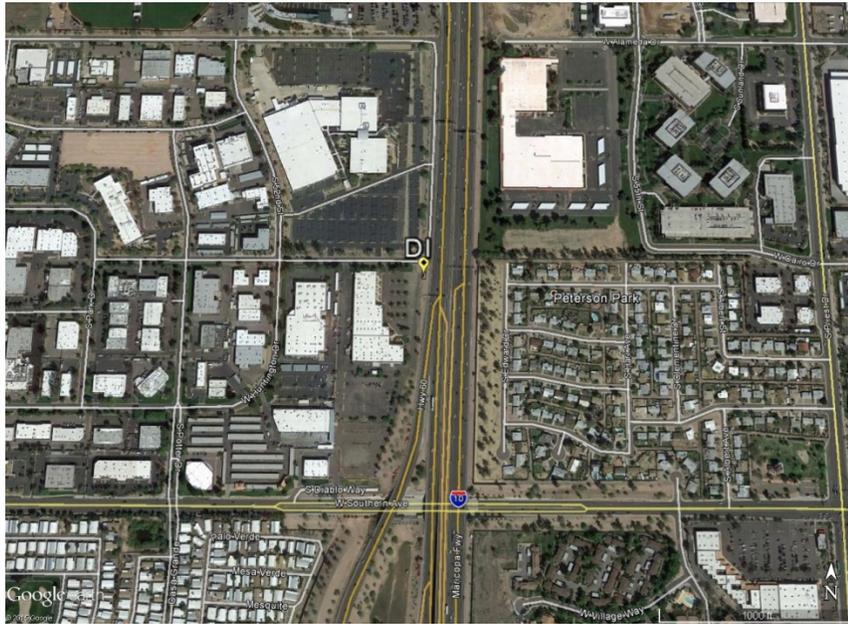
Location: 7th Avenue & Deer Valley Rd.
Spatial Scale: Middle
Monitoring Type: Source-oriented



Site Description: The Deer Valley site is located on the grounds of the Deer Valley Airport in north Phoenix. This site was started in July 2010, because changes in the Pb NAAQS necessitated that MCAQD begin Pb monitoring once again. All ambient Pb monitoring had been discontinued in 1997, because concentrations were consistently much lower than the NAAQS at that time. The source of Pb emissions is the general aviation fuels used in the propeller-driven aircraft, and Deer Valley Airport is one of the busiest general aviation airports in Maricopa County. This SLAMS location monitors for Pb only. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
Pb	Max. 24-hr Pb Avg. ($\mu\text{g}/\text{m}^3$)	0.057	0.071	0.087
	Pb #Daily Exceedances $>0.15\mu\text{g}/\text{m}^3$	0	0	0
	Pb Maximum 3-month Rolling Quarterly Average ($\mu\text{g}/\text{m}^3$)	0.0398	0.04	0.05

Diablo (DI) (04-013-4019)



Location: Fairmont Dr. & Diablo Way
Spatial Scale: Micro
Monitoring Type: Source-oriented



Site Description: The Diablo site was the first near-road air monitoring site established by MCAQD on the west side of the I-10 highway just south of the Fairmont/Diablo Way intersection. There is a concrete barrier between the highway and the frontage road, offering safety, and we have erected a secure shelter for housing the monitoring instruments. In February 2014, we began reporting CO and NO₂ data, with PM_{2.5} data soon following in May 2014. This SLAMS location monitors for CO, NO₂, and PM_{2.5}. Meteorological monitors operating at this site include: ambient temperature, relative humidity, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	N/A	N/A	1.4
	Number exceedances 8-hr CO			0
NO ₂	Annual NO ₂ Avg. (ppb)			20.85
	NO ₂ 1-hr Average 98 th Percentile (ppb)			59.0
PM _{2.5}	Max. 24-hr PM _{2.5} Avg. (µg/m ³)			29.2+
	No. of daily PM _{2.5} exceedances			0
	Annual PM _{2.5} Avg. (µg/m ³)			9.71+
	98 th Percentile PM _{2.5} Value (µg/m ³)			21.4+

+Represents <75% of a data completeness due to May startup (238 daily observations in 2014)

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



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



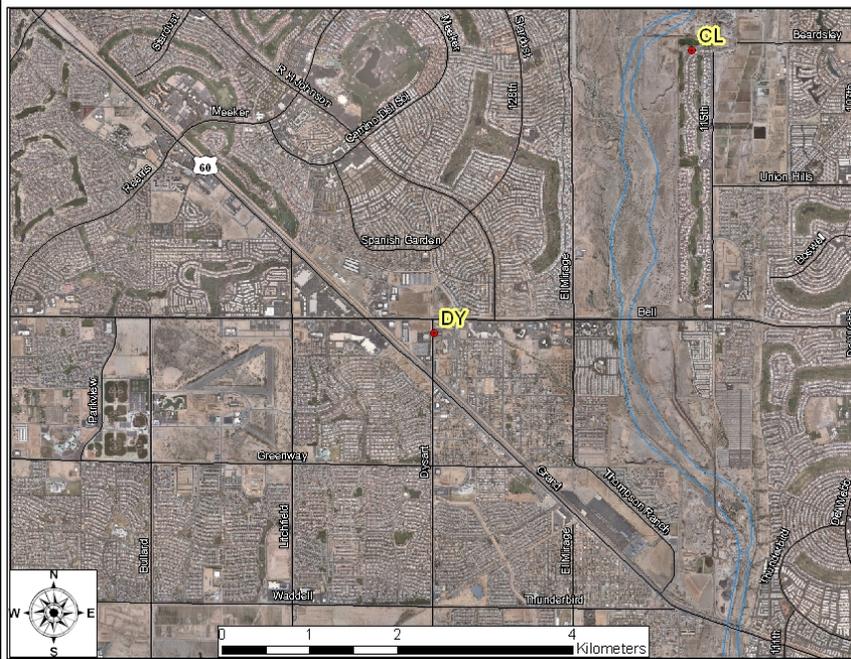
Site Description: This site is located in the Maricopa County Flood Control District storage yard. Sampling began on January 6, 1999 with the intent to replace the old maximum highest concentration site. However, in 2000 the EPA determined that the site is not equivalent to that old site, which prompted the establishment of a new highest concentration site (West 43rd). This SLAMS location monitors for PM₁₀, PM_{2.5}, and SO₂. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
PM₁₀	Max. 24-hr PM ₁₀ Avg. Continuous (µg/m ³)	221*‡	303*‡	172*‡
	Number exceedances Continuous 24-hr PM ₁₀	4	4	2
	Annual PM ₁₀ Avg. Continuous (µg/m ³)	49.1	40.1	42.1
PM_{2.5}	Max. 24-hr PM _{2.5} Avg. (µg/m ³)	74.4*	66.9*	56.4*
	No. of daily PM _{2.5} exceedances	2	3	1
	Annual PM _{2.5} Avg. (µg/m ³)	11.6	10.54	10.12
	98 th Percentile PM _{2.5} Value (µg/m ³)	24.9	27.2	24.1
SO₂	SO ₂ 1-hour 99 th Percentile (ppb)	NA	9.0	8.0
	Number of Exceedances SO ₂	0	0	0
	Annual SO ₂ Avg. (ppb)	1.5	1.15	0.87

*Indicates an exceedance of the standard

‡Indicates EEs at this site

Dysart (DY) (04-013-4010)



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



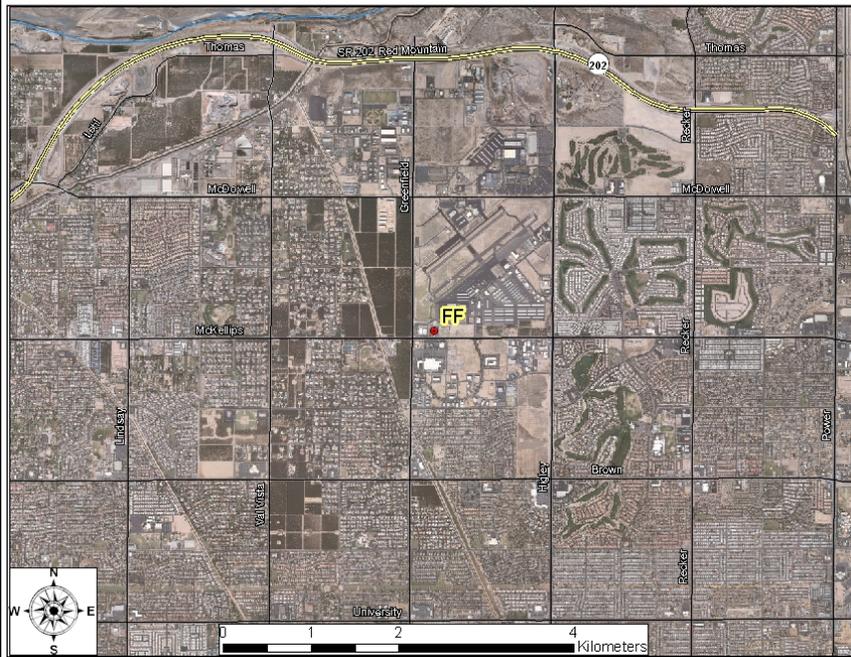
Site Description: The Dysart site was established in July 2003. It is located at the Maricopa County Facility Maintenance Yard at the corner of Bell Rd. and Dysart Rd. The site is in a growing population area in the northwest valley. The land use around the site consists of subdivisions of single family homes, commercial, and industrial. The location is approximately one mile west of the Agua Fria riverbed. This SLAMS location monitors for CO seasonally, O₃, and PM₁₀. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	0.6	0.7	0.6
	Number exceedances 8-hr CO	0	0	0
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.079*	0.075	0.075
	O ₃ #Daily Exceedances >0.075 ppm	2	0	0
	O ₃ 3-year Avg. of 4 th High (ppm)	0.071	0.072	0.072
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	167*‡	147	172*‡
	Number exceedances 24-hr PM ₁₀	1	0	2
	Annual PM ₁₀ Avg. (µg/m ³)	30.0	24.9	42.1

*Indicates an exceedance of the standard

‡Indicates EEs at this site - listed value is the highest official current AQS reading.

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



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

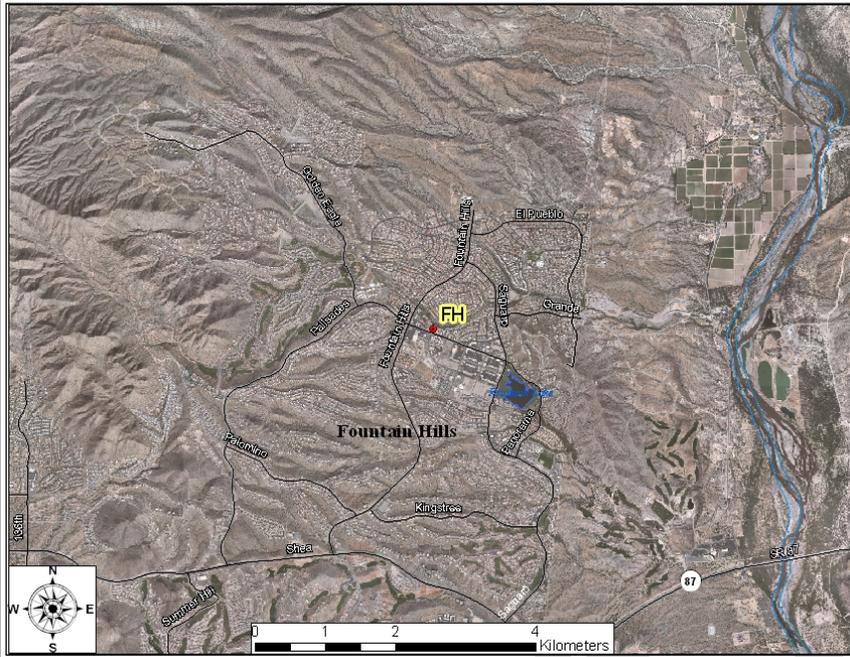


Site Description: Monitoring began in June of 1989. The site is located at a fire station near an airfield within a growing residential area. This SLAMS location monitors for O₃ only. Meteorological monitors operating at this site include: ambient temperature, relative humidity, and wind speed/direction.

		2012	2013	2014
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.075	0.082*	0.088*
	O ₃ #Daily Exceedances >0.075 ppm	0	5	4
	O ₃ 3-year avg. of 4 th High (ppm)	0.069	0.072	0.074

*Indicates an exceedance of the standard

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



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



Site Description: The site is located at a Fountain Hills fire station, and it became operational in April of 1996. The site is located approximately 15 miles downwind from the Phoenix metropolitan area and represents the high downwind O₃ concentrations on the fringes of the central basin district along the predominant summer/fall daytime wind direction. The site was shutdown from August 27, 2013 through May 14, 2014 for complex renovation. This SLAMS location monitors for O₃ only. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

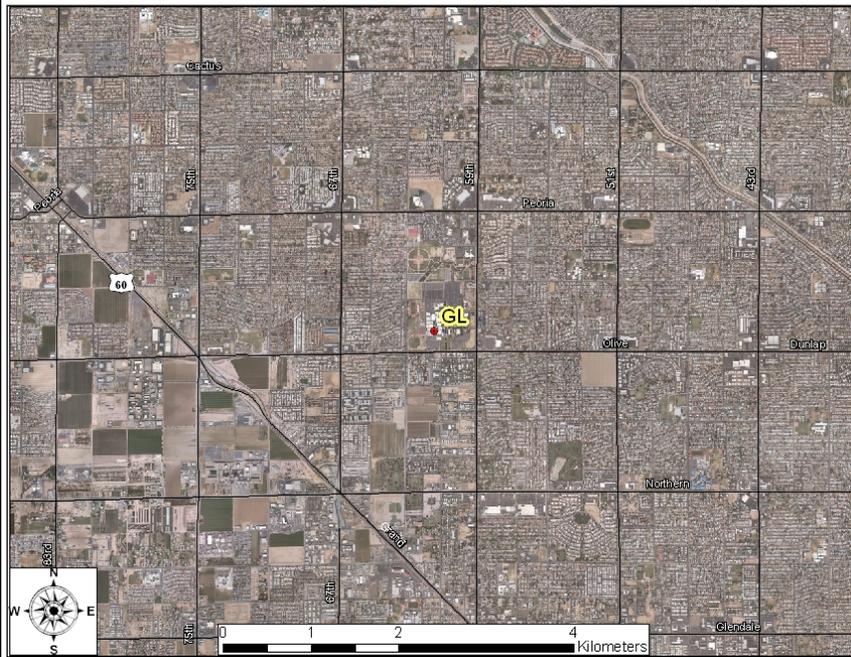
		2012	2013	2014
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.083	0.072@	0.075@
	O ₃ #Daily Exceedances >0.075 ppm	5	0	0
	O ₃ 3-year avg. of 4 th High (ppm)	0.076#	0.074@	0.071@

*Indicates an exceedance of the standard

#Indicates a violation of the standard

@ = <75% data completeness (223 valid daily observations in 2014)

Glendale (GL) (04-013-2001)



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



Site Description: The site 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. This SLAMS location monitors for CO seasonally, O₃, PM₁₀, PM_{2.5}. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	1.3	1.6	1.4
	Number exceedances 8-hr CO	0	0	0
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.088*	0.077*	0.079*
	O ₃ #Daily Exceedances >0.075 ppm	4	2	2
	O ₃ 3-year avg. of 4 th High (ppm)	0.076#	0.076#	0.074
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	337*‡	210*‡	205*‡
	Number exceedances 24-hr PM ₁₀	1	2	1
	Annual PM ₁₀ Avg. (µg/m ³)	34.1	27.5	27.4
PM_{2.5}	Max. 24-hr PM _{2.5} Avg. (µg/m ³)	66.1*	90.0*	50.0*
	No. of daily PM _{2.5} exceedances	2	1	1
	Annual PM _{2.5} Avg. (µg/m ³)	8.7	7.52	7.73
	98 th Percentile Value (µg/m ³)	18.6	16.6	18.6

*Indicates an exceedance of the standard

#Indicates a violation of the standard

‡Indicates EEs at this site - listed value is the highest official current AQS reading.

Greenwood (GR) (04-013-3010)



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



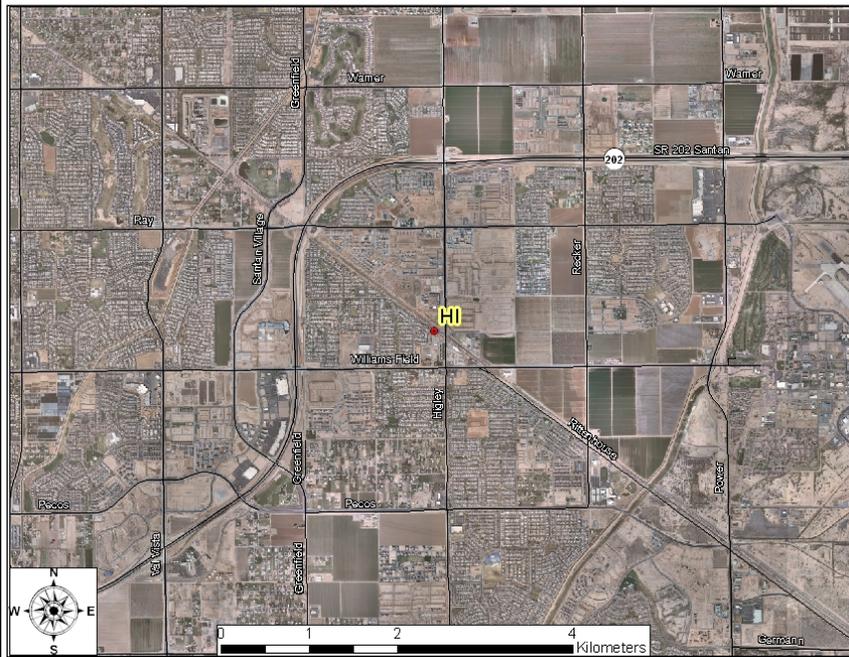
Site Description: Monitoring began at this site in December 1993. The station is bordered by I-10, homes, and the Greenwood Cemetery. Interstate-17 is approximately one mile to the east of the site. This SLAMS location monitors for CO, NO₂, and PM₁₀. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	3.2	2.5	2.6
	Number exceedances 8-hr CO	0	0	0
NO₂	Annual NO ₂ Avg. (ppb)	26.0	24.58	24.55
	NO ₂ 1-hour Average 98 th Percentile (ppb)	65.0	64.3	64.0
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	323*‡	273*‡	208*‡
	Number exceedances 24-hr PM ₁₀	2	3	1
	Annual PM ₁₀ Avg. (µg/m ³)	45.3	41.5	44.0

*Indicates an exceedance of the standard

‡Indicates EEs 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 Type: Population Exposure



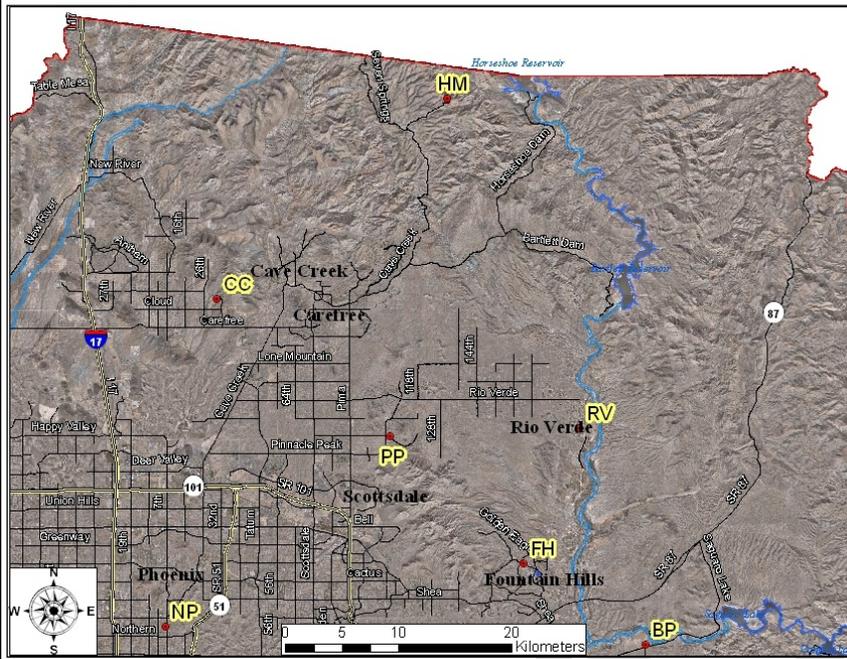
Site Description: Originally, in 1994, ADEQ set-up this site to monitor for background particulate concentrations near the urban limits of Maricopa County. Since then, urban expansion has enveloped the site, so it no longer serves its original intended purpose. The AMD has monitored for PM₁₀ since the second quarter of 2000. This is a neighborhood scale station with a monitoring type of high population exposure. The Roosevelt Water District asked us to remove the site from their property by end 2014, because they could no longer house the station. The station was shutdown on November 4, 2014, prior to a new location being identified and approved by EPA. The AMD plans on relocating the station to a nearby location as soon as possible. This SLAMS location monitored for PM₁₀ only. Meteorological monitors operating at this site included: ambient temperature, barometric pressure, and wind speed/direction.

		2012	2013	2014
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	224*‡	211*‡	179*‡
	Number exceedances 24-hr PM ₁₀	4	1	1
	Annual PM ₁₀ Avg. (µg/m ³)	38.3	34.6	34.8

*Indicates an exceedance of the standard

‡Indicates EEs 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 Type: 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 within the Tonto National Forest. This site is located approximately 40 miles north-northeast of the Phoenix metropolitan area at an elevation of 5190 feet. This SLAMS location monitors for O₃ only. Meteorological monitors operating at this site include: ambient temperature and relative humidity.

		2012	2013	2014
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.082*	0.078*	0.082*
	O ₃ #Daily Exceedances >0.075 ppm	10	1	3
	O ₃ 3-year avg. of 4 th High (ppm)	0.075	0.076#	0.075

*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 Type: Population Exposure



Site Description: This site is located at the City of Mesa - Brooks Reservoir, which is centered in an area that contains residential, commercial, and industrial properties. In December 2012, following a ten-month site construction by the City of Mesa, the site began operation again with new continuous PM₁₀, PM_{2.5}, and O₃ monitors. This SLAMS location monitors for CO seasonally, O₃, PM₁₀, and PM_{2.5}. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	1.4	1.2	4.2
	Number exceedances 8-hr CO	0	0	0
O₃	Max. 8-hr O ₃ Avg. (ppm)	Did not operate	0.086*	0.086*
	O ₃ #Daily Exceedances >0.075 ppm	Did not operate	6	6
	O ₃ 3-year avg. of 4 th High (ppm)	Did not operate	NA	NA
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	64	151	155*‡
	Number exceedances 24-hr PM ₁₀	0#	0	1
	Annual PM ₁₀ Avg. (µg/m ³)	22.8	28.8	30.4
PM_{2.5}	Max. 24-hr PM _{2.5} Avg. (µg/m ³)	23.3 (16.0)	(31.9)	33.9
	Number of Daily PM _{2.5} Exceedances	0@	0	0
	Annual PM _{2.5} Avg. (µg/m ³)	8.5 @ (5.8)@	(5.69)	8.02
	98 th Percentile PM _{2.5} Value (µg/m ³)	23.3@ (10.4)@	(12.8)	20.3

*Indicates an exceedance of the standard

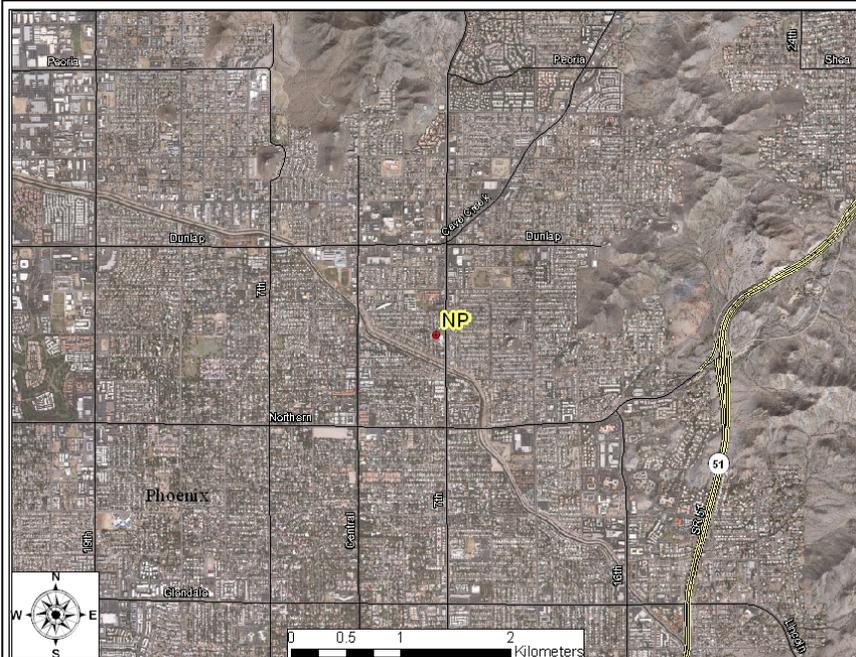
‡Indicates EEs at this site - listed value is the highest official current AQS reading.

#Indicates a violation of the standard

@ = <75% data completeness

NOTE: For 2012 and 2013, the first PM value is from a 24-hour filter sample; the second value shown in parenthesis is from a continuous monitor.

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



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



Site Description: This site is located in the Sunnyslope area of North Phoenix. The site is surrounded by residential and commercial properties. This SLAMS location monitors for CO seasonally, O₃, and PM₁₀, PM_{2.5}. Meteorological monitors operating at this site include: ambient temperature, delta T (temperature inversion), barometric pressure, solar radiation, and wind speed/direction.

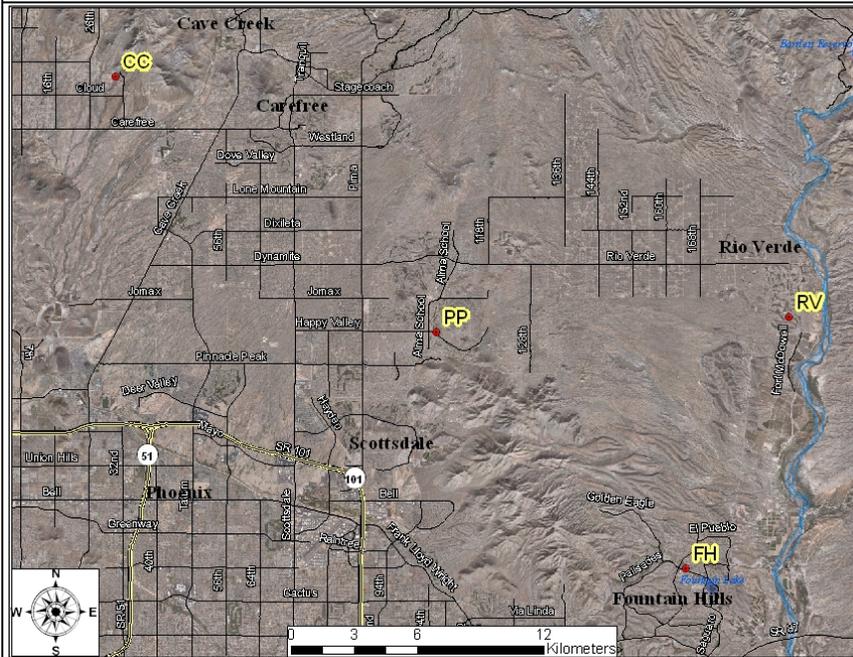
		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	1.5	1.3	1.4
	Number exceedances 8-hr CO	0	0	0
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.091*	0.080*	0.082*
	O ₃ #Daily Exceedances >0.075 ppm	10	7	6
	3-year Avg. of 4 th High (ppm)	0.081#	0.081#	0.080#
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	178*‡	151	199*‡
	Number exceedances 24-hr PM ₁₀	1	0	1
	Annual PM ₁₀ Avg. (µg/m ³)	32.4	28.8	27.9
PM_{2.5}	Max. 24-hr PM _{2.5} Avg. (µg/m ³)	30.1	57.3*	33.9
	Number of Daily Exceedances	0	1	0
	Annual PM _{2.5} Avg. (µg/m ³)	9.3	8.00	8.02
	98 th Percentile Value (µg/m ³)	21.2	17.2	20.3

*Indicates an exceedance of the standard

#Indicates a violation of the standard

‡Indicates EEs at this site - listed value is the highest official current AQS reading.

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



Location: Alma School & Happy Valley Rd.
Spatial Scale: Urban
Monitoring Type: Maximum Ozone Concentrations



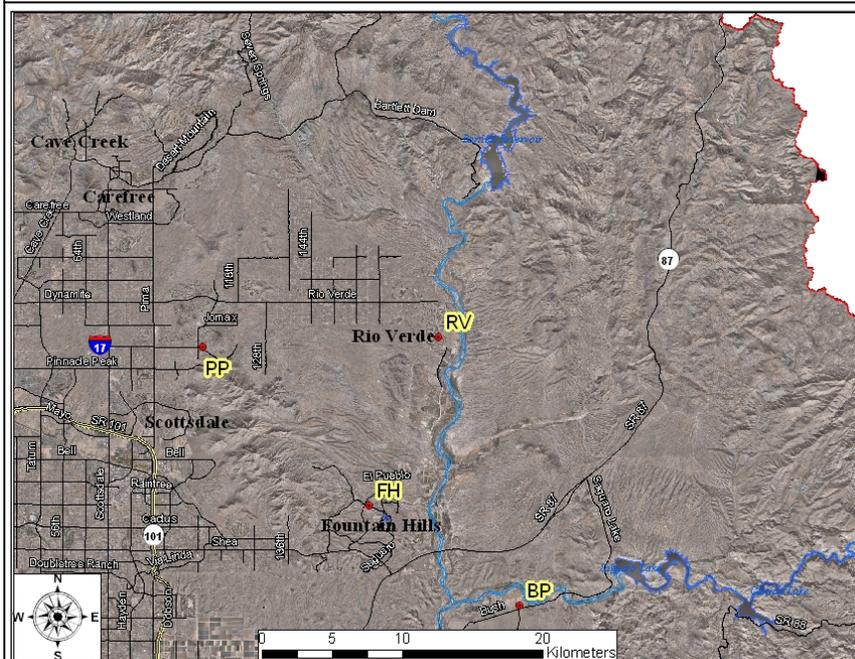
Site Description: The site is located in a geographic area of low-density population (less than 2500 people per square mile). In the current and previous years, O₃ exceedances have been recorded due to transport of O₃ and precursors from more urbanized areas of metropolitan Phoenix. This SLAMS location monitors for O₃ only. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.082*	0.080*	0.088*
	O ₃ #Daily Exceedances >0.075 ppm	6	5	6
	O ₃ 3-year Avg. of 4 th High (ppm)	0.077#	0.077#	0.078#

*Indicates an exceedance of the standard

#Indicates a violation of the standard

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



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

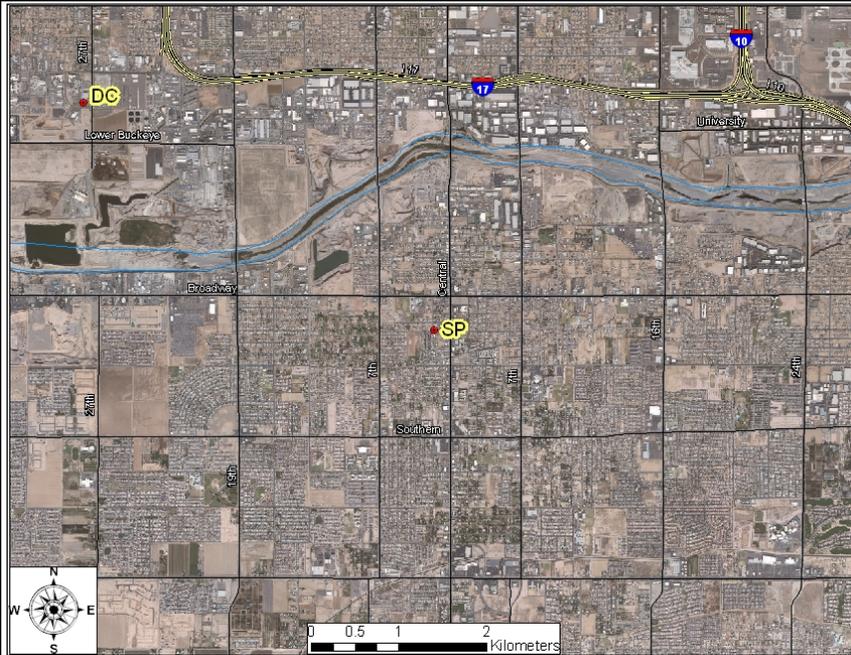


Site Description: This site has been in operation since the spring of 1997. The monitor is located at the fire station / County Sheriff's Office Sub-Station located in a residential area surrounded by the desert of Tonto National Forest. The site is on the edge of a Class I Wilderness Area. This SLAMS location monitors for O₃ only. No meteorological monitors operate at this site. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.076*	0.074	0.085*
	O ₃ #Daily Exceedances >0.075 ppm	2	0	2
	O ₃ 3-year Avg. of 4 th High (ppm)	0.074	0.075	0.072

*Indicates an exceedance of the standard

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



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



Site Description: The site has operated at its current location since October 1999. The site borders a mixture of high population density residential and commercial properties. This SLAMS location monitors for CO seasonally, O₃, PM₁₀, and PM_{2.5}. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	2.3	2.3	2.0
	Number exceedances 8-hr CO	0	0	0
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.087*	0.081*	0.080*
	O ₃ #Daily Exceedances >0.075 ppm	5	3	2
	O ₃ 3-year Avg. of 4 th High (ppm)	0.076#	0.076#	0.075
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	342*‡	294*‡	170*‡
	Number exceedances 24-hr PM ₁₀	3	2	3
	Annual PM ₁₀ Avg. (µg/m ³)	47.9	38.6	40.6
PM_{2.5}	Max. 24-hr PM _{2.5} Avg. (µg/m ³)	70.0* (70.8)	(97.3*)	101.7*
	Number of Daily PM _{2.5} Exceedances	2	4	1
	Annual PM _{2.5} Avg. (µg/m ³)	11.5 (9.2)	(9.59)	10.27
	98 th Percentile PM _{2.5} value (µg/m ³)	24.4 (20.9)	(25.8)	26.5

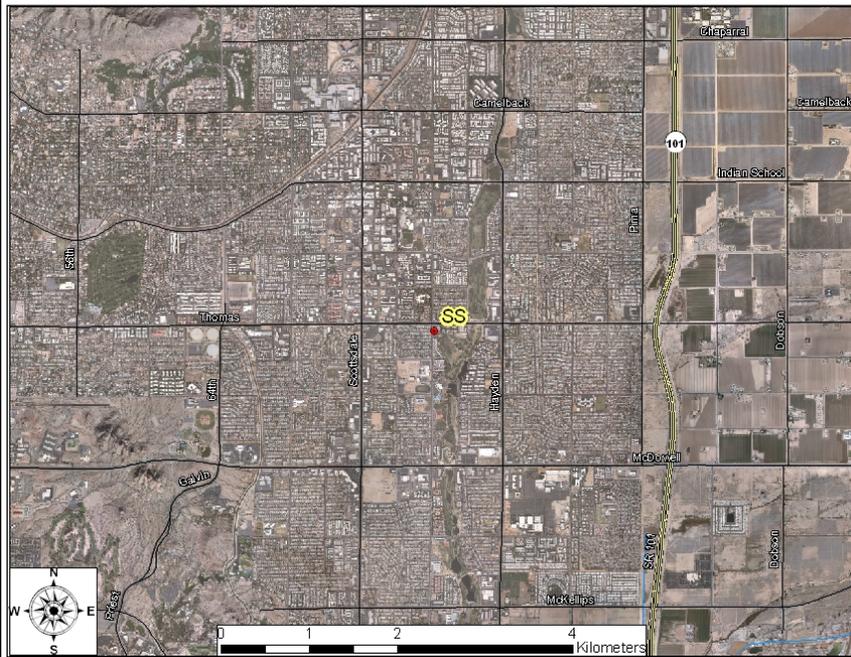
*Indicates an exceedance of the standard

#Indicates a violation of the standard

‡Indicates EEs at this site

NOTE: For 2012 and 2013, the first value is from a 24-hour filter sample; the second value shown in parenthesis is from continuous monitor.

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



Location: Thomas Rd. and Miller Rd.
Spatial Scale: Neighborhood, Urban (NO₂)
Monitoring Type: 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. Previously, SO₂ was monitored, but was discontinued in 2010 due to extremely low values being recorded. The SO₂ monitor was moved the Durango Complex site, which is closer to SO₂ point-sources. The NO₂ monitoring was discontinued in 2011. This SLAMS location monitors for CO seasonally, O₃, and PM₁₀. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

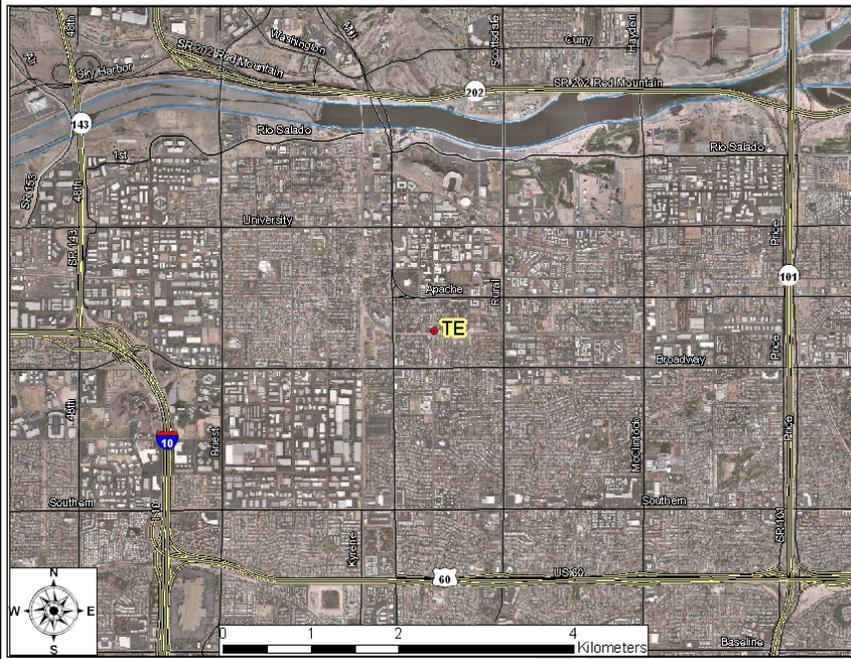
		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	1.3	1.4	1.4
	Number exceedances 8-hr CO	0	0	0
NO₂	Annual NO ₂ Avg. (ppb)	Shutdown	Shutdown	Shutdown
	NO ₂ 1-hour Average 98 th Percentile (ppb)	Shutdown	Shutdown	Shutdown
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.086*	0.079*	0.078*
	O ₃ #Daily Exceedances >0.075 ppm	7	2	1
	O ₃ 3-year Avg. of 4 th High (ppm)	0.077#	0.076#	0.075
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	102	195*‡	193*‡
	Number exceedances 24-hr PM ₁₀	0	1	2
	Annual PM ₁₀ Avg. (µg/m ³)	31.6	26.0	31.0

*Indicates an exceedance of the standard

#Indicates a violation of the standard

‡Indicates EEs at this site

Tempe (TE) (04-013-4005)



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



Site Description: The site was established in 2000 and is located near the ASU Tempe Campus. The site is surrounded by residential homes, some high-density residential properties, and a railroad track. In spring 2015, the site was temporarily shutdown due to the owner, Arizona Public Service – a power provider, needing to make infrastructure upgrades to the site. This SLAMS location monitors for CO seasonally, O₃, PM₁₀, and PM_{2.5}. Meteorological monitors operating at this site include: ambient temperature, delta T (temperature inversion), rain, and wind speed/direction.

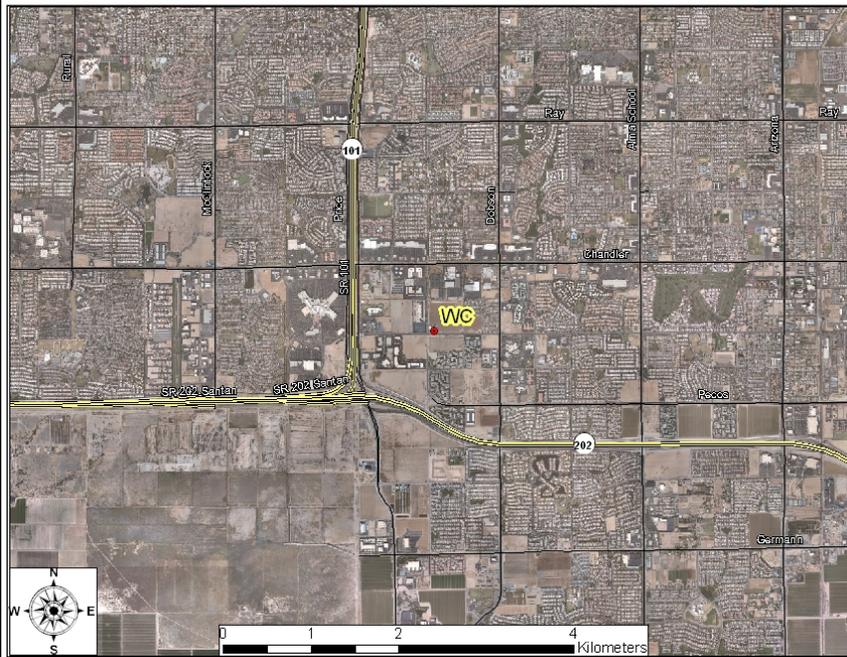
		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	1.6	1.3	1.4
	Number exceedances 8-hr CO	0	0	0
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.078*	0.077*	0.077*
	O ₃ #Daily Exceedances >0.075 ppm	1	1	1
	O ₃ 3-year Avg. of 4 th High (ppm)	0.070	0.071	0.071
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	169*‡	227*‡	175*‡
	Number exceedances 24-hr PM ₁₀	1	1	1
	Annual PM ₁₀ Avg. (µg/m ³)	31.6	28.3	28.7
PM_{2.5}	Max. 24-hr PM _{2.5} Avg. (µg/m ³)	23.1	51.1*	44.0*
	Number of Daily PM _{2.5} Exceedances	0	1	1
	Annual PM _{2.5} Avg. (µg/m ³)	9.27	8.69	8.63
	98 th Percentile PM _{2.5} Value (µg/m ³)	19.5	17.9	17.4

*Indicates an exceedance of standard

#Indicates a violation of the standard

‡Indicates EEs at this site

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



Location: Frye Rd. and Ellis St.
Spatial Scale: Neighborhood,
 Middle (PM₁₀)
Monitoring Type: Population
 Exposure



Site Description: This site was established in January 1995. A wide range of land uses surround the site including residential, agriculture, and heavy industry (semiconductor manufacturing plants and liquid air storage). This SLAMS location monitors for CO seasonally, O₃, and PM₁₀. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, relative humidity, and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	1.4	1.3	1.7
	Number exceedances 8-hr CO	0	0	0
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.082*	0.081*	0.074
	O ₃ #Daily Exceedances >0.075 ppm	2	1	0
	O ₃ 3-year Avg. of 4 th High (ppm)	0.074	0.072	0.071
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	402*	234*‡	163*‡
	Number exceedances 24-hr PM ₁₀	5	3	1
	Annual PM ₁₀ Avg. (µg/m ³)	36.1	28.5	29.3

*Indicates an exceedance of the standard

‡Indicates EEs at this site

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



Location: 43rd Ave. & Broadway Rd.

Spatial Scale: Middle

Monitoring Type: Highest Concentrations



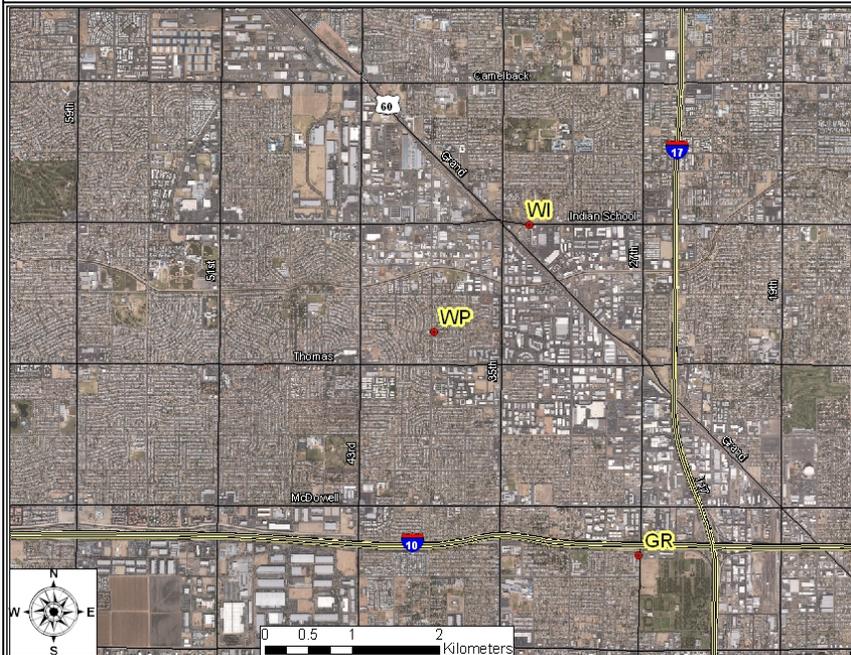
Site Description: Monitoring began at the site in the 2nd quarter of 2002. This site is located at a Maricopa County Department of Transportation storage lot and is surrounded by a combination of heavy industry and residential homes. The main purpose of the site is to measure maximum PM₁₀ concentration. The sources around the site include sand and gravel operations, auto and metal recycling facilities, landfills, paved and unpaved haul roads, and cement casting. This SLAMS location monitors for PM₁₀. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, delta T (temperature inversion), and wind speed/direction.

		2012	2013	2014
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	254*‡	301*‡	171*‡
	Number exceedances 24-hr PM ₁₀	7	4	1
	Annual PM ₁₀ Avg. (µg/m ³)	50.5	42.5	45.9

*Indicates an exceedance of the standard

‡Indicates EEs at this site

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



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



Site Description: This site has been operational since 1984. The spatial scale for the West Phoenix site is neighborhood. It is located in an area of stable, high-density residential properties. This SLAMS location monitors for CO, NO₂, O₃, PM₁₀, and PM_{2.5}. In addition, this is a QA/QC collocation site for PM_{2.5} where the MCAQD operates one filter-based PM_{2.5} FRM sampler along with one continuous PM_{2.5} FEM analyzer as per 40 CFR Part 58 Appendix A. Meteorological monitors operating at this site include: ambient temperature, barometric pressure, delta T (temperature inversion), and wind speed/direction.

		2012	2013	2014
CO	Max. 8-hr CO Avg. (ppm)	3.9	2.7	4.2
	Number exceedances 8-hr CO	0	0	0
NO₂	Annual NO ₂ Avg. (ppb)	19.4	17.97	80.0
	NO ₂ 1-hr Avg. 98 th Percentile (ppb)	58.0	69.0	17.97
O₃	Max. 8-hr O ₃ Avg. (ppm)	0.087*	0.083*	0.079*
	O ₃ #of Daily Exceedances >0.075 ppm	9	4	4
	O ₃ 3-year Avg. of 4 th High (ppm)	0.078#	0.079#	0.078#
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	189*‡	255*‡	210*‡
	Number exceedances 24-hr PM ₁₀	1	2	2
	Annual PM ₁₀ Avg. (µg/m ³)	46.9	35.7	38.8
PM_{2.5}	Max. 24-hr PM _{2.5} Avg. (µg/m ³)	112.6* (89.1*)	76.0* (53.0*)	170.7*
	Number of Daily PM _{2.5} Exceedances	2 (2)	1 (3)	3
	Annual PM _{2.5} Avg. (µg/m ³)	12.0 (10.4)	10.16 (10.57)	11.13
	98 th Percentile PM _{2.5} Value	29.0 (23.6)	28.0	28.9

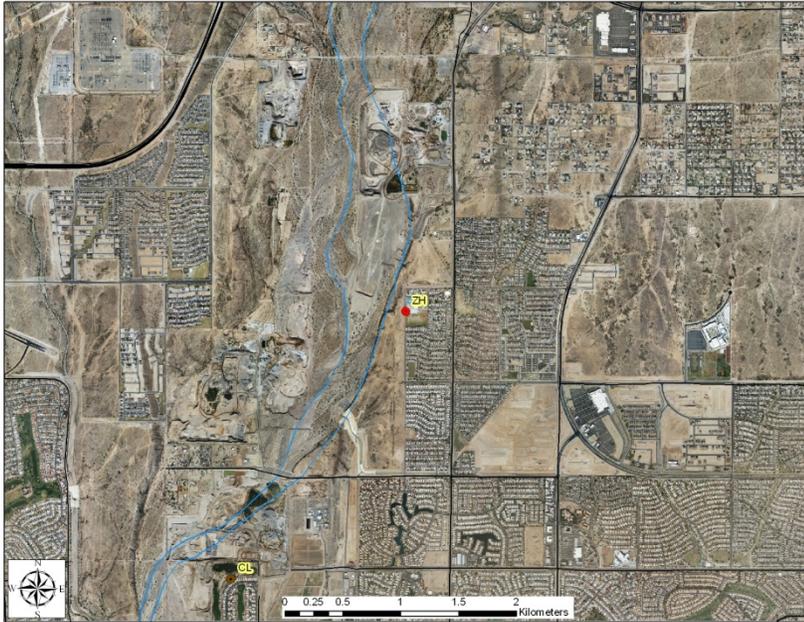
*Indicates an exceedance of the standard

#Indicates a violation of the standard

‡Indicates EEs at this site - listed value is the highest official current AQS reading.

NOTE: For 2012, and 2013, the first value is from the filter-based monitor; second value shown in parenthesis is from continuous monitor.

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



Location: 109th Ave. and Deer Valley Road.
Spatial Scale: Neighborhood
Monitoring Type: Population Exposure



Site Description: This site 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 PM₁₀ site that was situated in the Agua Fria River bottom adjacent to sand and gravel mines. Zuni Hills replaced 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. The site was shutdown for construction in the area June 2014-August 2014. This SPM samples for PM₁₀ only and meets the operating requirements of *40 CFR Part 58.20(c)*. Therefore, the data can be used for comparison to the PM₁₀ NAAQS. Meteorological monitors operating at this site include: ambient temperature and wind speed/direction.

		2012	2013	2014
PM₁₀	Max. 24-hr PM ₁₀ Avg. (µg/m ³)	285*‡	165*‡	166*‡
	Number exceedances 24-hr PM ₁₀	1	1	1
	Annual PM ₁₀ Avg. (µg/m ³)	49.1	23.5	24.0

*Indicates an exceedance of the standard

‡Indicates EEs at this site - listed value is the highest official current AQS reading.

APPENDIX II - EPA-REQUIRED SITE METADATA

Detailed information includes: compliance information regarding air monitoring technical specifications found in *40 CFR §58.10 and Appendices A, C, D, and E* (QA, monitoring methods, network design, and monitor siting)

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, this 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 R9 for approval. Any action on the department's part will be dependent on EPA R9 approval.

Please note that the previous statement is general in nature and is required to be placed in the annual network review by *40 CFR Part 58*. 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.

Appendix II Site Schematic Descriptions

Analysis Method (filter samples only) refers to the method used to process and analyze PM and Pb filter 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 show as "N/A", aka not applicable.

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.

Date of Annual Performance Evaluation refers to the last 2014 QA audit on the gaseous analyzers. These evaluations are performed by the AMD's QA team. Twenty-five percent of the monitors operating within each gaseous pollutant's network are evaluated quarterly; thereby, each monitor is evaluated at least once per year as per *40 CFR Part 58, Appendix A, §3.2.2*.

Date of Semi-Annual Flow Rate Audit refers to the last 2014 QA audit on PM and Pb monitors as per *40 CFR Part 58, Appendix A, §§ 3.2.4 and 3.3.4*, respectively. These evaluations are performed by the AMD's QA team 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 bulkhead of the analyzer. This residence time is calculated by a formula that is based on the sample line's diameter and length, and the flow rate of the air intake. It is important to keep residence time low to prevent gases in the air sample from reacting with the sample line material or with other gases in the sample; i.e., O₃ could react with nitrogen oxides in the sample if the residence time exceeds 20 seconds. This measurement applies to CO, NO₂, SO₂, and O₃ sample lines.

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

-General Information	
Pollutant	O ₃
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 Audits Performed Annually& Date of Last 2014 Check	5 12/18/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400 (087)
Date Established	01/01/1993
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	7.6 seconds
Distance from Supporting Structure	3 meters
Distance from Obstructions	3.5 meters
Distance to Furnace Flue	None
Spacing from Trees	6 meters
Nearest Major Roadway	Bush Highway
Distance and Direction to Road	160 meters, S
Traffic Count (ADT)	1,000
Groundcover	Paved

BUCKEYE
County ID: BE
AQS ID: 04-013-4011
Address 26453 W MC85
Coordinates: 33.37005N, -111.62070W
Metropolitan Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information				
Pollutant	O ₃	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	25	15	25	23
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	4 10/28/14	2 09/03/14	2 11/13/14	2 02/05/14 09/03/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015
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	Semi-monthly
-Appendix C Requirements				
Sampler Make & Model	API M400 (087)	API M300 (093)	API M200 (099)	Thermo TEOM 1400AB (079)
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 Type	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	4 meters	4 meters	4 meters	4.5 meters
Airflow Arc	360°	360°	360°	360°
Distance from Supporting Structure	2 meters	2 meters	2 meters	2.1 meters
Probe Sample Line Material	Teflon	Teflon	Teflon	N/A
Pollutant Sample Residence Time	4.0 seconds	4.0 seconds	4.0 seconds	N/A
Distance from Obstructions	None	None	None	None
Distance to Furnace Flue	None	None	None	None
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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	O ₃
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 Audits Performed Annually & Date of Last 2014 Check	5 10/07/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	Bi-weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400 (087)
Date Established	07/20/2001
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	10.2 seconds
Distance from Supporting Structure	2.5 meters
Distance from Obstructions	None
Distance to Furnace Flue	None
Spacing from Trees	14.9 meters
Nearest Major Roadway	32 nd 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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information					
Pollutant	O ₃	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	25	25	26	25	21
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	4 11/04/14	4 11/05/14	4 08/12/14	4 10/22/14	2 06/10/14 11/05/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015				
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	Semi-monthly
-Appendix C Requirements					
Sampler Make & Model	API M400 (087)	API M300 (093)	API M200 (099)	API M100 (100)	Thermo TEOM 1400AB (079)
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 Type	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	10.3 meters				
Airflow Arc	360°	360°	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	Teflon	Teflon	N/A
Pollutant Sample Residence Time	9.0 seconds	N/A	9.0 seconds	10.0 seconds	N/A
Distance from Supporting Structure	2.5 meters	2.5 meters	2.5 meters	2.5 meters	2.1 meters
Distance from Obstructions	None	None	None	None	None
Distance to Furnace Flue	None	None	None	None	None
Spacing from Trees	None	None	None	None	None
Nearest Major Roadway A	16 th 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.				
Distance and Direction to Road	75 meters, N				
Traffic Count (ADT)	Unknown	Unknown	Unknown	Unknown	Unknown

Groundcover	Paved	Paved	Paved	Paved	Paved
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DEER VALLEY

County ID: DV

AQS ID: 04-013-4018

Address: 1030 West Deer Valley Road, Phoenix

Coordinates: 33.684627N, -112.08635W

Metropolitan Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	Pb
Sampling Schedule	1 in 6 day
Analysis Method (filters only)	EQL-0995-110
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 Flow Rate Checks Performed Annually	28 (collocated)
# Accuracy Audit Performed Annually & Date of Last Two 2014 Checks	2 03/04/14 08/09/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	Weekly
Frequency of Flow Rate Audits	Semi-Annual
-Appendix C Requirements	
Sampler Make & Model	Hi-Q TSP Sampler (109)
Date Established	07/01/2010
Classification	SLAMS
Method (FRM, FEM, ARM)	FRM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	N/A
Pollutant Sample Residence Time	N/A
Distance from Supporting Structure	1.1 meters
Distance from Obstructions	None
Distance to Furnace Flue	None
Spacing from Trees	None
Nearest Major Roadway	Deer Valley
Distance and Direction to Road	300 meters, S
Traffic Count (ADT)	6,452
Groundcover	Paved

DIABLO
County ID: DI
AQS ID: 04-013-4019
Address: 1919 W. Fairmount Dr., Tempe
Coordinates: 33.3961N, -111.9680
Metropolitan Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant	CO	NO₂	PM_{2.5}
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	23	23	16
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	5 11/19/14	3 08/27/14	3 08/27/14 10/29/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	Semi-monthly
-Appendix C Requirements			
Sampler Make & Model	API M300 (093)	API M200 (099)	TEOM 1405 DF (182)
Date Established	2/13/2014	02/13/2014	05/01/2014
Classification	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FRM	FRM	FEM
-Appendix D Requirements			
Monitoring Type	Max. Conc. Source	Max. Conc. Source	Max Conc. Source
Monitoring Scale	Micro	Micro	Micro
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	5 meters	5 meters	5 meters
Airflow Arc	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A
Pollutant Sample Residence Time	4.5 seconds	4.5 seconds	N/A
Distance from Supporting Structure	2.6 meters	2.6 meters	2.4 meters
Distance from Obstructions	None	None	None
Distance to Furnace Flue	None	None	None
Spacing from Trees	None	None	None
Nearest Major Roadway A	Interstate-10	Interstate-10	Interstate-10
Distance and Direction to Road	30 meters, E	30 meters, E	30 meters, E
Traffic Count (ADT)	275,000	275,000	275,000
Nearest Major Roadway B	Fairmount Dr.	Fairmount Dr.	Fairmount Dr.
Distance and Direction to Road	18 meters, N	18 meters, N	18 meters, N
Traffic Count (ADT)	3,000	3,000	3,000
Groundcover	Paved/Gravel	Paved/Gravel	Paved/Gravel

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

-General Information			
Pollutant	PM ₁₀	PM _{2.5}	SO ₂
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	Yes	N/A
-Appendix A Requirements			
# Precision Checks Performed Annually	25	24	27
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	2 01/03/14 07/03/14	2 01/03/14 07/03/14	3 10/09/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	N/A	N/A	Bi-Weekly
Frequency of Flow Rate Verification	Semi-monthly	Semi-monthly	N/A
-Appendix C Requirements			
Sampler Make & Model	TEOM 1400AB (079)	FDMS-TEOM 1400AB (181)	API M100 (100)
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 Type	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	360°	360°	360°
Probe Sample Line Material	N/A	N/A	Teflon
Pollutant Sample Residence Time	N/A	N/A	10.0 sec
Distance from Supporting Structure	3.7 meters	2 meters	2 meters
Distance from Obstructions	8 meters	2 meters	2 meters
Distance to Furnace Flue	None	None	None
Spacing from Trees	8 meters, S	8 meters, S	8 meters, S
Nearest Major Roadway	27 th Ave	27 th Ave	27 th 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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant	O₃	CO	PM₁₀
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	15	25
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	4 10/29/14	2 09/03/14	2 01/09/14 07/09/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	Semi-monthly
-Appendix C Requirements			
Sampler Make & Model	API M400 (087)	API M300 (093)	TEOM 1400AB (079)
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 Type	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	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A
Pollutant Sample Residence Time	4.8 seconds	4.8 seconds	N/A
Distance from Supporting Structure	1.6 meters	1.6 meters	2 meters
Distance from Obstructions	None	None	None
Distance to Furnace Flue	None	None	None
Spacing from Trees	None	None	None
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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	O ₃
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 Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzer	4 10/08/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400 (087)
Date Established	06/01/1989
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	16.4 seconds
Distance from Supporting Structure	2.5 meters
Distance from Obstructions	None
Distance to Furnace Flue	None
Spacing from Trees	25+ meters
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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	O ₃
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	Shutdown 8/27/13 for construction. Reopened 5/14/14
Is site suitable for comparison to PM _{2.5} NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	16
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzer	3 11/17/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400 (087)
Date Established	04/01/1996
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	4.8 seconds
Distance from Supporting Structure	2 meters
Distance from Obstructions	Canopy 1 meter higher than probe, located 9 meters to the south
Distance to Furnace Flue	None
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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information				
Pollutant	O ₃	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	24	13	23	22
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	4 10/29/14	2 09/04/14	2 05/14/14 10/29/14	2 05/14/14 10/29/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	Semi-monthly	Semi-monthly
-Appendix C Requirements				
Sampler Make & Model	API M400 (087)	API M300 (093)	TEOM 1400AB (079)	FDMS-TEOM 1400AB (181)
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	FEM	FEM
-Appendix D Requirements				
Monitoring Type	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	3.7 meters	3.7 meters	3.4 meters	4.0 meters
Airflow Arc	360°	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A	N/A
Pollutant Sample Residence Time	4.5 seconds	4.5 seconds	N/A	N/A
Distance from Supporting Structure	2 meters	2 meters	2.1 meters	3.1 meters
Distance from Obstructions	2.5m	2.5m	None	None
Distance to Furnace Flue	None	None	None	None
Spacing from Trees	None	None	None	None
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	59 th Ave	59 th Ave	59 th Ave	59 th 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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant	CO	NO₂	PM₁₀
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	26	24
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	2 11/10/14	4 12/23/14	2 02/05/14 09/16/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	Semi-monthly
-Appendix C Requirements			
Sampler Make & Model	API M300 (093)	API M200 (099)	TEOM 1400AB (079)
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 Type	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	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A
Pollutant Sample Residence Time	4.3 seconds	4.3 seconds	N/A
Distance from Supporting Structure	2 meters	2 meters	2 meters
Distance from Obstructions	25+ meters	25+ meters	25+ meters
Distance to Furnace Flue	None	None	None
Spacing from Trees	20 meters, NW	20 meters, NW	20 meters, NW
Nearest Major Roadway A	27 th Ave	27 th Ave	27 th 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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	PM ₁₀
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	Yes in 2014
Is site suitable for comparison to PM _{2.5} NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	18
# Accuracy Audits Performed Annually & Date of Last Two 2014 Checks for PM	2 07/14/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Bi-Weekly
-Appendix C Requirements	
Sampler Make & Model	TEOM 1400AB (079)
Date Established	07/01/2000
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	N/A
Pollutant Sample Residence Time	N/A
Distance from Supporting Structure	2.2 meters
Distance from Obstructions	10 meters
Distance to Furnace Flue	None

Spacing from Trees	10 meters
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

DRAFT

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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	O ₃
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 Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzer	4 11/13/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400 (087)
Date Established	01/01/1993
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	6.2 seconds
Distance from Supporting Structure	2.8 meters
Distance from Obstructions	9 meters
Distance to Furnace Flue	None

Spacing from Trees	None
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

DRAFT

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

-General Information				
Pollutant	O₃	CO	PM₁₀	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	27	16	26	26
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	4 11/20/14	3 10/23/14	2 02/26/14 10/07/14	2 02/26/14 08/28/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	Bi-Weekly	Bi-Weekly
-Appendix C Requirements				
Sampler Make & Model	API M400 (087)	API M300 (093)	TEOM 1400AB (079)	TEOM 1405-DF (182)
Date Established	11/1/2012	01/01/1978	11/1/2012	11/1/2012
Classification	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FEM	FEM	FEM
-Appendix D Requirements				
Monitoring Type	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	7 meters	7 meters	6.2 meters	6.9 meters
Airflow Arc	360°	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A	N/A
Pollutant Sample Residence Time	4.6 seconds	4.6 seconds	N/A	N/A
Distance from Supporting Structure	2 meters	2 meters	2.5 meters	3 meters
Distance from Obstructions	25+ meters	25+ meters	25+ meters	25+ meters
Distance to Furnace Flue	None	None	None	None
Spacing from Trees	25+ meters	25+ meters	25+ meters	25+ meters
Nearest Major Roadway	Broadway Rd.	Broadway Rd.	Broadway Rd.	Broadway Rd.
Distance and Direction to Road	305 meters, S	305 meters, S	305 meters, S	305 meters, S
Traffic Count (ADT)	33,000	33,000	33,000	33,000
Groundcover	Paved/Gravel	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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information				
Pollutant	O ₃	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	27	15	25	23
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	3 11/03/14	3 11/03/14	2 03/10/14 09/10/14	3 08/26/14 09/10/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	Bi-Weekly	Bi-Weekly
-Appendix C Requirements				
Sampler Make & Model	API M400 (087)	API M300 (093)	BAM 1020 (122)	BAM 1020 (122) / TEOM 1400AB (079)
Date Established	01/01/1975	01/01/1974	9/1/2011	9/1/2011
Classification	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FEM	FEM
-Appendix D Requirements				
Monitoring Type	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	4.6 meters	4.6 meters	4.5 meters	4.5 meters
Airflow Arc	360°	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A	N/A
Pollutant Sample Residence Time	5.0 seconds	5.0 seconds	N/A	N/A
Distance from Supporting Structure	2.1 meters	2.1 meters	2.1 meters	3.3 meters
Distance from Obstructions	4 meters	4 meters	4 meters	5 meters
Distance to Furnace Flue	None	None	None	None
Spacing from Trees	None	None	None	None
Nearest Major Roadway	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
Traffic Count (ADT)	32,000	32,000	32,000	32,000
Groundcover	Gravel	Gravel	Gravel	Gravel

PINNACLE PEAK
 County ID: PP
 AQS ID: 04-013-2005
 Address: 24295 N Alma School Rd, Scottsdale
 Coordinates: 33.70655N, -111.85557W
 Metropolitan Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	O ₃
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 Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzer	3 07/17/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400 (087)
Date Established	02/01/1988
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	5.9 meters
Airflow Arc	360°
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	6.2 seconds
Distance from Supporting Structure	3 meters
Distance from Obstructions	4.2 meters
Distance to Furnace Flue	None
Spacing from Trees	None
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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	O ₃
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 Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzer	3 11/03/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400 (087)
Date Established	01/01/1997
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	9.7 seconds
Distance from Supporting Structure	3 meters
Distance from Obstructions	3 meters
Distance to Furnace Flue	None
Spacing from Trees	None
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 Tamarisks, Phoenix
Coordinates: 33.40316N, -112.07533W
Metropolitan Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information				
Pollutant	O₃	CO	PM₁₀	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	24	14	22	22
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	4 12/26/14	4 10/02/14	2 04/16/14 10/30/14	2 05/01/14 10/30/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	Semi-Monthly	Semi-Monthly
-Appendix C Requirements				
Sampler Make & Model	API M400 (087)	API M300 (093)	TEOM 1400AB (079)	TEOM 1405-DF (182)
Date Established	10/01/1999	10/01/1999	7/1/2007	05/01/2010
Classification	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FEM	FEM
-Appendix D Requirements				
Monitoring Type	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	4.9 meters	4.9 meters	5.4 meters	5.5 meters
Airflow Arc	360°	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A	N/A
Pollutant Sample Residence Time	6.9 seconds	6.9 seconds	N/A	N/A
Distance from Supporting Structure	5 meters	5 meters	2 meters	5 meters
Distance from Obstructions	25+m	25+m	25+m	25+m
Distance to Furnace Flue	None	None	None	None
Spacing from Trees	9 meters	9 meters	2 meters	4 meters
Nearest Major Roadway A	Central Ave	Central Ave	Central Ave	Central Ave
Distance and Direction to Road	168 meters, E	168 meters, E	165 meters, E	168 meters, E
Traffic Count (ADT)	24,000	24,000	24,000	24,000
Nearest Major Roadway B	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
Traffic Count (ADT)	18,000	18,000	18,000	18,000
Groundcover	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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant	O ₃	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	27	16	26
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	5 11/05/14	2 09/04/14	2 04/10/14 10/23/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015
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 M400 (087)	API M300 (093)	TEOM 1405 (079)
Date Established	01/01/1974	01/01/1974	09/01/2012
Classification	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FEM
-Appendix D Requirements			
Monitoring Type	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	5.8 meters	5.8 meters	6.1 meters
Airflow Arc	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A
Pollutant Sample Residence Time	7.3 seconds	7.3 seconds	N/A
Distance from Supporting Structure	2.5 meters	2.5 meters	2.5 meters
Distance from Obstructions	2.5 meters	2.5 meters	3 meters
Distance to Furnace Flue	None	None	None
Spacing from Trees	10 meters	10 meters	10 meters
Nearest Major Roadway A	Thomas	Thomas	Thomas
Distance and Direction to Road	66 meters, N	66 meters, N	62 meters, N
Traffic Count (ADT)	33,000	33,000	33,000
Nearest Major Roadway B	Miller	Miller	Miller
Distance and Direction to Road	32 meters, W	32 meters, W	35 meters, W
Traffic Count (ADT)	13,000	13,000	13,000
Groundcover	Paved	Paved	Paved

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

-General Information				
Pollutant	O₃	CO	PM₁₀	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	26	15	25	25
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	2 11/10/14	3 09/04/14	2 04/14/14 11/10/14	3 11/04/14 11/10/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	Bi-Weekly	Bi-Weekly
-Appendix C Requirements				
Sampler Make & Model	API M400 (087)	API M300 (093)	TEOM 1400 AB (079)	TEOM1405 DF (182)
Date Established	07/01/2000	07/01/2000	3/1/2012	3/1/2012
Classification	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FEM	FEM
-Appendix D Requirements				
Monitoring Type	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	4.4 meters	4.4 meters	2.7 meters	3.7 meters
Airflow Arc	360°	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A	N/A
Pollutant Sample Residence Time	4.5 seconds	4.5 seconds	N/A	N/A
Distance from Supporting Structure	2.5 meters	2.5 meters	2 meters	3 meters
Distance from Obstructions	2.5 meters	2.5 meters	8 meters	7 meters
Distance to Furnace Flue	None	None	None	None
Spacing from Trees	None	None	None	None
Nearest Major Roadway A	College Ave	College Ave	College Ave	College Ave
Distance and Direction to Road	11 meters, W	11 meters, W	11 meters, W	11 meters, W
Traffic Count (ADT)	Unknown	Unknown	Unknown	Unknown
Nearest Major Roadway B	Apache	Apache	Apache	Apache
Distance and Direction to Road	370 meters, N	370 meters, N	370 meters, N	370 meters, N
Traffic Count (ADT)	25,000	25,000	25,000	25,000
Groundcover	Gravel	Gravel	Gravel	Gravel

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

-General Information			
Pollutant	O₃	CO	PM₁₀
Sampling Schedule	Continuous	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	N/A
Any Proposal to Remove or Move Monitor?	Yes in 2014	Yes in 2014	Yes in 2014
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	27	16	23
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	4 10/09/14	2 09/12/14	2 01/03/14 07/03/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015
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 M400 (087)	API M300 (093)	TEOM 1400 AB (079)
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 Type	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	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	N/A
Pollutant Sample Residence Time	4.6 seconds	4.6 seconds	N/A
Distance from Supporting Structure	1.5 meters	1.5 meters	2.5 meters
Distance from Obstructions	3.5 meters	3.5 meters	3.5 meters
Distance to Furnace Flue	None	None	None
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	3.5 meters, S	3.5 meters, S	3.5 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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant	PM₁₀
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 Audits Performed Annually & Date of Last Two 2014 Checks for PM	2 05/12/14 11/12/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Bi-Weekly
-Appendix C Requirements	
Sampler Make & Model	TEOM 1400AB (079)
Date Established	04/01/2002
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	N/A
Pollutant Sample Residence Time	N/A
Distance from Supporting Structure	2.6 meters
Distance from Obstructions	None
Distance to Furnace Flue	None
Spacing from Trees	None
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 Statistical Area (MSA): 6200 Phoenix-Mesa

-General Information						
Pollutant	O ₃	CO	NO ₂	PM ₁₀	PM _{2.5}	PM _{2.5}
Sampling Schedule	Continuous	Continuous	Continuous	Continuous	1 in 12 days	Continuous
Analysis Method (filter samples only)	N/A	N/A	N/A	N/A	<i>As per 40 CFR Part 50, Appendix L</i>	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	N/A	Yes	Yes
-Appendix A Requirements						
# Precision Checks Performed Annually	27	27	27	26	30 (collocated QA samples)	26
# Accuracy Audits Performed Annually & Date of Last 2014 Check on Gaseous Analyzers & Last Two 2014 Checks for PM	4 11/18/14	2 12/02/14	4 09/09/14	2 02/12/14 08/26/14	2 05/15/14 12/23/14	4 02/12/14 08/26/14
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015	Submitted May 2015
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	Bi-Weekly	Every 6 weeks	Bi-Weekly
-Appendix C Requirements						
Sampler Make & Model	API M400 (087)	API M300 (093)	API M200 (099)	BAM 1020 (122) / TEOM 1400AB (079)	THERMO 2025	BAM 1020 (170)
Date Established	01/01/84	01/01/84	05/24/90	02/01/88	06/13/00	09/01/05
Classification	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM	FEM	FRM	FEM
-Appendix D Requirements						
Monitoring Type	Population Exposure	Population Exposure	Population Exposure	Population Exposure	Highest Concentration	Highest Concentration
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	N/A	2.3 meters	N/A
Probe Inlet Height	4.3 meters	4.3 meters	4.3 meters	2.7 meters	2.8 meters	3.6 meters

-General Information						
Pollutant	O₃	CO	NO₂	PM₁₀	PM_{2.5}	PM_{2.5}
Airflow Arc	360°	360°	360°	360°	360°	360°
Probe Sample Line Material	Teflon	Teflon	Teflon	N/A	N/A	N/A
Pollutant Sample Residence Time	4.4 seconds	4.4 seconds	4.4 seconds	N/A	N/A	N/A
Distance from Supporting Structure	1.3 meters	1.3 meters	1.3 meters	3 meters	2.6 meters	2.5 meters
Distance from Obstructions	None	None	None	None	11 meters	None
Distance to Furnace Flue	None	None	None	None	None	None
Spacing from Trees	None	None	None	None	None	None
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

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

-General Information	
Pollutant	PM₁₀
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	Shutdown June-August 2014
Is site suitable for comparison to PM _{2.5} NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	21
# Accuracy Audits Performed Annually & Date of Last Two 2014 Checks for PM	2 05/01/14 10/29/14
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2015
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Bi-Weekly
-Appendix C Requirements	
Sampler Make & Model	TEOM 1400AB (079)
Date Established	12/01/09
Classification	SPM
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Type	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	360°
Probe Sample Line Material	N/A
Pollutant Sample Residence Time	N/A
Distance from Supporting Structure	2.6 meters
Distance from Obstructions	None
Distance to Furnace Flue	None
Spacing from Trees	None
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

Reserved

To be completed following the public notice and comment period.

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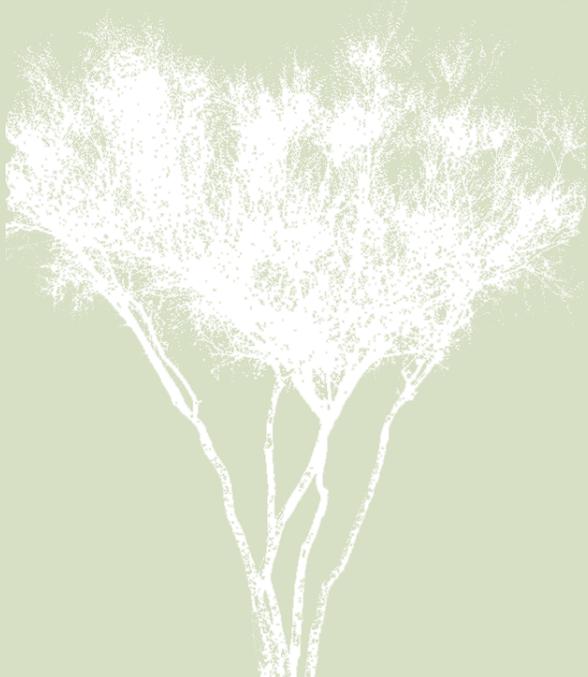
	2015												2016											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Prepare TIP/Regional Transportation Plan Analysis															▲									
Public Review/Comment															▲									
Public Hearing																▲								
AQTAC Recommendation																▲								
Management Committee Recommendation/ Consultation																	▲							
Regional Council Action																	▲							
Consultation/TIP Amendments																								▲
CONTRACT MANAGEMENT																								
Arizona Department of Administration Travel Reduction Program										▲												▲		
Maricopa County Trip Reduction Program										▲												▲		
RPTA Regional Rideshare and Telework Program										▲												▲		
EIGHT-HOUR OZONE PLAN FOR 2008 STANDARD 0.075 PPM (Moderate Area Attainment Date - July 20, 2018)																								
Obtain Revised Final 2011 Periodic Emissions Inventory from MCAQD								▲																
Obtain Final 2014 Periodic Emissions Inventory from MCAQD																				▲				
Reasonably Available Control Technology from MCAQD																							▲	
Reasonably Available Control Measure Analysis (Sept-Nov 2015)										▲														
Draft Modeling Protocol Document										▲														
Finalize Modeling Protocol Document										▲														
Evaluation of Existing Measures (Federal, State, and Local)											▲													
Suggested List of Measures (if necessary)															▲									
Commitments to Implement Measures (if necessary)																	▲							

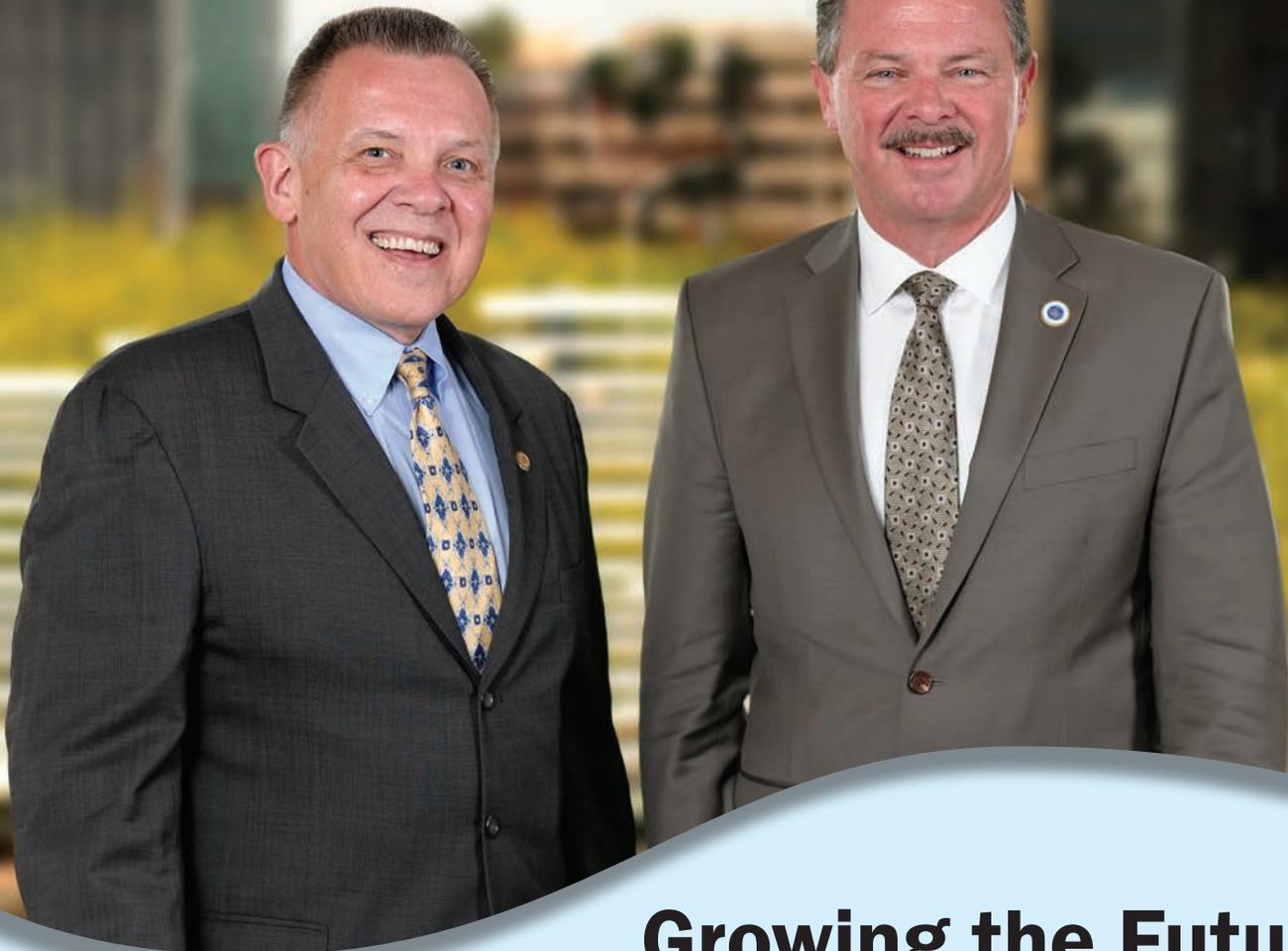
	2015												2016											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DEVELOPMENT AND IMPLEMENTATION OF MAG MOVESLINK2014																								
Develop MAG MOVESLINK2014			▲																					
Quality Assurance Check			▲																					
FHWA Review/Comment				▲																				
Implement/Apply MAG MOVESLINK2014					▲																			▲
2014 PERIODIC EMISSIONS INVENTORY FOR PM-10																								
Compile Model Input Data								▲																
Implement Onroad/Nonroad/Airport/Biogenic Models Runs									▲															
Develop 2014 Periodic Emissions Inventory Documents										▲														
Maricopa County Review/Comment											▲													
Submit MOVES2014 Inputs to EPA												▲												
Submit 2014 Periodic Emissions Inventory and Documents to MCAQD												▲												
Obtain Final 2014 Periodic Emissions Inventory from MCAQD																				▲				



Growing the Future Through Collaboration, Innovation

FY 2015 Annual Report



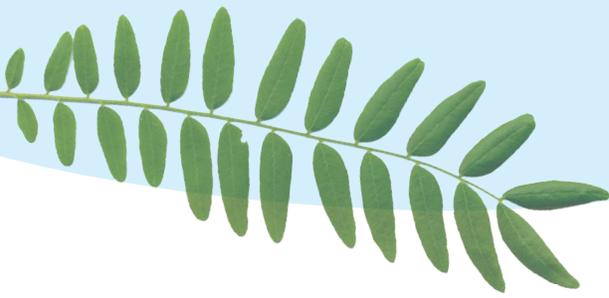


Mayor Michael LeVault
Youngtown, Outgoing Chair
Mayor W. J. "Jim" Lane
Scottsdale, Incoming Chair

Growing the Future Through Collaboration, Innovation

As elected leaders in this region, we are proud to serve as members of the Maricopa Association of Governments. MAG is principally known as the planning agency for the Regional Freeway System. Since 1985, working with the Arizona Department of Transportation (ADOT), we have seen the completion of approximately 180 miles of freeway. This freeway system is the economic heartbeat of our region and the state. This has been core business at MAG. The great recession taught us that we need to be nimble to succeed.

Being nimble and having the ability to change is vital to being a healthy organization. Since MAG was formed in 1967, it has consistently changed to adapt to the needs of the region. While MAG has changed in significant ways, one of its founding principles has not: to ensure "through cooperation and the pooling of common resources, maximum efficiency and economy in governmental operations, which will provide every citizen with the utmost value for every dollar."



A major change at MAG has been the formation of the Economic Development Committee (EDC). This decision was made during the height of the recession. MAG has repurposed its tools for transportation planning to provide better data analytics to the economic development departments throughout the region, to assist in growing the economy.

We continually search for innovative solutions to find added value in the activities we undertake. One recent example was using the fiber owned by the cities through the MAG Regional Community Network to enhance security for Super Bowl XLIX in Glendale. The network was developed utilizing federal dollars to assist cities with traffic control, but MAG recognized the value in the extra bandwidth, and applications were expanded to include 9-1-1 operations and public safety.

In the transportation arena, MAG, working with ADOT, analyzed “cost risk” as assigned to various projects (money that is set aside in the budget for unknown contingencies). The MAG/ADOT team identified approximately \$106.7 million in risk that could be retired based on the progress of the projects. That funding can now be budgeted for future projects. MAG will continue to work with ADOT to rigorously review other project budgets to identify more savings that can be used for new or accelerated projects.

The underlying concept of MAG is that local governments (cities, towns, counties and Native American Indian communities), which are closest to the people, should have the primary responsibility for addressing issues that require action on a regional basis. MAG has been recognized for bringing many different parties to the table to ensure all voices are heard. The MAG Economic Development Committee and Transportation Policy Committee are examples of this collaborative process.

In this report, you will learn about the many ways MAG is serving the people of this region. We will describe just a few of the accomplishments made over the past year. Our hope is to demonstrate MAG’s many roles and responsibilities in the region and how we continue to look for ways to partner with the public, other government agencies, and the business community to make our vibrant, dynamic region even better as we grow into the future.





About MAG

Central Station with the MAG building in the background.

The Maricopa Association of Governments (MAG) is a Council of Governments and the designated Metropolitan Planning Organization for regional planning in the greater Phoenix region. Established in 1967, MAG provides regional planning and policy decisions in the areas of Transportation, Environmental Programs, and Human Services, with support from its Administration, Communications, Fiscal Services, Human Resources, Information Services and Information Technology divisions. A recent focus for MAG has also been in the area of Economic Development.

MAG consists of 27 incorporated cities and towns, three Native American Indian Communities, Maricopa County, and portions of Pinal County.

The Regional Council serves as the governing board and includes representatives from the above agencies, as well as the Arizona Department of Transportation and the Citizens Transportation Oversight Committee. MAG's policy-making structure includes the Regional Council, the Executive Committee, Transportation Policy Committee, Economic Development Committee, Management Committee, and a number of advisory and technical advisory committees.





Regional Council



Robin Barker
Vice Mayor, Apache Junction



Kenneth Weise
Mayor of Avondale



Jackie Meck
Mayor of Buckeye



Mike Farrar
Councilmember, Carefree



Dick Esser
Councilmember, Cave Creek



Jay Tibshraeny
Mayor of Chandler



Roc Arnett
CTOC Chair



Lana Mook
Mayor of El Mirage



Tom Rankin
Mayor of Florence



President Ruben Balderas
Fort McDowell Yavapai Nation



Linda M. Kavanagh
Mayor of Fountain Hills



Chuck Turner
Mayor of Gila Bend



Governor Stephen Roe Lewis
Gila River Indian Community



John Lewis
Mayor of Gilbert



Jerry Weiers
Mayor of Glendale



Georgia Lord
Mayor of Goodyear



Rebecca Jimenez
Mayor of Guadalupe



Thomas Schoaf
Mayor of Litchfield Park



Christian Price
Mayor of Maricopa



Denny Barney
Supervisor, Maricopa County



John Giles
Mayor of Mesa



Michael Collins
Mayor of Paradise Valley



Cathy Carlat
Mayor of Peoria



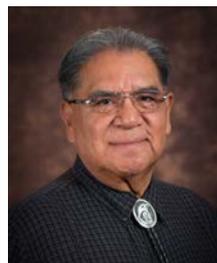
Greg Stanton
Mayor of Phoenix



Todd House
Supervisor, Pinal County



Gail Barney
Mayor of Queen Creek



President Delbert Ray
Salt River Pima-Maricopa Indian Community



Joseph E. La Rue
State Transportation Board



Jack Sellers
State Transportation Board



W. J. "Jim" Lane
Mayor of Scottsdale



Sharon Wolcott
Mayor of Surprise



Mark Mitchell
Mayor of Tempe



Adolfo F. Gamez
Mayor of Tolleson



John Cook
Mayor of Wickenburg



Michael LeVault
Mayor of Youngtown



Downtown Phoenix, Central Avenue.

Growing the Region's Economy

Think back to 2008. Our economy was in a tailspin—the housing market had crumbled, and the region faced the fact that 65,000 homes were experiencing foreclosure or the threat of foreclosure. As a regional agency, MAG knew it couldn't turn its back on an issue that was drastically affecting so many of our residents.

With transportation serving as a backbone for the economy, MAG recognized that it had a role to play in bringing the best minds to the table to brainstorm solutions for diversifying the economy. The Economic Development Committee (EDC) was born, with a mission to “develop an opportunity-specific and action-oriented plan” that advances infrastructure in the MAG region—especially transportation infrastructure—to further economic development. The EDC includes local elected officials, business and education representatives, and a representative from the Arizona Department of Transportation.

Innovation has been at the heart of MAG's economic development initiatives, bringing together numerous stakeholders from governments, private businesses, economic development organizations, universities,

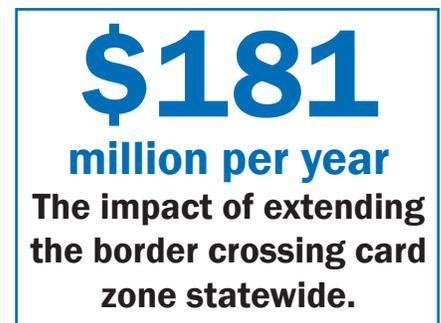
and state and regional agencies to identify potential opportunities.

A major accomplishment this year was the launch of ConnectBIEN.com, a free, first-of-its-kind website that allows companies in Arizona, Mexico and Canada to directly connect with each other using online technology instead of travel. “BIEN,” an acronym for “Building an International Economic Network,” is available in English, Spanish and French. Its purpose is to link businesses to improve trade opportunities and to help them better connect to their supply chain and distribution networks.

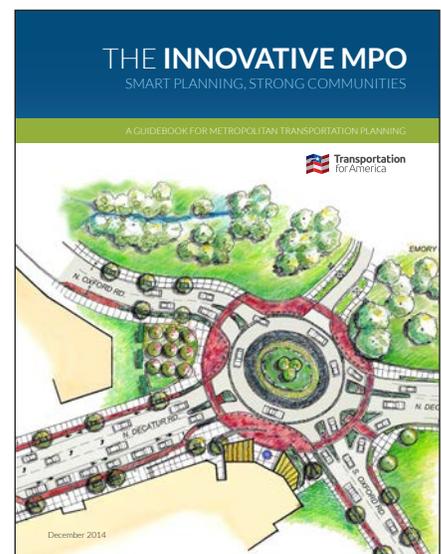


Other activities to support economic development have included:

- The creation of GreaterPhoenixRising.com, a website focused on regional data of interest for companies looking to relocate or expand in the greater Phoenix area.
- Financial support for a trade office in Mexico City.
- The creation of the Ari-Son Megaregion to advance “projects of local and regional significance,” and for continuing initiatives that promote dialogue and collaboration among local and regional leaders in Arizona and Sonora.
- Efforts promoting the extension of the border crossing card zone from 75 miles to the entire state, which would allow pre-cleared Mexican visitors to spend their tourism dollars throughout Arizona.
- Partnerships with the Canada Arizona Business Council. Between residential and commercial properties, Canadians have invested \$12 billion in our region.
- Use of MAG’s incredible repository of data to create online mapping tools to help identify economic conditions by geographic area, including employment trends, workforce availability, demographics—even performing and underperforming schools. These tools are helping MAG focus its economic development efforts.



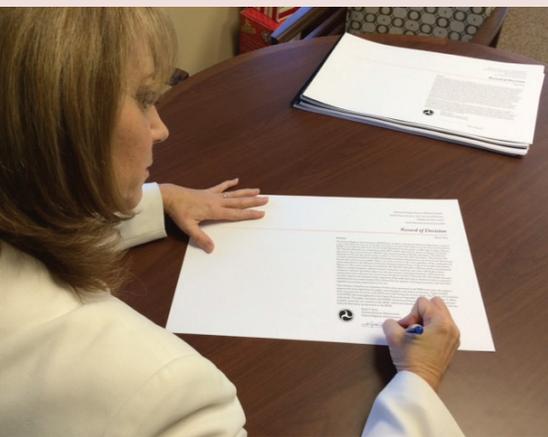
MAG’s economic development activities were highlighted in *The Innovative MPO*, a national publication published by Transportation for America, which cited MAG as a national leader and model for other metropolitan planning organizations.





Aerial photo of Loop 303 construction.

Growing the Future Through Infrastructure



The Loop 202 South Mountain Freeway receives final federal approval.

The past year marked a significant transportation milestone for MAG, when the Loop 202 South Mountain Freeway received final federal approval, enabling the region to move ahead with the last critical piece of our loop freeway system. This will significantly improve traffic movement between the southeast and southwest areas of the Valley and help reduce congestion on Interstate 10.

Another major freeway opened this year with the 17-mile completion of Loop 303 from I-10 to just below Grand Avenue—including a freeway interchange connecting I-10 to Loop 303.

MAG embarked on a new study to create a master plan for the Interstate 10/Interstate 17 “spine” corridor—a 35-mile segment used by more than 40 percent of daily freeway traffic. MAG continued to involve the public in exciting new ways to hear their thoughts on improving Valley transportation, including an online survey.



HOV 2+ ONLY
2 OR MORE PERSONS
PER VEHICLE

The MAG region has the
4th
largest HOV lane
network in the U.S.

MAG continued to use technology to make the region’s roadways safer and more efficient. For example, MAG helped fund a Department of Public Safety officer at the Arizona Department of Transportation’s traffic operations center, with the goal of clearing freeway crashes more quickly to reduce congestion and save lives. MAG even used its Regional Community Network camera-sharing capabilities to make the Super Bowl safer.

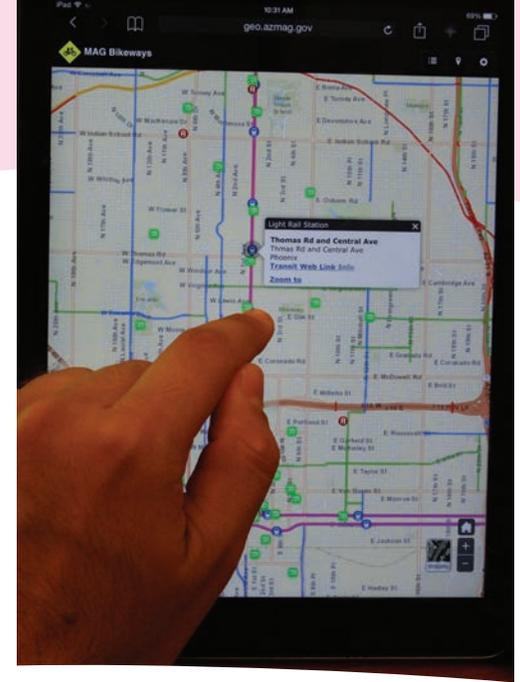
Carpooling to Cardinals football games and other West Valley events got easier, with the completion of new direct High Occupancy Vehicle (HOV) ramps allowing commuters to directly exit from the Loop 101 Agua Fria Freeway to Maryland Avenue.

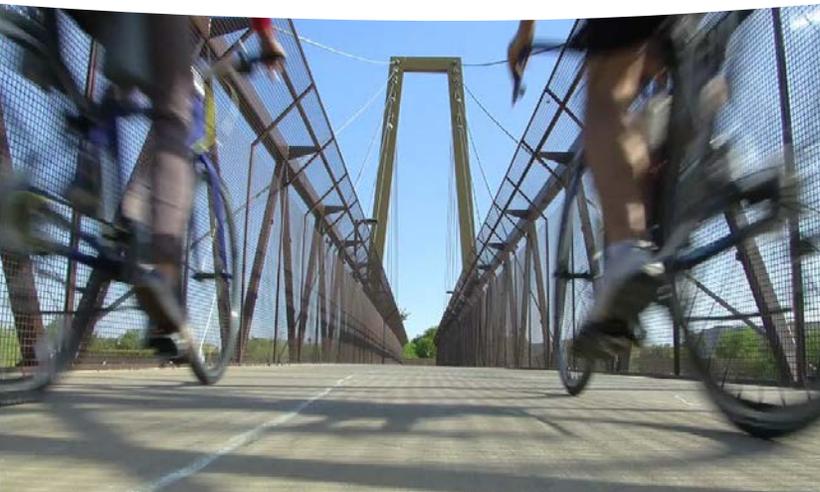
The region saw significant progress in two light rail extension projects—with more than two-thirds of the Mesa extension to Mesa Drive completed and the laying of the first track for the Northwest Phoenix alignment. Transit ridership continued to be strong, with 72 million boardings (bus and light rail) in FY 2014.

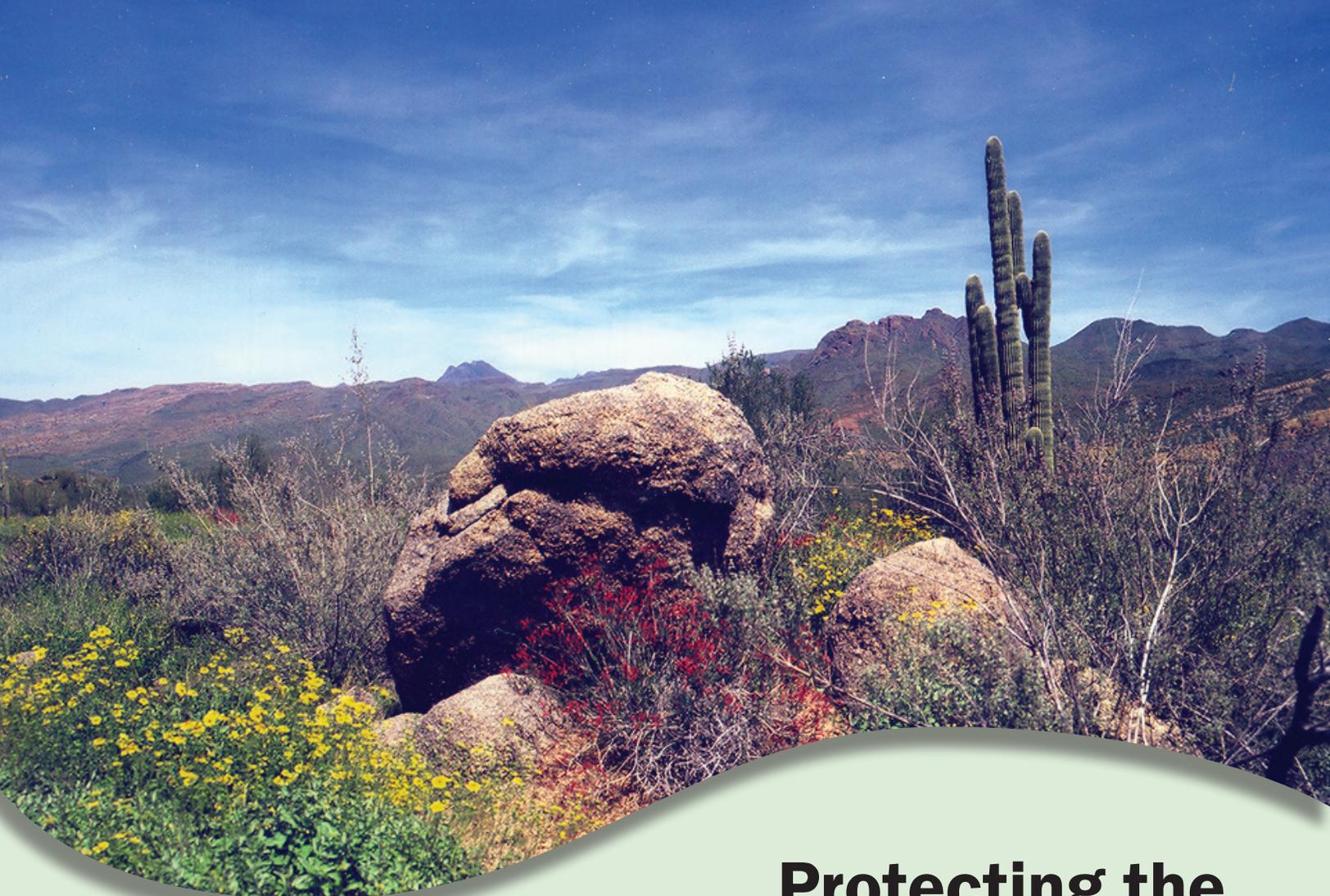
Bicyclists were another important part of the mix—MAG upgraded its online bike map to make finding the perfect bike trail a click away. Using a smart phone, computer, or tablet, bicyclists can access the map at azmag.gov/bike and quickly search for the nearest trail, bike lanes, canal routes, paved paths, crossings—even bike rental or repair shops. Photos and videos are available to give more information about navigating the bike trail system.

These are just a few of the transportation projects that were undertaken this year. In all, the Regional Transportation Plan outlined under Proposition 400 is now more than 50 percent complete, including the opening of 375 general purpose lane miles and 360 HOV lane miles, for a total of 1,080 completed lane miles under Prop 400.









Protecting the Environment

Developing air quality plans to protect our environment and our health is a core mission at MAG. There was great news on the air quality front this year, when the U.S. Environmental Protection Agency (EPA) approved the air quality plan that has resulted in Maricopa County achieving compliance with the health-based standards for dust, or PM-10.

This plan is known as the MAG Five Percent Plan for PM-10, because its goal is to reduce coarse particulates at least five percent each year. The development of the plan was a collaborative effort by MAG, the Arizona Department of Environmental Quality, the Maricopa County Air Quality Department, and other stakeholders. The plan includes many of the most stringent dust control measures in the country, and the collective efforts have resulted in dramatic improvements in the concentration of dust in the Valley.

MAG continues to make headway in the area of ozone pollution, while at the same time monitoring new federal proposals to tighten the ozone standards. MAG received good news this year when the EPA



Carbon monoxide levels
in the region are
67%
BELOW
the national standard.



issued a notice of federal approval to redesignate the region to attainment status for the 1997 ozone standard of .08 parts per million. There have been no violations in our region of the eight-hour or the one-hour ozone standards since 1996, and no violations of the 1997 eight-hour ozone standard since 2004. However, in 2008, the EPA tightened the ozone standard to .075 parts per million, and in 2012 redesignated the Maricopa region for that standard to a Marginal Area. The EPA has recently proposed a stricter range for ozone of .065 to .070 parts per million for the standard, which would pose an attainment challenge for our region.



MAG received additional good news this year when it learned that those clunky “vapor recovery” nozzles at the gas pump will soon be going away. The vapor recovery nozzles were originally designed to prevent the escape of harmful ozone emissions, but they have outlived their usefulness as modern-day vehicles now come equipped with their own vapor recovery systems. The nozzles have been in place in the region since 1992. They will be phased out by 2018.



As the designated regional water quality management planning agency for the Maricopa County area, MAG develops an areawide water quality management plan as required under Section 208 of the Water Pollution Control Act of 1972. MAG is currently working with its partners to identify opportunities for making the 208 Water Quality Management Plan process more efficient and the region more globally competitive.





An intergenerational dance at the Mesa Arts Center. The Arizona Age-Friendly Network supports communities in connecting older adults with people of all ages.

Human Services *Connecting People* *Connecting Resources* *Connecting Communities*

MAG continues to partner with leaders from all walks of life to strengthen communities and support people. The agency has been working on numerous initiatives to help people remain safe from domestic violence, to find access to homeless services, and to remain connected with meaningful opportunities to participate in their communities.

Domestic violence abusers could face swifter justice as a result of collaborative efforts funded through a grant awarded to MAG in early 2015. MAG received a U.S. Department of Justice STOP (Services* Training* Officers* Prosecutors) grant through the Governor's Office for Children, Youth and Families to work with 30 partners, including law enforcement representatives, prosecutors, and victim advocates. The collaborations will address issues related to the criminal justice system's response to domestic violence, with the goal of holding abusers accountable and keeping victims safe.





The MAG Regional Council signs a resolution recognizing October as Domestic Violence Awareness month.

MAG continues to work regionally to develop strategies to end homelessness and ensure people have appropriate access to resources. MAG is working with numerous partners to help homeless people access services in a more timely fashion and reduce the amount of time they spend on the streets. Improvements include coordinating the process for accessing shelter and services and improving how information is shared. MAG also oversees an annual street count in which hundreds of volunteers count and survey people experiencing homelessness. This effort is critical to securing millions of dollars in Continuum of Care Program homeless assistance funding from the U.S. Department of Housing and Urban Development (HUD) each year. Since 1999, the region has been awarded \$295 million in funding to provide housing and services for people experiencing homelessness.

MAG continues to evolve as a national leader in supporting older adults and connecting people of all generations with each other. MAG received grants totaling nearly \$200,000 from local and national philanthropies to support MAG and the Arizona Age-Friendly Network. The Greater Phoenix region is one of only four “Best Intergenerational Communities” nationwide as recognized by the MetLife Foundation and Generations United. In addition, Virginia G. Piper Charitable Trust recognized MAG for its efforts with a 2014 Piper Trust Encore Prize for “Exceptional Organizations.” The prize included a grant for \$5,000 to support MAG in continuing to go above and beyond its traditional role as a regional planning agency to better connect older adults with people of all ages.

With the support of many partners statewide, MAG continues to address key issues, such as accessing transportation resources, providing heat relief to homeless people during the hot summer, and building the community connections necessary to help people live where they have friends, interests, and a sense of purpose. These connections improve the quality of life for all residents and strengthen the vibrancy of the region.

700,000
 The number of
 people aged 65+ in
 our region by 2020.





Input is collected during one of three public meetings on the Spine Study.

Communicating With Clarity

Understanding the priorities and preferences of the public when making transportation decisions is a critical component of MAG's planning process. Getting this input can be challenging due to the fact that most people live very busy lives. That is why MAG utilizes a variety of communication methods, including public events, small and large group presentations, websites, social media, and videos, to provide information and encourage feedback.

MAG also works to ensure that the input received includes participation by all residents of our region, including people who are protected under Title VI of the Civil Rights Act of 1964 and subsequent laws, such as the Americans With Disabilities Act and age discrimination safeguards. For example, MAG frequently works with Valley Metro staff to provide information and training to people with disabilities to help them better understand and utilize the public transit system in the region.

The latest Transportation Policy Committee e-update is available Site Index >>

MARICOPA ASSOCIATION OF GOVERNMENTS

Member Agencies Regional Council Committees Projects	Transportation Environmental Programs Human Services Information Services	Administration Communications Information Technology Fiscal Services
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Commuter Rail

Get on board for a regional rail future

Conceptual Photo Simulation of MAG Region Commuter Rail System

Interactive Maps

Create demographic and employment maps with our online mapping and reporting tool.

Building an International Economic Network

Add your business profile. Search for companies. Grow your business.

Greater Phoenix Rising

The Greater Phoenix Rising website serves as an information center for growing businesses.

MAG Publications

MAG produces numerous publications of benefit to local agencies and businesses.

The Maricopa Association of Governments (MAG) is a Council of Governments (COG) that serves as the regional agency for the metropolitan Phoenix area. When MAG was formed in 1967, the elected officials recognized the need for long-range planning and policy development on a regional scale. They realized that many issues such as transportation, air quality and human services affected residents beyond the borders of their individual jurisdictions.

MAG was founded in the spirit of cooperation. MAG members believe that by uniting, they can solve common problems, take an active role in long-range regional issues and address concerns that affect all of the communities.

MAG is the regional air quality planning agency and metropolitan planning organization for transportation for all jurisdictions in Maricopa County, including the Phoenix urbanized area and the contiguous urbanized area in Pinal County, including the Town of Florence and City of Maricopa. MAG has also been designated by the Governor to serve as the principal planning agency for the region in a number of other areas, including water quality and solid waste management. In addition, through an Executive Order from the Governor, MAG develops population estimates and projections for the region.

The Spine Study: Interstate-10 and Interstate-17 Corridor Master Plan

The Maricopa Association of Governments, in partnership with the Federal Highway Administration and the Arizona Department of Transportation, launched The Spine Study to develop a Corridor Master Plan for the Interstate 10 and Interstate 17 corridor. This corridor is referred to as the "Spine," because it serves as the backbone for transportation in the metropolitan Phoenix area. In fact, the corridor handles more than 40 percent of all daily freeway traffic in the region. Click here to learn more about the Interstate 10 and Interstate 17 corridor master plan.




1,700
Online surveys received on the I-10/I-17 "Spine" Study.



Additional examples of outreach this year include the creation of an online survey utilizing the Metroquest interactive survey tool to obtain priorities and preferences as part of the Interstate 10/Interstate 17 Corridor Master Plan, or "Spine Study." The corridor is called the "Spine" because it serves as the backbone of the regional freeway system, with more than 40 percent of daily freeway travel accessing the corridor.

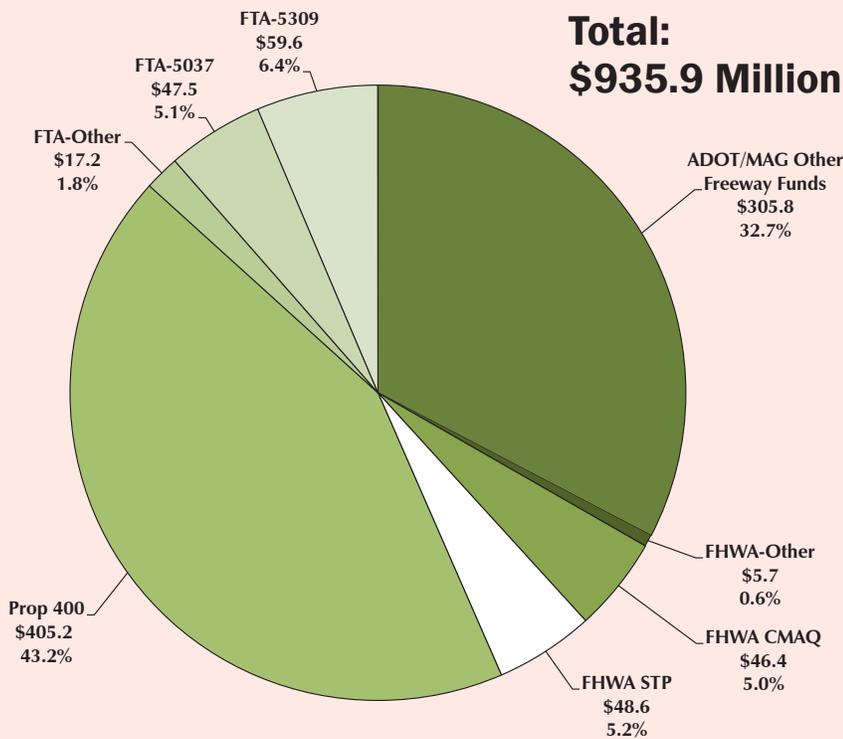
A number of videos were produced, including an informational video on MAG's efforts to allow Mexican visitors to travel to the entire state and a video detailing how to access various bike trails in the region. MAG also produced a number of training videos, including one for law enforcement regarding domestic violence procedures, a video for school crossing guards to help keep Valley kids safe, and an instructional video for volunteers participating in the homeless street count.

If you would like to learn more about MAG programs or activities, please visit the website azmag.gov, follow MAG on Twitter at twitter.com/MAGregion, or friend MAG on Facebook. You can see MAG videos on YouTube at youtube.com/MAGcommunications.



Financials

Cooperatively Developed Funding (in Millions)

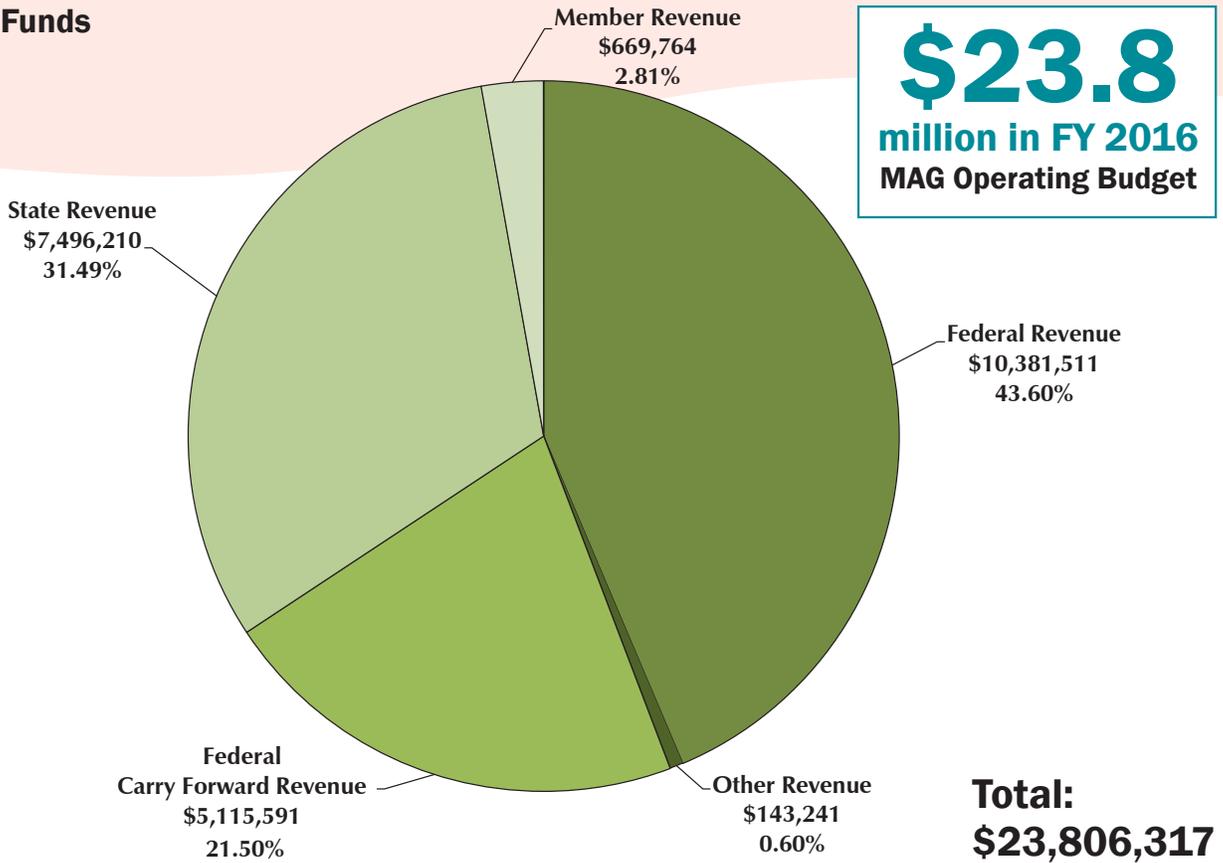


Funding for MAG’s programs and activities comes from a variety of sources, with federal and state funding comprising the principal revenue source. Membership dues and special assessments—which are based on population and assessed from each member agency—provide another source of revenue to support MAG’s regional activities.

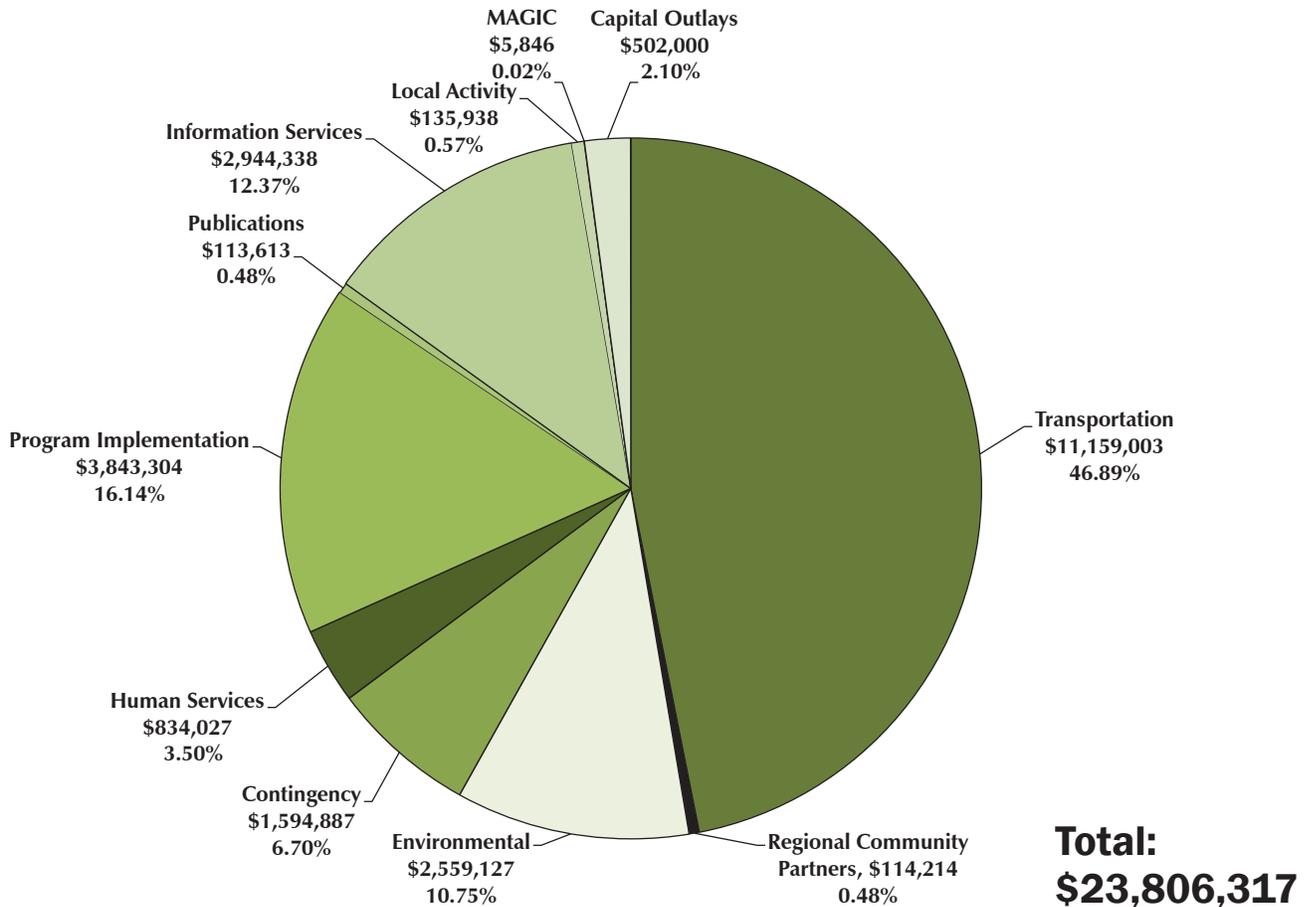
MAG plans for more than \$935.9 million in total regional funding, including funding for the freeway program.

MAG’s FY 2016 Unified Planning Work Program and Annual Budget is \$32.3 million, which includes an operating budget of about \$23.8 million. The difference is for carry forward consulting contracts and funding for other agencies with pass-through agreements.

Source of Funds



How MAG Uses the Funds by Program





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