

October 18, 2012

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Oddvar Tveit, Tempe, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Thursday, October 25, 2012 - 1:30 p.m.  
MAG Office, Suite 200 - Saguaro Room  
302 North 1<sup>st</sup> 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 Tveit 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 July 26, 2012 Meeting Minutes

4. Evaluation of Proposed FY 2015, 2016, and 2017 CMAQ Projects for the FY 2014-2018 MAG TIP

An evaluation of proposed FY 2015, 2016, and 2017 Congestion Mitigation and Air Quality Improvement (CMAQ) projects submitted for the FY 2014-2018 MAG Transportation Improvement Program (TIP) has been conducted. The deadline for submitting the projects was September 19, 2012. The evaluation includes emission reductions and cost-effectiveness information.

In addition, a list of Air Quality Projects is also provided. It is requested that the Air Quality Projects be ranked and forwarded to the Transportation Review Committee. Please refer to the enclosed material.

2. For information.

3. Review and approve the July 26, 2012 meeting minutes.

4. For information, discussion, and recommendation to forward the evaluation of proposed FY 2015, 2016, and 2017 CMAQ projects for the FY 2014-2018 MAG Transportation Improvement Program to the MAG Transportation Review Committee and modal committees for use in prioritizing projects. In addition, rank the Air Quality Projects to be forwarded to the MAG Transportation Review Committee.

5. Evaluation of Proposed PM-10 Certified Street Sweeper Projects for FY 2013 CMAQ Funding

An evaluation of proposed PM-10 Certified Street Sweeper Projects for Fiscal Year 2013 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds has been conducted. The deadline for submitting projects was September 19, 2012.

The FY 2013 Unified Planning Work Program and Annual Budget and FY 2011-2015 MAG Transportation Improvement Program contain \$900,000 in FY 2013 CMAQ funding to encourage the purchase and utilization of PM-10 certified street sweepers. An additional \$346,973 in CMAQ funding is available from sweeper projects that have been requested to be deleted and from savings on sweepers that have cost less than anticipated, for a total amount of \$1,246,973. A minimum local cash match of 5.7 percent is required.

Six projects requesting federal funds were evaluated. The MAG Air Quality Technical Advisory Committee is requested to recommend a prioritized list of proposed PM-10 Certified Street Sweeper Projects for FY 2013 CMAQ funding to the MAG Management Committee. Please refer to the enclosed material.

6. Evaluation of Proposed PM-10 Paving Unpaved Road Projects for FY 2015, 2016, and 2017 CMAQ Funding

An evaluation of proposed PM-10 Paving Unpaved Road Projects for Federal Fiscal Year 2015, 2016, and 2017 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds has been conducted. The deadline for submitting projects was September 19, 2012.

For FY 2015, 2016, and 2017, CMAQ funding of \$5,455,468, \$5,746,340, and \$6,052,521, respectively is available for projects. Twelve projects requesting federal funds were evaluated. It is requested that the Paving Unpaved Road Projects be ranked and

5. For information, discussion, and recommendation of a prioritized list of proposed PM-10 Certified Street Sweeper Projects for FY 2013 CMAQ funding to the MAG Management Committee.

6. For information, discussion, and recommendation to rank the Proposed PM-10 Paving Unpaved Road Projects for FY 2015, 2016, and 2017 CMAQ funding and forward the ranking to the MAG Transportation Review Committee.

forwarded to the Transportation Review Committee. Please refer to the enclosed material.

7. Update on PM-10 Exceedances and Exceptional Events

The region needs at least three years of clean data as measured by the monitors for EPA to determine that the PM-10 standard has been met (2010, 2011, and 2012). It is critical for the MAG member agencies, business and industry, and the public to maintain aggressive efforts to prevent exceedances at the monitors and throughout the region. To date, there have been thirteen exceedance days in 2012. The Arizona Department of Environmental Quality is working on the 2011 and 2012 exceptional events documentation with assistance from consultants and staff from Maricopa County and MAG. Also on September 6, 2012, EPA approved the first package of exceptional events for July 2 through July 8, 2012. An update will be provided. Please refer to the enclosed material.

8. Status Report on Eight-Hour Ozone Monitoring Data

The Maricopa ozone nonattainment area is currently classified as a Marginal Area for the eight-hour ozone standard established by EPA in 2008 (0.075 parts per million). The region has a December 31, 2015 attainment date. A status report on the ozone monitoring data will be provided.

9. Call for Future Agenda Items

The next meeting of the Committee has been tentatively scheduled for **Tuesday, November 27, 2012 at 1:30 p.m.** The Chairman 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, July 26, 2012  
MAG Office  
Phoenix, Arizona

MEMBERS ATTENDING

- |   |  |
|---|--|
| Oddvar Tveit, Tempe, Chairman                     | Steve Trussell, Arizona Rock Products Association                            |
| # Elizabeth Biggins-Ramer, Buckeye, Vice Chair    | * Amy Bratt, Greater Phoenix Chamber of Commerce                             |
| Kristen Sexton, Avondale                          | # Amanda McGennis, Associated General Contractors                            |
| # Jim Weiss, Chandler                             | * Spencer Kamps, Homebuilders Association of Central Arizona                 |
| # Jamie McCullough, El Mirage                     | * Mannie Carpenter, Valley Forward   |
| Jessica Koberna, Gilbert                          | * Kai Umeda, University of Arizona Cooperative Extension                     |
| Wade Ansell for Doug Kukino, Glendale             | Beverly Chenausky, Arizona Department of Transportation                      |
| * Cato Esquivel, Goodyear                         | Trevor Baggione for Diane Arnst, Arizona Department of Environmental Quality |
| # Greg Edwards for Scott Bouchie, Mesa            | * Environmental Protection Agency  |
| William Mattingly, Peoria                         | * Jo Crumbaker, Maricopa County Air Quality Department                       |
| Philip McNeely, Phoenix                           | Michelle Wilson, Arizona Department of Weights and Measures                  |
| Tim Conner, Scottsdale                            | * Ed Stillings, Federal Highway Administration                               |
| # Antonio DeLaCruz, Surprise                      | * Judi Nelson, Arizona State University                                      |
| * Mark Hannah, Youngtown                          | # Christopher Horan, Salt River Pima-Maricopa Indian Community               |
| Ramona Simpson, Queen Creek                       |  |
| * American Lung Association of Arizona            |  |
| Kristin Watt, Salt River Project                  |  |
| Rebecca Hudson, Southwest Gas Corporation         |  |
| * Mark Hajduk, Arizona Public Service Company     |  |
| * Gina Grey, Western States Petroleum Association |  |
| * Dawn M. Coomer, Valley Metro/RPTA               |  |
| * Dave Berry, Arizona Motor Transport Association |  |
| Jeannette Fish, Maricopa County Farm Bureau       |  |

- \*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    | Mitch Wagner, Maricopa County Department of Transportation |
| Dean Giles, Maricopa Association of Governments     | Scott DiBiase, Pinal County Air Quality                    |
| Taejoo Shin, Maricopa Association of Governments    | Wendy Crites, Salt River Project                           |
| Matt Poppen, Maricopa Association of Governments    | Sam Brown, City of Scottsdale                              |
| Julie Hoffman, Maricopa Association of Governments  | Agustin Figueroa, Arizona Rock Products Association        |
| Kara Johnson, Maricopa Association of Governments   | Rusty Van Leuven, Arizona Department of Agriculture        |
| Adam Xia, Maricopa Association of Governments       | Heather Hodgman, City of Apache Junction                   |
| Feng Liu, Maricopa Association of Governments       | Tom Elsren, Maricopa County Air Quality Department         |
| Cathy Arthur, Maricopa Association of Governments   |  |
| Randy Sedlacek, Maricopa Association of Governments |  |

1. Call to Order

A meeting of the Maricopa Association of Governments (MAG) Air Quality Technical Advisory Committee (AQTAC) was conducted on July 26, 2012. Oddvar Tveit, City of Tempe, Chair, called the meeting to order at approximately 1:30 p.m. Jim Weiss, City of Chandler; Jamie McCullough, City of El Mirage; Greg Edwards, City of Mesa; Amanda McGennis, Associated General Contractors; Christopher Horan, Salt River Pima-Maricopa Indian Community; Elizabeth Biggins-Ramer, Town of Buckeye; and Antonio DeLaCruz, City of Surprise, attended the meeting via telephone conference call.

2. Call to the Audience

Mr. Tveit stated that according to the MAG public comment process, members of the audience who wish to speak are requested to fill out comment cards, which are available on the tables adjacent to the doorways inside the meeting room. Citizens are asked not to exceed a three minute time period for their comments. Public comment is provided at the beginning of the meeting for nonagenda items and nonaction agenda items. Mr. Tveit noted that no public comment cards had been received.

3. Approval of the April 26, 2012 Meeting Minutes

The Committee reviewed the minutes from the April 26, 2012 meeting. William Mattingly, City of Peoria, moved and Tim Connor, City of Scottsdale, seconded, and the motion to approve the April 26, 2012 meeting minutes carried unanimously.

4. Update on the MAG 2012 Five Percent Plan for PM-10

Lindy Bauer, Maricopa Association of Governments, provided an update on the MAG 2012 Five Percent Plan for PM-10. She stated that the Committee recommended adoption of the plan at the April 26, 2012 meeting. On May 23, 2012, the MAG Regional Council unanimously adopted the MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area. Ms. Bauer indicated that copies of the plan were hand delivered to the Arizona Department of Environmental Quality (ADEQ) on May 23, 2012 after the MAG Regional Council adopted the plan. She noted that a copy was transmitted to the Environmental Protection Agency (EPA), as well, on May 23, 2012. Ms. Bauer stated that on May 25, 2012, ADEQ officially submitted the MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area to EPA.

Ms. Bauer reviewed the EPA completeness finding on the plan. She stated that EPA made the completeness finding on July 20, 2012 which stops the sanctions clocks that began when the 2007 Five Percent Plan for PM-10 was withdrawn. Ms. Bauer commented that this is good news for the region and a credit to the Air Quality Technical Advisory Committee. She noted that the next step is for EPA to take action on the plan. The EPA must take action on the MAG 2012 Five Percent Plan for PM-10 by February 14, 2013. Ms. Bauer added that an approval action is needed to avoid a Federal Implementation Plan. She discussed that 2012 is the attainment year and the importance of avoiding a violation at the air quality monitors. The region will need three years of clean data, years 2010, 2011, and 2012, for EPA to approve the plan and say that the PM-10 standard has been met. A copy of the completeness finding letter was provided to the Committee.

5. Update on PM-10 Exceedances and Exceptional Events

Ms. Bauer discussed the PM-10 exceedances and exceptional events. She stated that there have been nine days of PM-10 exceedances in 2012. Ms. Bauer indicated that most of the exceedances appear to be exceptional events. She noted that ADEQ is continuing to work on the documentation required for the 2011 exceptional events. Ms. Bauer mentioned that ADEQ now has consultant assistance in compiling the exceptional event documentation. She stated that MAG staff is assisting ADEQ and will continue to provide support in the compilation of exceptional event documentation. Ms. Bauer discussed that the exceptional event documentation preparation and submittal to EPA is critical. She noted that EPA concurrence with the exceptional event documentation is needed to show three years of clean data. Ms. Bauer mentioned that there were no violating monitors in 2010. She indicated that 2011 had 21 days of exceptional events and that the extensive exceptional events documentation for events dating July 2, 2011 to July 8, 2011 has been submitted to EPA by ADEQ. Ms. Bauer stated that ADEQ is working on the documentation for the remaining exceptional event days in 2011. She asked the member agencies and private sector to help the region stay clean at the monitors and throughout the region.

Mr. Tveit inquired if the number of exceptional events in 2012 is more than usual. Ms. Bauer responded that meteorology is a big factor with exceptional events. She noted that 2010 was a clean year, yet 2011 had the epic dust storm and many other exceptional events that lasted until November 2011. She noted the exceptional events in 2012. Ms. Bauer mentioned that 2011 was an unusual year due to the size and number of dust storms, and added that meteorology and drought conditions contribute to the number of events.

6. Revised Draft EPA Exceptional Events Guidance

Matt Poppen, Maricopa Association of Governments, presented the Revised Draft EPA Exceptional Events Guidance. He indicated that a copy of the documents pertaining to the Revised Draft EPA Exceptional Events Guidance released on June 27, 2012 were provided in the agenda packet. Mr. Poppen discussed that the revised guidance documents are in response to comments provided by state, local and tribal agencies on the initial draft guidance documents issued in May 2011. On July 6, 2012, EPA published the notice of availability and the public comment period for the Draft Guidance to Implement Requirements for the Treatment of Air Quality Monitoring Data Influenced by Exceptional Events and associated attachments. Mr. Poppen stated that public comments are due to EPA by September 4, 2012.

Mr. Poppen provided an overview of the previous MAG comments on the May 2011 guidance documents and the responses from EPA. The first MAG comment stated: EPA should provide that implementation of Reasonable Available Control Measures (RACM) and Best Available Control Measures (BACM) will be considered to meet the Exceptional Events Rule (EER) requirements related to "reasonable controllable or preventable". Mr. Poppen stated that this was a common comment submitted by many agencies. He stated that with regard to our region, the controls in place, RACM and BACM, that have been approved in rules and State Implementation Plans (SIP), should be adequate to fulfill the requirements. Mr. Poppen indicated that EPA's response included the creation of a Prospective Control Analysis; a separate document that reviews an area's current windblown dust controls, implementation of controls, and creates a high wind threshold. The Analysis would be valid for three years. If EPA were to approve the Prospective Control Analysis, the Analysis could be referenced in exceptional event submittals. Additionally, Mr. Poppen stated that if EPA has an

approved SIP (less than three years old) with high wind controls and an agreed upon high wind threshold, EPA would consider those controls reasonable. He noted that the response also indicated that the windblown dust BACM has to be related to high wind controls and not low wind sources.

Mr. Poppen presented the next MAG comment: EPA should not specify a minimum wind speed for definition of a high wind exceptional event (EE) or create a regulatory presumption as to minimum wind speed. He stated that the initial EPA guidance used 25 miles per hour (mph) as the threshold for high wind EEs. Mr. Poppen noted the EPA response in the new guidance: “In identifying a high wind threshold, the EPA does not intend to set a bright line as to what speed constitutes a high wind dust event or to categorically concur with all events with sustained winds above a given threshold. The high wind threshold is the minimum threshold wind speed capable of overwhelming reasonable controls on anthropogenic sources or causing emissions from natural undisturbed areas.” Mr. Poppen indicated that the EPA guidance document suggests that agencies develop a high wind threshold for each area experiencing high wind dust events. He stated that the MAG region will likely need to develop a high wind threshold, since the 25 mph default is too high for many of the EEs in the region. Mr. Poppen discussed that the high wind threshold can be submitted separately, as part of an event demonstration, as part of the Prospective Controls Analysis, or as part of the High Wind Action Plan (HWAP). Wind tunnel tests, scientific literature, and/or monitoring data can be used to identify local thresholds.

Mr. Poppen discussed the third MAG comment on the initial May 2011 guidance: EPA should not link the “recurrence” criteria in the statutory exceptional event definition to requirements for additional controls or to otherwise establish a “more than once a year” definition of recurrence. Mr. Poppen explained that the previous guidance expected a higher level of control for areas with recurring exceptional events and that the controls would be progressively more intense as more events occur. The EPA response to the comment stated “in assessing whether an event was not reasonably controllable, the EPA would take into account whether the high wind event type was recurring such that more effective, but costly, controls would be reasonable compared to the situation in which a high wind event had been a unique occurrence...the EPA has reconsidered this approach and is de-emphasizing recurrence.” Mr. Poppen added that the guidance document was modified to de-emphasize recurrence when assessing “not reasonably controllable or preventable” analysis and made a basic controls analysis more robust while also adding the Prospective Controls Analysis and HWAP options.

Mr. Poppen presented the fourth MAG comment: If the EPA decides to allow for voluntary High Wind Action Plans, the Agency should not require continual revision and updating of the plans. He mentioned that previously EPA would have required constant revisions of the HWAPs with recurring events. However, de-emphasizing consideration of recurrence and the addition of a Prospective Controls Analysis should address these concerns. Mr. Poppen discussed that in the new revised guidance documents, a HWAP is largely designed for newly-identified sources of windblown dust. He indicated that a HWAP may not be as useful for our region since most of the sources of windblown dust have been readily identified. EPA does address nonattainment areas in regard to HWAPs specifically in the Draft High Winds Guidance document. EPA response was: “A PM nonattainment area is expected to have reasonable controls in place, but there may be new sources or improved controls that are identified after the original implementation of reasonable controls. Additionally, during high wind conditions, sources outside the designated area may contribute to violations in the nonattainment area. EPA will consider the wind speeds in the event(s) in question relative to the high

wind threshold in determining if additional controls are reasonable.” Mr. Poppen stated that EPA may request an area submit a HWAP in order to concur on some events if EPA believes additional reasonable controls are required.

Mr. Poppen presented the next MAG comment: EPA should recognize that exceptional events can and do occur at one monitor while other monitors in the same area may not violate an air quality standard. He mentioned that this occurs with our region. The EPA response to the comment: “EPA agrees that high wind dust events can affect one monitor and not others and has revised the draft High Winds Guidance document to more clearly reflect this point. Agencies believing this scenario occurred in their areas are encouraged to explain the spatial extent of the exceedance in the conceptual model of their demonstration. For example, if the agency describes the event as a regional dust storm, then the EPA would expect monitors within the same regional scale to be similarly affected by the dust storm. Note that if the exceedance is due to low wind speeds, or sources that should have been reasonably controlled then this event would not meet the ‘not reasonably controllable or preventable’ requirement.” Mr. Poppen commented that EPA is now allowing the inclusion of a single monitor exceedance; the exceptional events documentation simply needs to clearly describe and document the event in the conceptual model.

Mr. Poppen discussed the next MAG comment: EPA should accelerate the time frames for review and decisions on exceptional events and not require up to 18 months for Agency review. The EPA response stated: “The EPA will strive to review packages in less than 18 months, but the EPA’s review of some demonstrations may take a full 18 months.”

Mr. Poppen presented the final 2011 MAG comment: EPA should consider additional technical information with regard to wind speed and aerodynamic entrainment and correct errors in its analysis of these matters. The EPA response includes: “While the information presented in MAG’s detailed comments provides useful information on the mechanics of windblown dust in some areas, the high wind threshold is intended to represent the conditions that are capable of overwhelming reasonable controls on anthropogenic sources (i.e., significant emissions from controlled sources) or causing emissions from natural undisturbed areas, not the wind speed at which any level of emissions could occur from any source. This approach is also consistent with the Natural Events Policy where EPA required air agencies to define the conditions in which BACM level controls were overwhelmed.” Mr. Poppen stated that the region has determined that 12 mph is the threshold for dust emissions on both disturbed and undisturbed sources. He discussed that EPA is looking for a high wind threshold at which controlled sources produce enough dust to cause an exceedance of the air quality standard. Mr. Poppen commented that the EPA high wind threshold begins at the point that controls are overwhelmed. He added that, “EPA now suggests that agencies develop a local high wind threshold for each area experiencing high wind dust events and that the threshold should be supported and justified by local research.” The development of a local high wind threshold will be necessary for our region since the current threshold of 25 mph is too high.

Mr. Poppen provided additional highlights from the Revised Guidance Documents. He stated that the EPA guidance acknowledges the existence of extreme exceptional events (haboobs, tornados, volcanic eruptions) and that they may require more limited documentation. He noted that examples of limited document often were not provided. Mr. Poppen indicated that EPA has determined that reasonable controls generally would not need to be implemented for undisturbed natural landscapes. He indicated that the revised guidance states, “The EPA still maintains that the reasonableness of controls can

depend on the number of days per year on which they will have an air quality benefit.” Therefore, EPA still maintains that the recurrence of exceptional events might lead to the implementation of reasonable controls which may be stricter and more costly than current controls. The guidance also touches on intrastate transport that requires an evaluation on whether neighboring county emissions are not reasonably controllable or preventable. Mr. Poppen stated that this intrastate transport comment in the guidance may affect future submittals. He indicated that EPA is also deferring a decision of whether to revise the Exceptional Events Rule, despite numerous comments to do so. Mr. Poppen added that no new dispute resolution process was proposed in the guidance or as a possible rule revision. Mr. Poppen commented that EPA is requiring that the wind speed be expressed as an hourly average, instead of the five minute average that is currently documented in Arizona submittals. He indicated that if one hour exceeds the threshold EPA will generally accept that high winds caused the exceedance. For rural areas that do not have meteorological data, EPA is allowing for the use of modeled wind speeds. Mr. Poppen stated that in EPA’s Notice of Availability, EPA considered Arizona’s recent submittal for the July 2-8, 2011 exceptional events an example of a stream-lined submittal mainly because multiple exceedance days were submitted in one demonstration. He noted the size of the submittal.

Mr. Poppen discussed that EPA is soliciting comments on several topics, including the following: streamlining the process; available web-based information, links, and tools that would be useful; available sources of wind data and their use in setting local high wind thresholds; additional feedback on converting one-five minute wind speed data to hourly data; how useful is the Prospective Controls Analysis and High Wind Action Plan; technical analyses demonstrating wind speeds exceeding high wind threshold and that the exceedance was caused by not reasonably controllable emissions; the utility of the “information only” (“I”) flag; and how to characterize extreme events.

Mr. Poppen discussed the implications of the Revised Guidance for the Maricopa Region exceptional events. He stated that the workload required to document exceptional events is unlikely to be less under the implementation of the revised guidance. An approved Prospective Controls Analysis may help in regard to future events, but significant work is required to produce a Prospective Controls Analysis that would only be valid for a few years. Mr. Poppen commented that another implication is that the High Wind Action Plan will likely not be of use in our region, since EPA associates these primarily with newly-identified sources. However, EPA may require a HWAP if they deem that there are additional reasonable controls that have not been implemented for that area. Mr. Poppen discussed that the region will need to develop a local high wind threshold for when BACM and other local controls are overwhelmed, as the 25mph default is too high for this region. He noted that EPA still maintains that it can require additional controls beyond RACM/BACM, or what may exist in the SIP and/or local rules when evaluating an exceptional event, if EPA determines the current controls are not reasonable. Mr. Poppen mentioned the final implication is that EPA may still take 18 months to approve the exceptional event demonstrations.

Beverly Chenausky, Arizona Department of Transportation, inquired if additional controls beyond RACM and BACM are implemented, will a SIP revision be required to include the additional controls as enforceable measures in the PM-10 plan. Mr. Poppen replied that a SIP revision may be a possibility to include additional controls. Mr. Poppen discussed that the guidance document outlines options - first, concur with the exceptional events documentation and place a caveat that additional controls are required in the future, or, secondly, not concur and do a SIP call to add the additional controls. Mr. Poppen added that EPA’s perspective is that the exceptional event documentation

process is voluntary, in that it is separate and distinct from the other Clean Air Act requirements. Due to this view, the definition of reasonable controls is not linked to other Clean Air Act components, like RACM or BACM. Mr. Poppen stated that EPA can require additional controls in order to approve an exceptional event.

Ms. Chenausky asked if someone could request that EPA ask the states to include the additional controls from the Prospective Controls Analysis and HWAP into the SIP. Mr. Poppen responded that he was not certain about that particular scenario. He indicated that the Prospective Controls Analysis evaluates control measures currently in place and the HWAP evaluates new controls. Mr. Poppen added that the Prospective Controls Analysis and the HWAP are part of the exceptional event demonstration documentation.

7. EPA Proposal to Revise the Air Quality Standards for Particulate Matter

Mr. Poppen presented a review of the EPA proposal to revise the National Ambient Air Quality Standards for particulate matter (PM). He stated that the last review of the standards was completed in October 2006. During the 2006 review EPA: retained the 24-hour PM-10 standard at 150  $\mu\text{g}/\text{m}^3$ ; revoked the annual PM-10 standard; revised the 24-hour PM-2.5 standard from 65 to 35  $\mu\text{g}/\text{m}^3$ ; retained the annual PM-2.5 standard at 15  $\mu\text{g}/\text{m}^3$ ; and set secondary standards equal to primary standards. Mr. Poppen explained that these are the current standards in place.

Mr. Poppen reviewed the proposed revisions published in the Federal Register on June 29, 2012. The proposed air quality standards are as follows: retain the 24-hour PM-10 standard at 150  $\mu\text{g}/\text{m}^3$ ; retain the 24-hour PM-2.5 standard at 35  $\mu\text{g}/\text{m}^3$ ; revise the annual PM-2.5 standard from 15  $\mu\text{g}/\text{m}^3$  to within a range of 12 to 13  $\mu\text{g}/\text{m}^3$ ; set a distinct secondary standard for PM-2.5 to address visibility effects, particularly in urban areas, based on a new 24-hour standard set at either 30 or 28 deciviews (deciview scale is a light scattering scale); retain secondary standards to address non-visibility welfare effects; require one near-road PM-2.5 monitor in each urban area with a population of one million or more; and update the Air Quality Index (AQI) and grandfather certain permits. Mr. Poppen indicated the comments on the proposed revisions to the particulate matter National Ambient Air Quality Standards are due by August 31, 2012.

Mr. Poppen discussed EPA projections of the proposed revisions. Mr. Poppen stated that EPA projects that 99 percent of counties will meet the proposed standards without the need for additional local measures by the 2020 attainment date. He added that EPA projects the Maricopa County 2020 annual PM-2.5 level to be 10.2  $\mu\text{g}/\text{m}^3$  which is well below the proposed level of 12 to 13 and is indicative of attainment. Mr. Poppen noted that the Maricopa County current three year (2009-2011) annual PM-2.5 average is the highest at the South Phoenix monitor with a level of 10.50  $\mu\text{g}/\text{m}^3$ . The lowest PM-2.5 level is at the Mesa monitor with a value of 7.50  $\mu\text{g}/\text{m}^3$ . Mr. Poppen stated the middle value belongs to the West Phoenix monitor with a value of 9.64  $\mu\text{g}/\text{m}^3$ . He mentioned that EPA is taking comments on reducing the annual PM-2.5 level to 11  $\mu\text{g}/\text{m}^3$ . EPA projects the 2020 24-hour visibility to be 20 deciviews in Maricopa County.

Mr. Poppen provided an expected implementation timeline. He stated that the final rule is due by December 14, 2012, a date set by consent decree. EPA expects state designation recommendations to be made in December 2013. Mr. Poppen indicated that final area designations would occur in December 2014. He commented that if attainment demonstration SIPs are required, those would be

due in 2018. Attainment dates would then range from year 2020 to 2025. Mr. Poppen stated that based on EPA proposals, Maricopa County is anticipated to be in attainment with the new standards.

Mr. Mattingly inquired how EPA defines urban areas and asked if population density is used. Mr. Poppen replied that the Core Based Statistical Area (CBSA) is used. He indicated that our region is in a CBSA with a population over one million and that a near-road PM-2.5 monitor will be required.

8. Update on the MAG 2013 Carbon Monoxide Maintenance Plan

Cathy Arthur, Maricopa Association of Governments, provided an update on the MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area. Ms. Arthur stated that Maricopa County is in attainment of the carbon monoxide (CO) standard, however there are Clean Air Act requirements that need to be fulfilled by early 2013. She mentioned that several CO plans have been prepared by MAG over the years. In January 2001, the Revised 1999 Serious Area CO Plan was submitted to EPA. Ms. Arthur noted that the Revised 1999 Serious Area CO Plan demonstrated attainment of the CO standards by 2000. She stated there have been no monitored violations of the one-hour CO standard since 1986. In addition, there have been no monitored violations of the eight-hour CO standard since 1996. Therefore, when the revised 1999 plan was submitted, the plan was able to show clean data at the monitors, as well as meet all of the planning requirements necessary to demonstrate attainment of the CO standard by 2000.

Ms. Arthur stated that the MAG CO Redesignation Request and Maintenance Plan was submitted in May 2003. She indicated that this plan was required for EPA to redesignate the area to attainment. The 2003 CO Redesignation Request and Maintenance Plan demonstrated continued attainment of the CO standard through 2015. Ms. Arthur stated that EPA approved both the Revised 1999 Serious Area CO Plan and the CO Redesignation Request and Maintenance Plan and redesignated the Maricopa County nonattainment area to attainment effective April 8, 2005. Under section 175A(b) of the Clean Air Act an additional plan is required demonstrating maintenance of the CO standard ten years beyond the initial ten year period. Ms. Arthur indicated that the second maintenance plan is due eight years after the attainment designation which is April 8, 2013 for our region. She added that the maintenance plan must demonstrate attainment through 2025. Ms. Arthur discussed the importance of this upcoming maintenance plan and indicated that it would be the last CO plan required under the current CO standard.

Ms. Arthur discussed the MAG 2013 CO Maintenance Plan. She stated that neither of the two CO standards, the one-hour or the eight-hour, have been violated since 1996. Ms. Arthur indicated that the 2013 maintenance plan will include the existing carbon monoxide measures that were in the previous two plans. Therefore, no new measures will be needed. She discussed that a modeling protocol has been drafted and that maintenance will be demonstrated using three different analyses: Emissions Inventory Comparison, Scaling Maximum Concentrations, and Intersection Analysis.

Ms. Arthur discussed the Emissions Inventory Comparison. She stated that this analysis compares emission trends in 2006, 2008, 2015, and 2025. Ms. Arthur explained that the 2008 emissions will be derived from the Maricopa County Air Quality Department 2008 Periodic Emissions Inventory for CO. She indicated that the latest EPA approved models will be used for the 2013 maintenance plan. Ms. Arthur explained that MOVES2010b will be used as the onroad mobile source emissions model. The NONROAD2008a model will be used to evaluate equipment sources such as construction, industrial, farm, and lawn and garden equipment. In addition, the Emissions and Dispersion Modeling

System (EDMS) version 5.1.3 model will be used to estimate aircraft and airport emissions. Ms. Arthur stated that the data from the new models will be compared to emissions previously produced using other models and included in submitted plans. She added that the 2006 and 2008 data will also be compared to actual monitored concentrations. Ms. Arthur noted that the CO concentrations in the area are low. She stated that the eight-hour CO standard is 9 ppm and in 2006 the second highest eight-hour CO concentration at all monitors in the region was 4.6 parts per million (ppm) or approximately half of the standard. In 2008 it was 3.0 ppm which is one-third of the standard.

Ms. Arthur provided the second analysis of the Draft Modeling Protocol - Scaling Maximum Concentrations. She indicated that the modeling from the 2003 CO Maintenance Plan will be used to compare the maximum modeled eight-hour CO concentrations with emissions to prepare new scaled estimates of the maximum concentrations in 2025.

Ms. Arthur discussed the Intersection Analysis, the third analysis of the Draft Modeling Protocol. She stated that the CAL3QHC model will be used to model CO emissions at potentially high traffic volume and congested intersections in 2025. Ms. Arthur indicated that six intersections will be modeled to ensure that high traffic and high congestion intersections will not contribute to a violation of the CO standard in 2025.

Ms. Arthur stated that all three modeling approaches will be used to show attainment of the eight-hour CO standard of 9 ppm in 2025. MAG will also perform a weight of the evidence demonstration to show that declining concentrations are not due to unusually favorable meteorological conditions. Ms. Arthur indicated that temperatures, wind speeds, and mixing heights and atmospheric stability will all be analyzed to justify that the region's trend of low CO concentrations is not due to favorable meteorological conditions. She added that the 2013 maintenance plan will also establish a new 2025 transportation conformity budget for CO. Ms. Arthur explained that once EPA approves the plan or finds the budget to be adequate, the budget will then be applied in MAG conformity analyses for years after 2024.

Ms. Arthur presented the schedule of the MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area. She stated that the Draft Modeling Protocol document was sent to EPA for review on June 12, 2012 and EPA concurred with the modeling approach on June 25, 2012. The draft modeling protocol was then sent to ADEQ, the Arizona Department of Transportation, and MCAQD for review and comment on June 27, 2012. Ms. Arthur noted that MAG intends to prepare the Draft CO Maintenance Plan and Technical Support Document by late November 2012. She indicated that the release of the Draft Plan for public comment is scheduled for January 2013. Potential action would be taken by the MAG Air Quality Technical Advisory Committee in February 2013 with potential action by the MAG Management Committee and Regional Council in March 2013. Ms. Arthur stated that the MAG 2013 CO Maintenance Plan would be submitted to ADEQ and EPA by the end of March 2013. She noted the EPA deadline for the plan is April 8, 2013. Ms. Arthur stated that the Committee will be updated on the MAG 2013 CO Maintenance Plan at future meetings. Mr. Tveit thanked Ms. Arthur for the presentation.

9. EPA Final Approval of the MAG 2007 Eight-Hour Ozone Plan

Ms. Bauer stated that on June 13, 2012, EPA published a final rule to approve the MAG 2007 Eight-Hour Ozone Plan. The plan demonstrates attainment of the 1997 eight-hour ozone standard of 0.08 ppm by June 15, 2009.

10. Call for Future Agenda Items

Mr. Tveit requested suggestions for future agenda items. Antonio DeLaCruz, City of Surprise, inquired about House Bill (HB) 2798. Ms. Bauer replied that HB 2798 was passed by the Arizona Legislature in 2012 and requires reporting by all levels of government on the implementation of PM-10 measures. She stated that ADEQ will be releasing a form which the State, County, and local governments will use to report annually to ADEQ on the implementation of PM-10 measures. Ms. Bauer indicated that in order to assist ADEQ, MAG has supplied ADEQ with the form that MAG had previously used for information collection through 2010 for the prior MAG 2007 Five Percent Plan for PM-10. She noted that ADEQ will develop the form and collect the data.

Mr. Tveit indicated that the next meeting of the Committee has been tentatively scheduled for Thursday, August 23, 2012. With no further comments, the meeting was adjourned at 2:30 p.m.



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October 18, 2012

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Dean Giles, Air Quality Planning Program Specialist

SUBJECT: EVALUATION OF PROPOSED FY 2015, 2016, AND 2017 CMAQ PROJECTS FOR THE FY 2014-2018 MAG TRANSPORTATION IMPROVEMENT PROGRAM

The Maricopa Association of Governments staff has conducted an evaluation of proposed FY 2015, 2016, and 2017 Congestion Mitigation and Air Quality Improvement (CMAQ) projects submitted for the FY 2014-2018 MAG Transportation Improvement Program. The results of the project evaluations are ranked by cost-effectiveness by modal category in Attachment A. In accordance with the approved MAG Federal Fund Programming Guidelines and Procedures, this information is being presented to the MAG Air Quality Technical Advisory Committee for a possible recommendation to forward the CMAQ evaluation to the MAG Transportation Review Committee and modal committees for use in prioritizing projects. In addition, it is requested that the Committee rank the Air Quality Projects, to be forwarded to the MAG Transportation Review Committee. Please refer to Attachment B on the role of the AQTAC in the Congestion Mitigation and Air Quality Improvement Project Evaluation Process.

## BACKGROUND

According to the final Congestion Mitigation and Air Quality Improvement Program Guidance, published October 20, 2008, the purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the national ambient air quality standards for ozone, carbon monoxide, and particulate matter. A description of the project categories contained in federal CMAQ guidance, as well as general activities and projects eligible for CMAQ funding from Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21), is provided in Attachment C.

Each year, MAG programs available federal funds. Jurisdictions are requested, through the MAG Management Committee, the Transportation Review Committee, and modal committees, to submit project requests for federal funding. The Regional Transportation Plan allocates CMAQ funding percent by mode (see Attachment D). The estimated total CMAQ funding levels for all programs in FY 2015, 2016, and 2017 are \$56.9 million, \$58.9 million, and \$61.0 million respectively. The estimated CMAQ amount is subject to change based on final funding levels from Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21). The deadline for submitting project applications was September 19, 2012.

The MAG Public Participation Process is divided into four phases: Early Phase, Mid-Phase, Final Phase, and Continuous Involvement. MAG is in the Continuous Involvement Phase and is currently obtaining public input into the transportation programming process.

The Methodologies for Evaluating Congestion Mitigation and Air Quality Improvement Projects, September 30, 2011, were used to estimate the emission reduction benefits of the proposed CMAQ projects. The methodologies were presented at the CMAQ workshop conducted by MAG on December 6, 2010 and revised based on input received at the CMAQ workshop. Where appropriate, the emission reduction benefits and cost-effectiveness of CMAQ eligible projects have been quantified using these methodologies.

The CMAQ methodologies involve the estimation of the total daily weighted emissions reduction of PM-10, nitrogen oxides (NOx), and total organic gases (TOG) expressed in kilograms per day, and the cost-effectiveness of each project, measured in CMAQ dollars per metric ton of total annual emissions reduced. Since there have been no violations of the carbon monoxide (CO) standard since 1996, carbon monoxide has been assigned a weight of zero and therefore no CO emissions reductions are shown. The Environmental Protection Agency MOVES emission model was used to estimate emission factors for NOx, TOG, and PM-10 exhaust, tire wear, and brake wear for the year of project implementation. The emission factors from EPA AP-42 were used to estimate reentrained PM-10 emissions from vehicles traveling on paved and unpaved roads.

All CMAQ eligible projects were evaluated for expected emission reductions and cost-effectiveness. Attachment A provides the results of the project evaluation ranked by cost-effectiveness within each modal category. It is important to note that all of the proposed projects support committed control measures contained in the MAG air quality plans. It is anticipated that these projects will be reviewed and ranked by the modal committees and then forwarded to the Transportation Review Committee.

Following review of the CMAQ evaluation by the MAG Air Quality Technical Advisory Committee, it is anticipated that the Committee may make a possible recommendation to forward the CMAQ evaluation to the MAG Transportation Review Committee and modal committees for use in prioritizing projects. In addition, it is requested that the Committee rank the Air Quality Projects to be forwarded to the MAG Transportation Review Committee. The Transportation Review Committee will be requested to recommend a fiscally constrained list of projects for federal funding to the MAG Management Committee for inclusion in the Draft FY 2014-2018 MAG Transportation Improvement Program.

If you have any questions, please contact me at (602) 254-6300.

Attachments

Table 1 - Evaluation of Proposed AIR QUALITY Projects for the Federal Fiscal Year 2015 Sorted by Cost Effectiveness

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
MAG	Regionwide	Purchase PM-10 Certified Street Sweepers <sup>1</sup>	2015		0.00	0.00	1110.50	1110.50	\$387	\$1,100,000
MAG	Regionwide	Trip Reduction Program <sup>2</sup>	2015		53.01	136.05	184.50	373.56	\$7,270	\$962,347
MAG	Regionwide	Regional Rideshare Program <sup>3</sup>	2015		30.36	78.33	106.36	215.05	\$7,795	\$594,000
MAG	Regionwide	Travel Reduction Program <sup>3</sup>	2015		0.29	0.76	1.03	2.09	\$182,536	\$135,000

Table 2 - Evaluation of Proposed Bicycle and Pedestrian Projects for the Federal Fiscal Year 2015 Sorted by Cost Effectiveness

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Maricopa County	East McDowell Road, 76th Street to 92nd Street	Construct bicycle lane and paved shoulder on both sides. <sup>4,5</sup>	2015	2.10	0.01	0.02	5.20	10.40	\$9,858	\$556,747
Cave Creek	Cave Creek Road at Carefree Highway through the Town Core of Cave Creek to the Town Core of Carefree ending at Pima Road (Carefree)	Provide Bike Lanes along Cave Creek Road from Carefree Highway through Cave Creek Town Core to Carefree Town Core. <sup>4</sup>	2015	8.40	0.03	0.05	2.02	2.09	\$258,538	\$2,938,480
Phoenix#2	32nd St from State Route 51 to Reach 11.	The proposed project is to implement bike lanes along 32nd street from State Route 51 to Reach 11. <sup>4</sup>	2015	7.00	0.05	0.07	0.10	0.22	\$283,917	\$445,568
Valley Metro	Regionwide	School Resource Officer Training Program. <sup>4</sup>	2015		0.30	0.78	1.06	2.15	\$308,847	\$235,365
Phoenix#1	The Roosevelt Row along Roosevelt Street between 4th Street and 7th Street .	This project will reduce roadway width to allow room to widen sidewalks, install landscape, pedestrian amenities and a bikelane. <sup>4,6</sup>	2015	0.25	0.01	0.02	0.29	0.32	\$331,412	\$750,260
Phoenix#5	Shea Blvd:32nd St to SR-51.	The project scope consists of reducing the roadway cross-section from approximately 94ft to approximately 64ft. <sup>6</sup>	2015	0.14	0.03	0.05	0.07	0.15	\$338,534	\$364,941
Phoenix#6	Regional Bike Share along Metro rail corridor in Phoenix and Tempe	Bike share extends the envelope of public transit to bikeable distance rather than walking distance. Bike Share is a sustainable way to clean our air, build community, save money and improve health. <sup>4</sup>	2015	18.00	0.27	0.42	0.61	1.30	\$348,691	\$1,414,500
Glendale#3	New River starting at Hillcrest Boulevard and ending north of Hillcrest Boulevard.	This will be a 1/4 mile pathway segment on the east bank of New River that will connect an existing pathway in Glendale to a pathway in the City of Peoria. <sup>6</sup>	2015	0.25	0.03	0.04	0.06	0.13	\$352,444	\$330,850
Scottsdale#2	Shea Boulevard Tunnel Access at 124th Street between Sahuaro Drive and Via Linda	Provide Shea Tunnel nonmotorized access and one mile of connectivity from 124th Street/CAP Canal to 124th Street near Via Linda. Includes shared use path, trail and access to existing Shea Tunnel. <sup>6</sup>	2015	5.00	0.07	0.09	0.13	0.28	\$471,523	\$1,253,032

Table 2 - Evaluation of Proposed Bicycle and Pedestrian Projects for the Federal Fiscal Year 2015 Sorted by Cost Effectiveness

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Avondale	East bank of the Agua Fria River, South of I-10 to north of the I-10 connecting to the existing Friendship Park path at McDowell Road.	Construct an asphalt path and I-10 underpass along the Agua Fria River east bank connecting a privately developed path. <sup>6</sup>	2015	1.00	0.05	0.07	0.09	0.20	\$657,680	\$1,264,427
Phoenix#3	Rio Salado Pathway : 32nd Street alignment to 40th Street.	This phase of the Rio Salado Pathway will construct a 12-foot wide paved multi-modal path on the south bank of the Salt River. <sup>6</sup>	2015	1.10	0.05	0.08	0.10	0.24	\$666,785	\$1,122,642
Buckeye#2	Watson Road	Multi-Use Detached Sidewalk to connect Westpark MPC/Youngker High School to Sundance MPC/Inca Elementary. <sup>4,6</sup>	2015	0.50	0.01	0.02	0.03	0.06	\$689,482	\$302,206
Mesa	Rio Salado Pathway-Segment 3	The project will design and construct 4,000 linear feet of a 10-foot concrete shared-use path starting east of the ADOT Segment Two. <sup>6</sup>	2015	0.90	0.02	0.03	0.05	0.11	\$1,304,259	\$999,999
Salt River Pima-Maricopa Indian	Longmore Road from McDowell Road to Osborn Road .	Design and construct an 8-foot wide pedestrian sidewalk. <sup>6</sup>	2015	1.55	0.00	0.00	0.04	0.05	\$1,522,928	\$497,796
Glendale#1	55th Avenue is north/south collector street designated as a bike route.	This project will widen a 622 feet long section of 55th Ave from 20 feet wide to 40 feet wide. Bike lanes, a sidewalk and curb and gutter will be added to the widened roadway. <sup>4,6</sup>	2015	0.12	0.00	0.00	0.01	0.01	\$1,553,417	\$159,266
Litchfield Park	Old Litchfield Road from West Fairway Drive to Bird Lane	This project proposes to provide a sidewalk connection/link from historic old town Litchfield in Litchfield Park to areas on the north side of the Litchfield Park area. <sup>6</sup>	2015	0.52	0.00	0.00	0.01	0.01	\$2,126,263	\$213,911
Phoenix#7	107th Avenue: Indian School Road to Camelback Road.	Tiling the existing Roosevelt irrigation ditch facility, providing a pedestrian/bicycle path with landscaping, improving air quality and traffic congestion. <sup>4,6</sup>	2015	1.00	0.02	0.03	0.04	0.09	\$2,302,656	\$1,500,000
Buckeye#1	Rainbow Road to west of the Rainbow Road/Lower Buckeye Road intersection	Multi Use sidewalk to connect over 20,000 persons to the "Destination" located at Rainbow Road and Lower Buckeye Road. <sup>4,6</sup>	2015	0.60	0.00	0.01	0.01	0.02	\$3,217,665	\$392,592
Apache Junction	Southern Avenue between Winchester and Royal Palms .	Construct sidewalks, curb & gutter, ADA sidewalk ramps and driveways along Southern Ave between Winchester and Royal Palms and winchester between Hondo and Southern. <sup>6</sup>	2015	0.75	0.00	0.00	0.00	0.01	\$3,303,114	\$197,604
Glendale#2	Thunderbird Paseo Pathway at Sweetwater Avenue, Hearn Road and 71st Avenue.	This project will improve three neighborhood connections to the Thunderbird Paseo Multi-use Pathway and a connection to the Skunk Creek Multi-use Pathway. <sup>4,6</sup>	2015	0.50	0.0005	0.0007	0.0010	0.0022	\$6,714,031	\$107,832
Phoenix#4	First Street between Roosevelt Street and Moreland Street.	This project will reduce roadway width to allow more room to widen sidewalks, add landscape and install pedestrian amenities. It will complete the gap in the downtown pedestrian loop. <sup>6</sup>	2015	0.18	0.0007	0.0005	0.0004	0.0016	\$84,470,793	\$989,631

Table 3 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2015 Sorted by Cost Effectiveness

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Tempe#1	Various locations throughout the city including Broadway/I-10 and RioSalado/Loop 101	The project will install new conduit and make use of existing conduit to provide fiber connection from ADOT's node 12 building to the signals a. The project also includes procuring and installing 22 Closed Circuit Television (CCTV) cameras for each interchange intersection in Tempe. <sup>7</sup>	2015	90.00	26.55	36.36	24.04	86.95	\$1,980	\$287,751
Phoenix#3	65 Locations Citywide	Procure, install and provision the CCTV Pan,Tilt, Zoom (PTZ) traffic monitoring cameras at identified intersections. <sup>7</sup>	2015	59.00	38.87	123.70	24.78	187.35	\$2,403	\$752,543
Chandler#1	Citywide	To improve traffic flow and reduce delays by upgrading 201 new signal controller equipment to be compatible with the latest software. <sup>7</sup>	2015	136.00	31.21	29.63	29.59	90.43	\$3,386	\$511,766
Phoenix#1	The 7th Ave:Northern Ave., Glendale Ave., Camelback Rd., and McDowell Rd. 7th St.: Bell Rd, Thunderbird Rd., Camelback Rd., and McDowell Rd.	Procure, install and provision the Dynamic Message Signs near identified intersections. <sup>7</sup>	2015	22.00	14.49	46.13	9.24	69.86	\$7,320	\$854,811
Scottsdale#3	Scottsdale Rd. & Carefree Highway to Hayden Rd. & McKellips and eastward along the Shea Blvd. corridor to 136th St.	Highway Advisory Radio (HAR) uses low power, short range, AM broadcast radio to advise the public on a variety of important travel and safety related information. <sup>7</sup>	2015	101.00	5.25	16.09	4.82	26.16	\$8,669	\$379,005
Mesa#1	Multiple locations throughout the city	Purchase 4 access points per radio tower on 12 existing radio towers for a total of 38 access points. Purchase 40 remotes to support field device communications back to the radio towers. <sup>7</sup>	2015	3.00	0.79	2.65	0.35	3.79	\$36,930	\$233,864
Apache Junction	Citywide	Apache Junction ITS Strategic Plan. <sup>7</sup>	2015	452.00	0.86	0.55	0.85	2.26	\$37,478	\$141,450
Phoenix#2	16th St & Virginia, 7th St & Oak, 3rd St. & Moreland, 25th Ave 1/4 mile north of Dunlap, 19th Ave & Buchanan, Central Ave & Olympic.	Procure, install and provision the High Intensity Activated Crosswalk (HAWK) signals at identified locations. <sup>7</sup>	2015	6.00	1.35	4.30	0.86	6.52	\$77,088	\$839,597
Maricopa County#1	Bell Road & L303 & Grand Ave from Cotton Lane to 114th Ave., Bell Road L101 from 99th Ave. to 73rd Ave., FrankLloyd Wright & L101 from Scottsdale Rd to Thomposon Peak Pwky, Bell Rd & I-17 from 35th Ave to 19th Ave.	Install adaptive signal control technology at 52 intersections. <sup>7</sup>	2015	15.60	4.19	8.41	3.97	16.56	\$83,629	\$2,315,065
Glendale#2	Citywide	Installation of count stations and travel time data collectors at key intersections and locations throughout the city. <sup>7</sup>	2015	3.00	0.37	1.06	0.37	1.80	\$184,403	\$555,470

**Table 3 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2015 Sorted by Cost Effectiveness**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Goodyear#1	SR 303L: McDowell Road traffic interchange (TI) to Camelback Road TI.	Expand Traffic Management Center (TMC) traffic surveillance and monitoring capability by connecting to existing CCTV cameras at Indian School Road and Camelback Road traffic signals at SR 303L; Facilitate the adjustment of traffic signal timing adjustments at these locations in response to real-time traffic conditions. <sup>7</sup>	2015	3.00	0.37	-0.11	0.43	0.69	\$190,323	\$219,876
Avondale#1	Dysart Road : Rancho Santa Fe Boulevard to Indian School Road	Connect Eight signals to increase traffic flow, streamlined and more efficient signal coordination and fault diagnosis for transportation applications, including public safety communications. Support Regional traffic initiatives including Integrated Corridor Management Systems (ICMS) along I-10 West. <sup>7</sup>	2015	2.25	0.32	0.39	0.30	1.01	\$301,851	\$508,579
Surprise	Reems Road between Peoria Avenue and Waddell Road; Reems Road north of Waddell Road; Litchfield Road south of Waddell Road	Procure and install a fiber optic backbone on Reems Road from Peoria Avenue to Waddell Avenue. <sup>7</sup>	2015	2.00	0.25	0.85	0.13	1.23	\$425,533	\$875,575
Peoria#1	75th Avenue: Greenway to Paradise lane and Paradise Lane from 75th Avenue to 77th Avenue	Expand TMC traffic surveillance and monitoring capability by installing CCTV cameras with peer-to-peer control. <sup>7</sup>	2015	0.50	0.03	0.10	0.03	0.17	\$743,038	\$206,772
Gilbert#1	Town of Gilbert's boundaries in northwest Fiber Optic Ring.	This project will connect 8 traffic signals to the Town of Gilbert's fiber optic network and install approximately 3.5 miles of fiber optic cable in existing and new conduit, 3 CCTV cameras, 5 Controllers and other associated equipment. <sup>7</sup>	2015	3.00	0.23	-0.10	0.29	0.42	\$778,053	\$549,600
Glendale#3	Maryland Avenue from 95th Avenue to 99th Avenue.	Install four lane control signal bridges with overhead signs to allow for dynamic assignment of lanes along Maryland Avenue between 95th and 99th avenues. Install dynamic message signs for both east and westbound traffic on two of the structures. <sup>7</sup>	2015	0.50	0.03	0.09	0.03	0.15	\$4,877,626	\$1,222,193

**Table 4 - Evaluation of Proposed AIR QUALITY Projects for the Federal Fiscal Year 2016 Sorted by Cost Effectiveness**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
MAG	Regionwide	Purchase PM-10 Certified Street Sweepers <sup>1</sup>	2016		0.00	0.00	1110.50	1110.50	\$387	\$1,100,000
MAG	Regionwide	Trip Reduction Program <sup>2</sup>	2016		48.57	122.48	188.66	359.71	\$7,550	\$962,347
MAG	Regionwide	Regional Rideshare Program <sup>3</sup>	2016		27.83	70.59	108.87	207.29	\$8,086	\$594,000
MAG	Regionwide	Travel Reduction Program <sup>3</sup>	2016		0.26	0.67	1.03	1.96	\$194,199	\$135,000

**Table 5 - Evaluation of Proposed Bicycle and Pedestrian Projects for the Federal Fiscal Year 2016 Sorted by Cost Effectiveness**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Tempe#2	Priest Drive Bridge at Rio Salado River.	Priest Dr Rio Salado River Underpass-grade separated bicycle and pedestrian connection. <sup>4,6</sup>	2016	0.18	0.04	0.06	3.50	3.60	\$45,265	\$1,165,396
Chandler	Western Canal Multi-Use Path Crossing at the UPRR	Construct at-grade bicycle/pedestrian crossing improvements at the Western Canal crossing at the UPRR. Improvements include concrete path, panels, and RR signals & gates. <sup>4,6</sup>	2016	0.04	0.02	0.03	0.04	0.09	\$545,021	\$355,275
Scottsdale#1	WestWorld / Indian Bend Trail and Path Connections	Provide 4.7 miles of nonmotorized connectivity from McDowell Mountain Ranch Community Center through WestWorld to Pima Road / East Trailside View. Includes shared use path, trail, crossings through four existing tunnels, and sidewalk connection. <sup>6</sup>	2016	4.70	0.08	0.11	0.16	0.35	\$1,284,705	\$4,223,645
Surprise#1	Reems Road westside sidewalk between Peoria & Cactus	This project will install a missing 1 mile section of sidewalk on the west side of Reems Road. This will connect the neighborhood access to the existing signalized, ADA ramps at Cactus and Peoria. <sup>6</sup>	2016	1.00	0.01	0.01	0.01	0.02	\$1,335,386	\$198,900
Surprise#2	West Point Gap Study Sidewalk	Project will consist of construction of a 5 ft wide sidewalk and ADA ramps that will connect to Bell Road Retail Shopping center. <sup>6</sup>	2016	1.20	0.0014	0.0010	0.0009	0.0033	\$9,996,026	\$233,125

**Table 6 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2016 Sorted by Cost Effectiveness**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Chandler#2	Citywide	Purchase and install 652 four-section flashing yellow arrow signal heads at 114 signalized intersections in City of Chandler. <sup>7</sup>	2016	136.00	17.55	30.31	9.46	57.33	\$6,609	\$633,281
Mesa#3	Citywide	Integrate Mesa 9-1-1 Call Center Computer Aided Dispatch (CAD) data into the Regional Archive Data System (RADS). <sup>7</sup>	2016	4.00	0.86	2.77	0.80	4.42	\$7,650	\$56,580
ADOT	Two segments from I-10 to Avondale Blvd and I-10 Dysart Road to Litchfield Road.	Extend fiber communications coverage on I-10, as part of the ADOT FMS Phase 11A project, to expand Regional Community Network to link two West Valley agencies. <sup>7</sup>	2016	2.00	0.51	1.75	0.24	2.50	\$12,205	\$51,045
Scottsdale#1	60 Major Arterial/Arterial Intersections throughout The City of Scottsdale	Replace standard Signal Cabinets with Advanced Hybrid Cabinets. <sup>7</sup>	2016	101.00	5.25	16.09	4.82	26.16	\$15,480	\$676,800

Table 6 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2016 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Scottsdale#2	60 Arterial/Collector Intersections throughout The City of Scottsdale	Replace standard Signal Cabinets with Advanced Hybrid Cabinets. <sup>7</sup>	2016	101.00	5.25	16.09	4.82	26.16	\$15,480	\$676,800
Mesa#2	Rio Salado, University, Apache, Broadway, Southern, Baseline, Guadalupe, Elliot, Warner, Val Vista, Lindsay, Gilbert, Cooper, McQueen, Arizona Ave, Alma School, Dobson, Price, McClintock and Rural.	Purchase and install 91 Anonymous Re-identification (ARID) devices in existing traffic signal cabinets throughout the East Valley along with central control software for each partnering agency's TMC. <sup>7</sup>	2016	3.50	0.59	2.21	0.53	3.34	\$117,553	\$655,385
Glendale#1	Olive Ave: 47th Ave to 59th Ave, 51st Ave: Glendale Ave to Peoria Ave, Northern Ave: 47th Ave to 51st Ave	Installation of conduit, fiber optic cable, communications equipment and CCTV cameras at intersections. Additionally, 7 new CCTV cameras will be installed to allow for real time traffic monitoring. <sup>7</sup>	2016	3.00	0.66	2.01	0.60	3.27	\$165,323	\$904,728
Tempe#2	Rural Road (North).	The project will install conduit and fiber in the Rural Rd corridor from US 60 north. <sup>7</sup>	2016	5.00	0.46	1.73	0.42	2.61	\$225,377	\$983,625
Avondale#3	Dysart Road :Coldwater North to Buckeye Road/MC 85	Connect six signals to increase traffic flow, streamlined and more efficient signal coordination and fault diagnosis for transportation applications, including public safety communications. Support Regional traffic initiatives including Integrated Corridor Management Systems (ICMS) along I-10 West. <sup>7</sup>	2016	1.55	0.21	0.25	0.19	0.65	\$383,840	\$419,118
Avondale#2	McDowell Rd - Dysart Road to Avondale Boulevard.	Connect two existing signals and two future signals to increase traffic flow, streamlined and more efficient signal coordination and fault diagnosis for transportation applications, including public safety communications. Support Regional traffic initiatives including Integrated Corridor Management Systems (ICMS) along I-10 West. <sup>7</sup>	2016	2.08	0.19	0.24	0.18	0.60	\$419,959	\$424,498
Goodyear#2	Yuma Road - Cotton to Estrella, Cotton Lane - Yuma to Lilac.	Expand Traffic Management Center (TMC) traffic surveillance and monitoring capability by connecting to seven existing traffic signals along Cotton Lane and Yuma Road. <sup>7</sup>	2016	2.50	0.22	0.59	0.20	1.01	\$483,729	\$820,001
Gilbert#2	Town of Gilbert's boundaries in northwest Fiber Optic Ring (Segment II).	This project will connect 7 traffic signals to the Town of Gilbert's fiber optic network and install approximately 3.5 miles of fiber optic cable in existing and new conduit, 5 CCTV cameras, 3 signal controllers and other associated equipment. <sup>7</sup>	2016	4.00	0.30	-0.12	0.36	0.54	\$609,823	\$546,072
Maricopa County#3	Riggs Road from South Sun Lakes Boulevard to South Arizona Avenue and along Alma School Road between Chandler Heights Blvd and Riggs Road.	Install 3.5 miles of new fiber and conduit infrastructure to connect MCDOT traffic signals and 2 new CCTV cameras to existing City of Chandler fiber infrastructure to be centrally controlled from the MCDOT TMC through the RCN network and eliminate need for leased lines. <sup>7</sup>	2016	4.00	0.15	0.31	0.15	0.61	\$722,303	\$734,295

**Table 6 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2016 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Peoria#2	Lake Pleasant Parkway from Westwing Parkway to Loop 303	Install conduit and fiber on Lake Pleasant Parkway from Westwing Parkway to Loop 303 & Lake Pleasant Parkway to connect these intersection with the City's communication network. <sup>7</sup>	2016	2.00	0.04	0.14	0.04	0.23	\$1,657,805	\$630,113

**Table 7 - Evaluation of Proposed AIR QUALITY Projects for the Federal Fiscal Year 2017 Sorted by Cost Effectiveness**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
MAG	Regionwide	Purchase PM-10 Certified Street Sweepers <sup>1</sup>	2017		0.00	0.00	1110.50	1110.50	\$387	\$1,100,000
MAG	Regionwide	Trip Reduction Program <sup>2</sup>	2017		45.67	112.17	192.98	350.82	\$7,741	\$962,347
MAG	Regionwide	Regional Rideshare Program <sup>3</sup>	2017		26.19	64.70	111.46	202.36	\$8,283	\$594,000
MAG	Regionwide	Travel Reduction Program <sup>3</sup>	2017		0.24	0.60	1.03	1.87	\$203,871	\$135,000

**Table 8 - Evaluation of Proposed Bicycle and Pedestrian Projects for the Federal Fiscal Year 2017 Sorted by Cost Effectiveness**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Phoenix#8	Rio Salado Pathway: 40th Street to S.R. 143	This phase of the Rio Salado Pathway (40th Street to S.R.143) will construct a 12-foot wide paved path on the south bank of the Salt River and two underpass below 44th Street and S.R.143. <sup>6</sup>	2017	10.00	0.04	0.06	0.10	0.20	\$1,085,665	\$2,058,310
Buckeye#3	Watson Road/Lower Buckeye Road to west of the Rainbow Road/Lower Buckeye Road intersection	Multi-Use Sidewalk to connect Westpark MPC and Youngker High School to Destination and other facilities within Sundance MPC. <sup>4,6</sup>	2017	0.90	0.00	0.00	0.01	0.01	\$4,235,833	\$388,830
Tempe#1	8th Street/Creamery Branch	The project includes length of 8th Street, from Rural to McClintock, the Creamery rail corridor extending from Dorsey east/northeast to University, and west of Rural Road west/northwest along the canal and rail corridor to University. <sup>4,6</sup>	2017	1.20	0.00	0.01	0.01	0.02	\$8,930,130	\$1,379,021

Table 9 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2017 Sorted by Cost Effectiveness

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Peoria#3	Peoria Traffic Management Center (TMC).	Replace legacy TMC equipment, including switches, servers, workstations, video screens, wall encoders, firewall. <sup>7</sup>	2017	409.00	10.37	36.77	7.66	54.79	\$5,266	\$482,345
Phoenix#4	I-10 to the north, I-17 to the south, I-10 to the east and I-17 to the west, Grand Ave (SB) prior to 7th Ave., and 7th St. (NB) prior to Buckeye Rd., and for 3 new DMS outbound at 7th St. (NB) prior to Van Buren St., 7th St (SB) prior to Buckeye Rd., and Lincoln St. (WB) prior to 7th Ave.	The City of Phoenix Police use the existing Downtown Traffic Management System (DTMS) extensively to control traffic after large special events held downtown. <sup>7</sup>	2017	12.00	4.89	14.67	3.58	23.14	\$14,643	\$566,507
Tempe#3	Rural Road (South).	The project will install conduit and fiber in the Rural Rd corridor from US 60 south. <sup>7</sup>	2017	4.20	0.34	1.27	0.31	1.91	\$278,018	\$887,389
Avondale#4	Van Buren Street from Central Avenue to 107th Avenue.	Connect five existing signals and provide for communications to three future signals to increase traffic flow, streamlined and more efficient signal coordination and fault diagnosis for transportation applications, including public safety communications. Support Regional traffic initiatives including Integrated Corridor Management Systems (ICMS) along I-10 West. <sup>7</sup>	2017	3.00	0.21	0.26	0.20	0.67	\$653,069	\$731,990
Maricopa County#2	Indian School Rd: L101 to 99th Ave, eastside of the McDowell Rd L101 interchange, Daisy Mountain Dr: Gavilan Peak Pkwy to I-17 (Anthem)	Install Last Mile fiber optic connections and new fiber and conduit infrastructure along Indian School Road, McDowell Road, and in Anthem. <sup>7</sup>	2017	1.10	0.09	0.19	0.09	0.37	\$694,607	\$429,988

## Notes:

<sup>1</sup>Supports the Measure in the Serious Area PM-10 Plan: "PM-10 Efficient Street Sweepers"

<sup>2</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Trip Reduction Program"

<sup>3</sup>Supports the TCMs in the Serious Area PM-10 Plan and CO Maintenance Plan: "Areawide Public Awareness Program" and "Employer Rideshare Program Incentives"

<sup>4</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Development of Bicycle Travel Facilities"

<sup>5</sup>These projects also include shoulder paving which supports the measure in the Serious Area PM-10 Plan: "Curbing, Paving or Stabilizing Shoulders on Paved Roads"

<sup>6</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Encouragement of Pedestrian Travel"

<sup>7</sup>Supports the TCMs in the Serious Area PM-10 Plan and CO Maintenance Plan: "Coordinate Traffic Signal Systems" and "Develop Intelligent Transportation Systems"

<sup>8</sup>Goodyear#1, Gilbert#1, Gilbert#2 NOx value under evaluation

**ROLE OF THE MAG AIR QUALITY TECHNICAL ADVISORY COMMITTEE  
IN THE CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT (CMAQ)  
PROJECT EVALUATION PROCESS**

CMAQ Projects for the Transportation Improvement Program

- Forward the evaluation of proposed CMAQ projects for the MAG Transportation Improvement Program to the MAG Transportation Review Committee and modal committees for use in prioritizing projects.
- Rank the Air Quality Projects to be forwarded to the MAG Transportation Review Committee.

Sequence of Committee Actions: Air Quality Technical Advisory Committee, Transportation Review Committee and Modal Technical Advisory Committees, Management Committee, Transportation Policy Committee, Regional Council.

PM-10 Certified Street Sweeper Projects

- Recommend a prioritized list of proposed PM-10 Certified Street Sweeper Projects for CMAQ funding and retain the prioritized list for any additional CMAQ funds that may become available due to year-end closeout, including redistributed obligation authority, or additional funding received by this region.

Sequence of Committee Actions: Air Quality Technical Advisory Committee, Management Committee, Regional Council.

Paving Unpaved Road Projects

- Rank the proposed Paving Unpaved Road Projects for CMAQ funding and forward to the MAG Transportation Review Committee.

Sequence of Committee Actions: Air Quality Technical Advisory Committee, Transportation Review Committee, Management Committee, Transportation Policy Committee, Regional Council.

# MAG COMMITTEE STRUCTURE

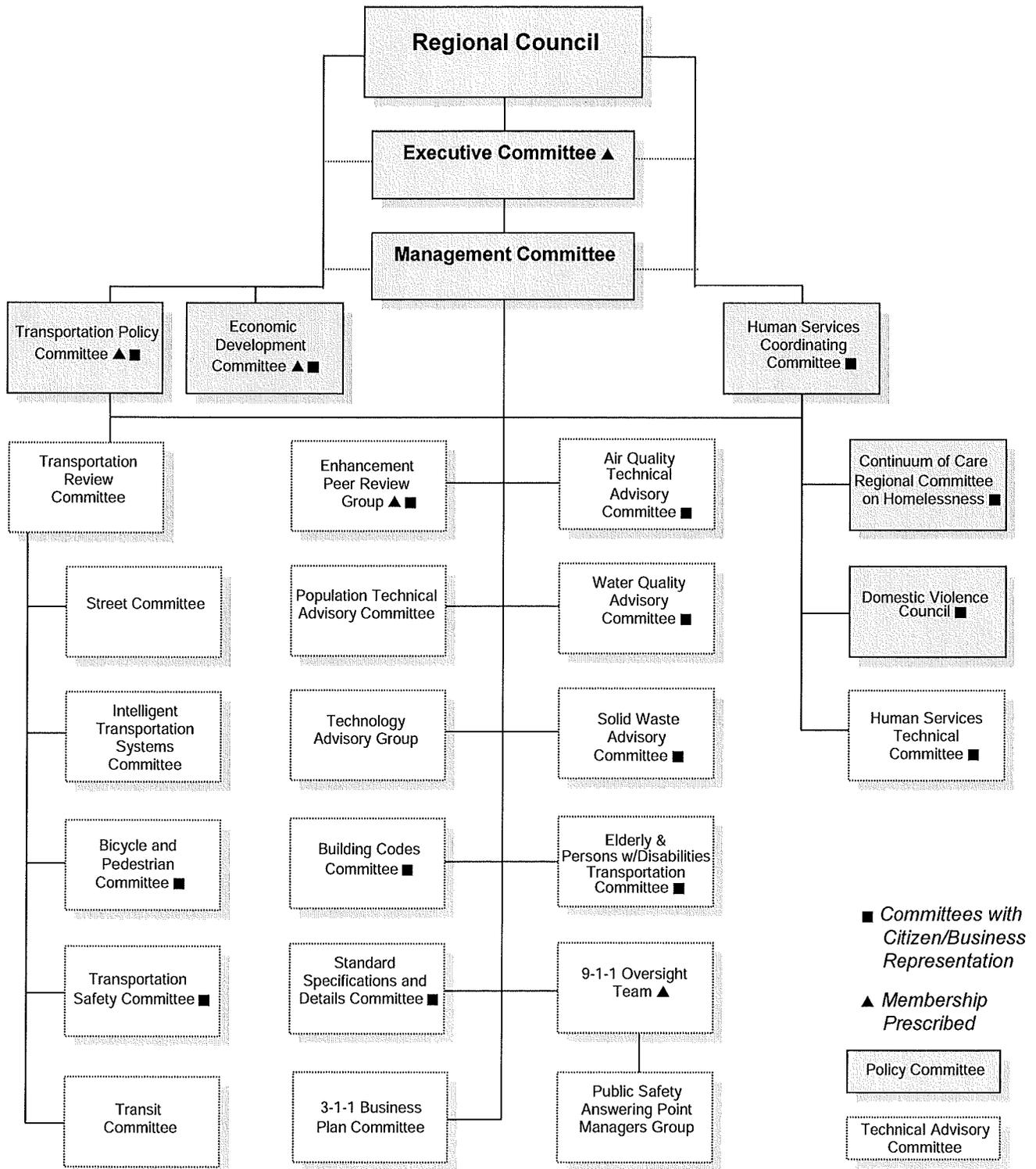


Figure 7: MAG Committee Structure

## CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM FACT SHEET

The Congestion Mitigation and Air Quality Improvement (CMAQ) Program was created by the Intermodal Surface Transportation Efficiency Act of 1991. The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the national ambient air quality standards for ozone, carbon monoxide, and particulate matter. On July 6, 2012, President Obama signed into law a new transportation reauthorization bill, Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21). This fact sheet has been updated to reflect the latest Federal Highway Administration (FHWA) MAP-21 guidance on eligible projects.

Table 1 provides a description of the project categories contained in federal CMAQ guidance as well as general activities and projects eligible for CMAQ funding. Table 2 provides a list of ineligible CMAQ activities and projects.

The SAFETEA-LU directs States and MPOs to give priority to two categories of funding. First, to diesel retrofits, particularly where necessary to facilitate contract compliance, and other cost-effective emission reduction activities, taking into consideration air quality and health effects. Second, priority is to be given to cost-effective congestion mitigation activities that provide air quality benefits.

The development of a CMAQ-eligible project may occur through a public-private partnership. Private entity proposals that benefit the general public by clearly reducing emissions require a legal written agreement between the public agency and private or nonprofit entity specifying the use of funds, roles and responsibilities of participating entities, cost sharing arrangements for capital investments and/or operating expenses, and how the disposition of land, facilities, and equipment should original terms of the agreement be changed. Eligible costs under this section may not include costs to fund an obligation imposed on private sector or nonprofit entities under the CAA or any other federal law except where the incremental portion of a project that exceeds the obligation under Federal law.

**Table 1. Eligible CMAQ Activities and Projects**

- 1. Transportation control measures (TCMs) found in 42 U.S.C. §7408(f)(1)**
  - programs for improved public transit
  - restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles
  - employer-based transportation management plans, including incentives
  - trip-reduction ordinances
  - traffic flow improvement programs that achieve emission reductions
  - fringe and transportation corridor parking facilities serving multiple-occupancy vehicle programs or transit service
  - programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use
  - programs for the provision of all forms of high-occupancy, shared ride services
  - programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place
  - programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas

- programs to control extended idling of vehicles
  - programs to reduce motor vehicle emissions from extreme cold-start conditions
  - employer-sponsored programs to permit flexible work schedules
  - programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity
  - programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest
- 2. Extreme Low-Temperature Cold Start Programs**
- retrofitting vehicles and fleets with water and oil heaters
  - installing electrical outlets and equipment in publicly-owned garages or fleet storage facilities
- 3. Alternative Fuels and Vehicles**
- establishment of publicly-owned fueling facilities and other infrastructure needed to fuel alternative-fuel vehicles, unless privately-owned fueling stations are in place and reasonably accessible
  - support the conversion of private fueling facility to support alternative fuels through a public-private partnership
  - purchase of publicly-owned non-transit alternative fuel vehicles, including passenger vehicles, refuse trucks, street cleaners, and others
  - costs associated with converting fleets to run on alternative fuels
  - for private vehicles, the cost difference between alternative fuel vehicles and comparable conventional fuel vehicles
  - hybrid vehicles that have lower emission rates than their non-hybrid counterparts
  - hybrid passenger vehicles that meet EPA low emission and energy efficiency requirements for certification under the HOV exception provisions of SAFETEA-LU
  - projects involving heavier vehicles, including refuse haulers and delivery trucks may be eligible based on a comparison of the emissions projections of these larger candidate vehicles and other comparable models
- 4. Congestion Reduction & Traffic Flow Improvements**
- traditional traffic flow improvements, such as the construction of roundabouts, HOV lanes, left-turn or other managed lanes are eligible provided they demonstrate net emissions benefits
  - Intelligent Transportation Systems (ITS) projects such as traffic signal synchronization projects, traffic management projects, and regional multimodal traveler information systems, traffic signal control systems, freeway management systems, electronic toll-collection systems, transit management systems, and incident management programs
  - Value/Congestion Pricing projects that generate an emissions reduction, including, but not limited to: tolling infrastructure, such as transponders and other electronic toll or fare payment systems; small roadway modifications to enable tolling; marketing, public outreach efforts to expand and encourage the use of eligible pricing measures; and support services, such as transit in a newly tolled corridor
  - innovative pricing approaches supported through the Value Pricing Pilot Program
  - operating expenses for traffic flow improvements for a period not to exceed three years if shown to produce air quality benefits, if the expenses are incurred from new or additional services, and if previous funding mechanisms, such as fares or fees for services, are not displaced
  - projects or programs that involve the purchase of integrated, interoperable emergency communications equipment
- 5. Transit Improvements**
- new transit facilities (e.g., lines, stations, terminals, transfer facilities) are eligible if they are associated with new or enhanced mass transit service
  - rehabilitation of a facility may be eligible if the vast majority of the project involves physical improvements that will increase capacity and results in an increase in transit ridership
  - new transit vehicles (bus, rail, or van) to expand fleet or replace existing vehicles
  - diesel engine retrofits, such as replacement engines and exhaust after-treatment devices, are eligible if certified or verified by the EPA or CARB
  - other transit equipment may be eligible if it represents a major system-wide upgrade that will significantly improve speed or reliability of transit service, such as advanced signal and communications systems
  - fuel, whether conventional or alternative fuel, is an eligible expense only as part of a project providing operating assistance for new or expanded transit service, including fuel and fuel additives considered diesel retrofit technologies by EPA or CARB
  - operating assistance, including labor, fuel, maintenance, and related expenses, to introduce new transit service or expand existing transit service s is eligible for a maximum of 3 years
  - regular transit fares may be subsidized as part of a comprehensive area-wide program to prevent exceedances of NAAQS during periods of high pollutant levels; must be combined with a marketing program to inform SOV drivers of other transportation options

**6. Bicycle and Pedestrian Facilities and Programs**

- construction of bicycle and pedestrian facilities (paths, bike racks, support facilities, etc.) that are not exclusively recreational and reduce vehicle trips
- non-construction outreach projects related to safe bicycle use
- establishment and funding of State bicycle/pedestrian coordinator positions for promoting and facilitating nonmotorized transportation modes through public education, safety programs, etc.

**7. Travel Demand Management**

- activities explicitly aimed at reducing SOV travel and associated emissions including fringe parking, traveler information services, shuttle services, guaranteed ride home programs, market research and planning in support Transportation Demand Management implementation, carpools, vanpools, traffic calming measures, parking pricing, variable road pricing, telecommuting, and employer-based commuter choice programs
- capital expenses and up to 3 years of operating assistance to administer and manage new or expanded TDM programs
- marketing and outreach efforts to expand use of TDM measures may be funded indefinitely, but only if broken out as distinct line items
- telecommuting activities including planning, preparing technical and feasibility studies, and training

**8. Public Education and Outreach Activities**

- a wide range of public education and outreach activities, including activities that promote new or existing transportation services, developing messages and advertising materials (including market research, focus groups, and creative), placing messages and materials, evaluating message and material dissemination and public awareness, technical assistance, programs that promote the Tax Code provision related to commute benefits, transit “store” operations, and any other activities that help forward less-polluting transportation options

**9. Transportation Management Associations**

- TMA start-up costs and up to 3 years of operating assistance

**10. Carpooling and Vanpooling**

- carpools and vanpools marketing covers existing, expanded, and new activities to increase the use of carpools and vanpools and includes the purchase and use of computerized matching software and outreach to employers and guaranteed ride home programs
- vanpool vehicle capital costs include purchasing or leasing vans that do not directly compete with or impede private sector initiatives; vanpool operating expenses are limited to 3 years and include empty-seat subsidies, maintenance, insurance, administration, and other related expenses

**11. Freight/Intermodal**

- projects and programs (e.g. new diesel engine technology or retrofits of vehicles or engines, nonroad mobile freight projects) that provide a transportation function and target freight capital costs including rolling stock or ground infrastructure are eligible provided that air quality benefits can be demonstrated

**12. Diesel Engine Retrofits & Other Advanced Truck Technologies**

- applicable to onroad motor vehicles and nonroad construction equipment, project types in the diesel retrofit area include: diesel engine replacement, full engine rebuilding and reconditioning, the purchase and installation of after-treatment hardware including particulate matter traps and oxidation catalysts, and other technologies, and support for heavy-duty vehicle retirements programs
- purchase and installation of emission control equipment on school buses
- refueling projects (e.g., ultra-low sulfur diesel), but only if required to support the installation of emissions control equipment, repowering, rebuilding, or other retrofits of nonroad engines and only until the standards are effective and the fuel becomes commonly available through the regional supply and logistics chain. Eligible costs are limited to the difference between standard nonroad diesel fuel and ULSD
- outreach activities that provide information exchange and technical assistance to diesel owners and operators on retrofit options
- under a public-private partnership, projects for upgrading long-haul heavy-duty diesel trucks with advanced technologies, such as idle reduction devices, cab and trailer aerodynamic fixtures, and single-wide or other efficient tires are eligible

**13. Idle Reduction**

- capital costs of off-board projects (e.g., truck stop electrification projects) that reduce emissions and are located within, or in proximity to and primarily benefitting a nonattainment or maintenance area
- capital costs of on-board projects (e.g., auxiliary power units, direct fired heaters, etc.) the heavy-duty vehicle must travel within, or in proximity to and primarily benefitting a nonattainment or maintenance area

**14. Training**

- funds to support training and educational development for the transportation workforce must be directly related to implementing air quality improvements and be approved in advance by the FHWA Division Office

**15. Inspection/Maintenance (I/M) Programs**

- for publicly or privately owned I/M facilities that constitute new or additional efforts eligible activities include construction of facilities, purchase of equipment, I/M program development, and one-time start-up activities, such as updating quality assurance software or developing a mechanic training curriculum
- operating expenses are eligible for a maximum of three years
- State or local I/M program related administrative costs are eligible in States that rely on privately owned I/M facilities
- privately-owned I/M facilities such as service stations, that own the equipment and conduct emission test-and-repair services, requires a public-private partnership
- establishment of “portable” I/M programs, including remote sensing providing that they are public services, reduce emissions, and meet relevant regulations

**16. Experimental Pilot Projects**

- an “experimental” project or program must be defined as a transportation project and be expected to reduce emissions by decreasing vehicle miles traveled (VMT), fuel consumption, congestion, or by other factors

**17. In particulate matter nonattainment or maintenance areas, examples of eligible projects and programs include:**

- paving dirt roads
- street sweeping equipment

**18. Some specific eligible activities included under MAP-21:**

- Acquisition of diesel retrofits, including tailpipe emissions control devices, and the provision of diesel-related outreach activities.
- Intermodal equipment and facility projects that target diesel freight emissions through direct exhaust control from vehicles or indirect emissions reductions through improvements in freight network logistics.
- Alternative fuel projects including participation in vehicle acquisitions, engine conversions, and refueling facilities.
- Establishment or operation of a traffic monitoring, management, and control facility, including the installation of advanced truck stop electrification systems.
- Projects that improve traffic flow, including efforts to provide signal systemization, construct HOV lanes, streamline intersections, add turning lanes, improve transportation systems management and operations that mitigate congestion and improve air quality, and implement ITS and other CMAQ-eligible projects, including efforts to improve incident and emergency response or improve mobility, such as through real time traffic, transit and multimodal traveler information.
- Projects or programs that shift travel demand to nonpeak hours or other transportation modes, increase vehicle occupancy rates, or otherwise reduce demand through initiatives, such as teleworking, ridesharing, pricing, and others.
- Transit investments, including transit vehicle acquisitions and construction of new facilities or improvements to facilities that increase transit capacity. The MAP-21 provision on operating assistance (23 USC 149(m)) is being reviewed and guidance interpreting the provision will be issued in the future.
- Non-recreational bicycle transportation and pedestrian improvements that provide a reduction in single-occupant vehicle travel.
- Vehicle inspection and maintenance programs.

**Table 2. Ineligible CMAQ Activities and Projects**

- 1. Projects outside of the nonattainment or maintenance area boundaries, except in cases where the project is located in close proximity to the nonattainment or maintenance area and the benefits will be realized primarily within the nonattainment or maintenance area**
- 2. Light-duty vehicle scrappage programs**
- 3. Projects that add new capacity for single-occupancy vehicle (SOV) are ineligible for CMAQ funding unless construction is limited to high occupancy vehicle (HOV) lanes with the exception of HOV facilities that are available to SOV only at off-peak times**
- 4. Routine maintenance and rehabilitation projects (e.g., replacement-in-kind of track or other equipment, reconstruction of bridges, stations, and other facilities, and repaving or repairing roads) are ineligible for CMAQ funding as they only maintain existing levels of highway and transit service, and therefore do not reduce emissions**
- 5. Administrative costs of the CMAQ program may not be defrayed with program funds**
- 6. Projects that do not meet the specific eligibility requirements under United States Code titles 23 or 49**
- 7. Stand-alone projects to purchase fuel, except in certain states**
- 8. Routine preventive maintenance for vehicles is not eligible as it only returns the vehicles to baseline conditions**
- 9. Operating assistance for truck stop electrification projects is not an eligible activity since these projects generate their own revenue stream and can therefore recover all operating expenses**

TABLE 5-5

FUNDING PERCENT BY MODE (Expressed by Percentage)								
Mode	Program Area	½ Cent	ADOT Funds	FTA (5307)	FTA (5309)	CMAQ	MAG-STP	Total Regional Funding
Freeways	Capital	52.0	100.0	0.0	0.0	19.1	0.0	55.0
	Operations	4.2	0.0	0.0	0.0	0.0	0.0	2.2
	Total	56.2	100.0	0.0	0.0	19.1	0.0	57.3
Streets	Capital	10.2	0.0	0.0	0.0	13.4	100.0	9.3
Buses	Capital	4.2	0.0	90.6	12.7	0.0	0.0	8.4
	Operations	11.9	0.0	0.0	0.0	0.0	0.0	6.4
	Total	16.0	0.0	90.6	12.7	0.0	0.0	14.8
LRT	Capital	14.4	0.0	0.0	87.3	35.9	0.0	14.7
Other Transit	Capital	0.4	0.0	9.4	0.0	0.0	0.0	0.8
	Operations	2.5	0.0	0.0	0.0	0.0	0.0	1.3
	Total	2.9	0.0	9.4	0.0	0.0	0.0	2.1
Planning	Programs	0.4	0.0	0.0	0.0	0.0	0.0	0.2
Bicycle/ Pedestrian	Capital	0.0	0.0	0.0	0.0	17.0	0.0	0.8
Air Quality	Programs	0.0	0.0	0.0	0.0	14.6	0.0	0.7
Total Funding	Capital	81.1	100.0	100.0	100.0	85.4	100.0	89.1
	Operations	18.9	0.0	0.0	0.0	14.6	0.0	10.9
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percent Funding by Major Mode								
Freeways		56.2	100.0	0.0	0.0	19.1	0.0	57.3
Streets		10.2	0.0	0.0	0.0	13.4	100.0	9.3
Transit		33.3	0.0	100.0	100.0	35.9	0.0	31.7
Other		0.4	0.0	0.0	0.0	31.6	0.0	1.8
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Maricopa Association of Governments



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October 18, 2012

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Dean Giles, Air Quality Planning Program Specialist

SUBJECT: EVALUATION OF PROPOSED PM-10 CERTIFIED STREET SWEEPER PROJECTS FOR FY 2013 CMAQ FUNDING

The Maricopa Association of Governments staff has evaluated proposed PM-10 Certified Street Sweeper Projects for emission reductions and corresponding cost-effectiveness for FY 2013 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds. Six projects requesting approximately \$1.2 million in federal funds were evaluated. The evaluation of these projects and supplemental information are included in the attachment. The proposed projects have been listed in order of cost-effectiveness based on the amount of CMAQ funding requested. Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to recommend a prioritized list of PM-10 Certified Street Sweeper Projects for FY 2013 CMAQ funding to the MAG Management Committee.

#### BACKGROUND

The purchase of PM-10 certified street sweeper projects supports the measure "PM-10 Efficient Street Sweepers" in the Revised MAG 1999 Serious Area Particulate Plan for PM-10. In addition, the MAG 2012 Five Percent Plan for PM-10 includes PM-10 Certified Street Sweepers. The FY 2012 Unified Planning Work Program and FY 2011-2015 MAG Transportation Improvement Program contain \$900,000 in FY 2013 CMAQ funding to encourage the purchase and utilization of PM-10 certified street sweepers. An additional \$346,973 in CMAQ is available from sweeper projects that have been requested to be deleted and from savings on sweepers that have cost less than anticipated, for a total amount of \$1,246,973. The purpose of the CMAQ program is to fund projects and programs in nonattainment and maintenance areas that assist in achieving air quality standards. A minimum local cash match of 5.7 percent on the CMAQ eligible portion of the project is required.

On August 6, 2012, MAG solicited PM-10 certified street sweeper projects in the Maricopa County PM-10 Nonattainment Area from member agencies. Eligible street sweepers are defined as those which have been certified by the South Coast Air Quality Management District as meeting that agency's Rule 1186 certification standards. Project requests were due by September 19, 2012.

## EVALUATION AND PROJECT RANKING

According to the approved MAG Federal Fund Programming Guidelines and Procedures, project applications are to be reviewed by the MAG Street Committee. On October 17, 2012, the Street Committee conducted a review of the PM-10 Certified Street Sweeper project applications. The attachment contains a draft summary of the discussion from the October 17, 2012 Street Committee meeting.

MAG staff estimated the emission reductions and cost-effectiveness using the CMAQ funding requested, based on the September 30, 2011 CMAQ Methodologies. Federal CMAQ guidance requires that the estimated emission reductions for each project submitted for CMAQ funding be considered during project selection. The FY 2013 PM-10 Certified Street Sweeper Project requests, evaluation, and supplemental information are provided in the attachment. The proposed projects have been listed in descending order of cost-effectiveness based on the amount of CMAQ funding requested.

Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to make a recommendation on a prioritized list of proposed projects for FY 2013 CMAQ funding to the MAG Management Committee. After the MAG Regional Council approval of projects for funding, MAG will issue a formal authorization to proceed with the purchase of the proposed street sweepers in a letter to the project sponsor. To assist MAG in reducing the amount of obligated federal funds, MAG is requesting that street sweepers be purchased and reimbursement be requested by the project sponsor within one year plus ten calendar days from the date of the MAG authorization letter.

If you have any questions or need additional information, please contact me at (602) 254-6300.

Attachment

# List of Proposed PM-10 Certified Street Sweeper Projects for FY 2013 CMAQ Funding

\$1,246,973 in CMAQ Funding is Available for Sweeper Projects

										Supplemental Information			
Agency	Federal Cost	Local Cost	Total Cost *	Daily Emission Reduction (Kilograms/day)	Cost-Effectiveness (CMAQ dollar cost per annual metric ton reduced)	The requested certified street sweeper will:				Have local resources been committed for additional staff or equipment to support the sweeper project?		Please indicate in what geographical area(s) the requested certified street sweeper will operate	Number of certified street sweepers owned and operated by your agency. ++
						Replace non-certified sweeper	Expand	Increase Frequency	Replace older certified sweeper	Yes	No		
Phoenix #2 +	\$194,318	\$11,746	\$206,064	427	\$178				✓	✓		11 <sup>th</sup> Ave. to 1 <sup>st</sup> Ave., West Bethany Home Rd. to West Pecos Rd.	34
Phoenix #1 +	\$194,318	\$11,746	\$206,064	419	\$181				✓	✓		11 <sup>th</sup> Ave. to 1 <sup>st</sup> Ave., West Bethany Home Rd. to West Pecos Rd.	34
Gilbert +	\$218,220	\$13,191	\$231,411	273	\$312				✓	✓		Baseline Rd. south to Elliot Rd., and Power Rd. west to Arizona Ave.	11
Tempe +	\$203,976	\$12,329	\$216,305	150	\$532				✓		✓	Ray Rd. to Continental Dr.; Evergreen Dr. to Priest Dr.	6
Maricopa County +	\$215,469	\$13,024	\$228,493	62	\$1,346				✓		✓	Various locations on county owned and maintained roads	7
Glendale	\$220,672	\$13,339	\$234,011	1	\$107,999		✓	✓	✓		✓	Southeast of Glendale Ave. and Glen Harbor Blvd.	7
<b>Total</b>	\$1,246,973												

\* Total cost for the CMAQ eligible portion of the project, excludes ineligible equipment.

+ Proposed sweeper projects for Phoenix #2, Phoenix #1, Gilbert, Tempe, and Maricopa County indicate sweeping within four miles of a PM-10 monitor.

++ The total number of certified street sweepers owned and operated by the agency, regardless of funding source.

Project Meeting Notes 10 17 2012 (3)

<b>Street Sweepers</b>	<b>Staff Notes from meeting on 10.17.2012, Street Committee (not official minutes)</b>	10.18.2012 MAG Update/response	Street Committee to recommend funding for project? Street Committee on 11-13-2012
PHX	2003 replacements, no comments from committee	-	
GLB	Miles sweeping, serves a small area and is a backup. About 22 sq. miles. Q: areas for trash collection: yes	-	
GLN	Area around the airport is being swept. Q: how many miles: 22 miles and 9 miles. Q: Do we need to sweep the airports? A: yes we have in the past. The airport does generate a lot of dust. And debris from the service vehicles. FAA funding? FAA usually only funds regular airport operations, and maintenance items are left to the city.	-	
MMA	322 lane mile to sweep. Age of sweeper to be replaced needs to be sent to MAG in 48 hours. Q:	<i>MAG received information that the sweeper being replaced is not CMAQ funded. This sweeper application should be considered a new sweeper application. Application is eligible</i>	
TMP	Arterials are swept once per week, 1100 lane miles. Run four sweepers continuously. Put in service 2005.	-	
Mesa	Not Eligible; purchased in 2006. Sweeper does have many hours: 4,512	<i>MAG will continue to develop the update to the sweeper useful life policy to include mileage, and review lemon policies for FHWA concurrence. Action will require RC approval. Schedule for early 2013.</i>	



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October 18, 2012

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Dean Giles, Air Quality Planning Program Specialist

SUBJECT: EVALUATION OF PROPOSED PM-10 PAVING UNPAVED ROAD PROJECTS FOR FY 2015, 2016, AND 2017 CMAQ FUNDING

The Maricopa Association of Governments staff has evaluated proposed PM-10 Paving Unpaved Road Projects for emission reductions and corresponding cost-effectiveness for FY 2015, 2016, and 2017 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds. In total, twelve unpaved road and alley projects requesting approximately \$14.1 million in federal funds were evaluated. Attachment A provides the proposed projects listed in order of cost-effectiveness based on the amount of CMAQ funding requested. Attachment B provides the proposed projects listed in order of PM-10 emission reductions. Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to rank the PM-10 Paving Unpaved Road Projects for FY 2015, 2016, and 2017 CMAQ funding to be forwarded to the MAG Transportation Review Committee.

### BACKGROUND

The MAG 2012 Five Percent Plan for PM-10 includes the paving of unpaved roads. For FY 2015, 2016, and 2017, the estimated CMAQ funding available for the programming of PM-10 Paving Unpaved Road Projects is \$5,455,468, \$5,746,340, and \$6,052,521, respectively. The estimated CMAQ amount is subject to change based on final funding levels from Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21). A minimum local cash match of 5.7 percent on the CMAQ eligible portion of the project is required. On August 6, 2012, MAG solicited PM-10 Paving Unpaved Road Projects in the Maricopa County PM-10 Nonattainment Area from member agencies. Project requests were due by September 19, 2012.

### EVALUATION AND PROJECT RANKING

According to the approved MAG Federal Fund Programming Guidelines and Procedures, project applications are to be reviewed by the MAG Street Committee. On October 17, 2012 the Street Committee conducted a review of the PM-10 Paving Unpaved Road project applications. Attachment C contains a summary of the discussion from the October 17, 2012 Street Committee meeting.

MAG staff estimated the emission reductions and cost-effectiveness using the CMAQ funding requested, based on the September 30, 2011 CMAQ Methodologies. Federal CMAQ guidance requires that the estimated emission reductions for each project submitted for CMAQ funding be considered during project selection. The evaluation of the proposed FY 2015, 2016, and 2017 PM-10 Paving Unpaved Road Projects is included in Attachment A and Attachment B. In Attachment A, the proposed projects for each funding year have been listed in descending order of cost-effectiveness based on the amount of CMAQ funding requested. Also, in Attachment B, the proposed projects have been listed in descending order of PM-10 emission reductions.

Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to rank the proposed PM-10 Paving Unpaved Road Projects for FY 2015, 2016, and 2017 CMAQ funding to be forwarded to the MAG Transportation Review Committee. The MAG Transportation Review Committee may consider the PM-10 Paving Unpaved Road Projects in January 2013. The recommendations may be considered by the MAG Management Committee, the Transportation Policy Committee, and the MAG Regional Council in February 2013.

If you have any questions or need additional information, please contact me at (602) 254-6300.

Attachment

**Proposed PM-10 Paving Unpaved Road Projects For FY 2015 CMAQ Funding Listed in Order of Cost Effectiveness**

**\$5,455,468\* available in FY 2015**

**Attachment A**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Maricopa County#6	Rockaway Hills Dr	Pave Dirt Roads	2015	0.7	0.00	0.00	114.06	114.06	\$381	\$235,750
Buckeye	Watson (~650' north of Van Buren alignment) to McDowell/Watson	Pave Dirt Roads	2015	0.88	0.00	0.00	236.67	236.67	\$750	\$964,532
Phoenix#1	Various locations in twelve quarter sections	Pave Dirt Alleys	2015	29.3	0.00	0.00	194.07	194.07	\$1,170	\$1,232,662
Maricopa County#4	3rd Avenue - Honda Bow Road to Circle Mountain Road, 3rd St - Linda Ln to Honda Bow Rd, 7th Ave - Honda Bow Rd to Leann Rd, 7th St - Linda Ln to Honda Bow Rd, 11th Ave - Honda Bow Rd to 13th Ave, Cavalry Rd - 7th Ave to 3rd Ave, Central Ave - BOM to Honda Bow Rd	Pave Dirt Roads	2015	4.37	0.00	0.00	308.75	308.75	\$1,237	\$2,074,600
Maricopa County#2	McLellan Rd from 103rd St to Signal Butte Rd, 104th St to McLellan Rd	Pave Dirt Roads	2015	0.825	0.00	0.00	61.92	61.92	\$1,346	\$452,640
<b>Subtotal</b>										<b>\$4,960,184</b>
<b>Amount Available</b>										<b>\$5,455,468</b>
<b>Balance</b>										<b>\$495,284</b>

**Proposed PM-10 Paving Unpaved Road Projects For FY 2016 CMAQ Funding Listed in Order of Cost Effectiveness**

**\$5,746,340\* available in FY 2016**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Chandler	Area between Dobson Rd, Alma School Rd, Elliot Rd and Warner Rd.	Pave Dirt Alleys	2016	15.3	0.00	0.00	118.38	118.38	\$887	\$570,515
Phoenix#2	Various locations in twelve quarter sections	Pave Dirt Alleys	2016	29.2	0.00	0.00	225.93	225.93	\$1,022	\$1,253,410
Surprise	Jomax Rd from 147th Ave to East City (133rd Avd)	Pave Dirt Roads	2016	1.5	0.00	0.00	77.06	77.06	\$1,690	\$707,250
Maricopa County#5	31st Ave - Olney Ave to McNeil St, 44th Ave - EOM to Carver Rd, 45th Ave - Estrella Dr to EOM, Olney Ave - BOR to 31st Ave	Pave Dirt Roads	2016	0.735	0.00	0.00	50.08	50.08	\$2,913	\$792,120
Maricopa County#1	10th St - Dove Valley Rd to Paint Your Wagon Tr, Dove Valley Rd - 12th St to 14th St	Pave Dirt Roads	2016	0.72	0.00	0.00	47.93	47.93	\$4,275	\$1,112,740
<b>Subtotal</b>										<b>\$4,436,035</b>
<b>Amount Available</b>										<b>\$5,746,340</b>
<b>Balance</b>										<b>\$1,310,305</b>

**Proposed PM-10 Paving Unpaved Road Projects For FY 2017 CMAQ Funding Listed in Order of Cost Effectiveness**

**\$6,052,521\* available in FY 2017**

**Attachment A**

<b>Agency</b>	<b>Location</b>	<b>Work Type</b>	<b>FY</b>	<b>Length (miles)</b>	<b>Emission Reduction Weighted TOG(kg/day)</b>	<b>Emission Reduction Weighted NOx(kg/day)</b>	<b>Emission Reduction Weighted PM10(kg/day)</b>	<b>Emission Reduction Weighted Total(kg/day)</b>	<b>Cost Effectiveness (\$/met.ton)</b>	<b>CMAQ Funds Requested</b>
Maricopa County#3	Hatfield Rd to 107th Ave	Pave Dirt Roads	2017	1.25	0.00	0.00	1,024.54	1,024.54	\$619	\$3,441,950
Phoenix#3	Various locations in nine quarter sections	Pave Dirt Alleys	2017	29.1	0.00	0.00	145.85	145.85	\$1,629	\$1,289,909
									<b>Subtotal</b>	<b>\$4,731,859</b>
									<b>Amount Available</b>	<b>\$6,052,521</b>
									<b>Balance</b>	<b>\$1,320,662</b>

\* The estimated CMAQ amount is subject to change based on final funding levels from MAP-21.

**Proposed PM-10 Paving Unpaved Road Projects For FY 2015 CMAQ Funding Listed in Order of PM-10 Emission Reductions**

**\$5,455,468\* available in FY 2015**

**Attachment B**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Maricopa County#4	3rd Avenue - Honda Bow Road to Circle Mountain Road, 3rd St - Linda Ln to Honda Bow Rd, 7th Ave - Honda Bow Rd to Leann Rd, 7th St - Linda Ln to Honda Bow Rd, 11th Ave - Honda Bow Rd to 13th Ave, Cavalry Rd - 7th Ave to 3rd Ave, Central Ave - BOM to Honda Bow Rd	Pave Dirt Roads	2015	4.37	0.00	0.00	308.75	308.75	\$1,237	\$2,074,600
Buckeye	Watson (~650' north of Van Buren alignment) to McDowell/Watson	Pave Dirt Roads	2015	0.88	0.00	0.00	236.67	236.67	\$750	\$964,532
Phoenix#1	Various locations in twelve quarter sections	Pave Dirt Alleys	2015	29.3	0.00	0.00	194.07	194.07	\$1,170	\$1,232,662
Maricopa County#6	Rockaway Hills Dr	Pave Dirt Roads	2015	0.7	0.00	0.00	114.06	114.06	\$381	\$235,750
Maricopa County#2	McLellan Rd from 103rd St to Signal Butte Rd, 104th St to McLellan Rd	Pave Dirt Roads	2015	0.825	0.00	0.00	61.92	61.92	\$1,346	\$452,640
<b>Subtotal</b>										<b>\$4,960,184</b>
<b>Amount Available</b>										<b>\$5,455,468</b>
<b>Balance</b>										<b>\$495,284</b>

**Proposed PM-10 Paving Unpaved Road Projects For FY 2016 CMAQ Funding Listed in Order of PM-10 Emission Reductions**

**\$5,746,340\* available in FY 2016**

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMAQ Funds Requested
Phoenix#2	Various locations in twelve quarter sections	Pave Dirt Alleys	2016	29.2	0.00	0.00	225.93	225.93	\$1,022	\$1,253,410
Chandler	Area between Dobson Rd, Alma School Rd, Elliot Rd and Warner Rd.	Pave Dirt Alleys	2016	15.3	0.00	0.00	118.38	118.38	\$887	\$570,515
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<b>Subtotal</b>										<b>\$4,436,035</b>
<b>Amount Available</b>										<b>\$5,746,340</b>
<b>Balance</b>										<b>\$1,310,305</b>

**Proposed PM-10 Paving Unpaved Road Projects For FY 2017 CMAQ Funding Listed in Order of PM-10 Emission Reductions**

**\$6,052,521\* available in FY 2017**

**Attachment B**

<b>Agency</b>	<b>Location</b>	<b>Work Type</b>	<b>FY</b>	<b>Length (miles)</b>	<b>Emission Reduction Weighted TOG(kg/day)</b>	<b>Emission Reduction Weighted NOx(kg/day)</b>	<b>Emission Reduction Weighted PM10(kg/day)</b>	<b>Emission Reduction Weighted Total(kg/day)</b>	<b>Cost Effectiveness (\$/met.ton)</b>	<b>CMAQ Funds Requested</b>
Maricopa County#3	Hatfield Rd to 107th Ave	Pave Dirt Roads	2017	1.25	0.00	0.00	1,024.54	1,024.54	\$619	\$3,441,950
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									<b>Subtotal</b>	<b>\$4,731,859</b>
									<b>Amount Available</b>	<b>\$6,052,521</b>
									<b>Balance</b>	<b>\$1,320,662</b>

\* The estimated CMAQ amount is subject to change based on final funding levels from MAP-21.

Project ID	Name of Agency	Staff Notes from meeting on 10.17.2012, Street Committee (not official minutes)	10.18.2012 MAG Update/response	Street Committee to recommend funding for project, to be heard at: Street Committee on 11-13-2012
BKY-Pave-1	Buckeye	<p>Scott Lowe: Public ROW, not a county road. Who owns the ROW? Public owns, county does not own. <b>MAG to find out who owns and is it eligible?</b> Funding has been allocated for ROW by the Community. Check Co. Assessor - no parcel num. Why would Buckeye propose to do this. City has annexed to the north sub division to the north. road has much traffic. Would Buckeye consider to annex? Yes, our intent would be to annex. Buckeye currently does complete some maintenance currently. Sub division is from the 70's. Curb and gutter is included in the application. Will MAG allow this under CMAQ. Curb and gutter will assist with the shoulder dust control. If curb and gutter cannot be recommended will you reduce the scope and proceed with project. Yes. Will you do drainage? It will be included in the design process. Drainage will need to be considered. It could increase cost. Rim and curb is what we are suggesting, not vertical. Would you consider safety Edge?</p>	<p><i>Determination of eligibility for "public benefit owned property", Pending further review and consultation with FHWA.</i></p>	
CHN-Pave-1	Chandler	<p>Dan Cook: Pave dirt alley project. Take out old millings, laid down with a machine. Not as good as street paving, but works well for alleys. Project is scalable. Approx. 15 miles of alleys in this area. Will adjust manholes etc. as needed. Garbage pickups are in the alley, varies by neighborhood, some alleys some on street. How does the paving hold with garbage trucks? Cranking the corners, maintenance is needed. Volumes? RV gates, 50 ADT estimated. Utilities, etc. What is the service life? We have been using for 5 years now, estimate that we will get 10 + years. Price per sq. foot for treatment? \$7.5 to 8.5 sq. yard. Any erosion problems? Drainage? We attached a detail, inverted crown, drains to street. We don't pave all the way to the walls. Millings from past projects will be utilized. Does Chandler allow residents to place items in alleys? Allot of illegal dumping; we are trying to address; solid waste will go in and pick up every two weeks.</p>		
MMA-Pave-1	Maricopa County	<p>Eric Mayer: Various locations, scoped by consultant, category 1,2,3, 4. One is easier done, Fours need to go on the TiP process, include ROW, Utilities, Drainage, etc. Low volume roads at this time. Dove Valley Rd has a few homes, state trust land, grader is required multiple times each year to address wash boarding, etc. No roads have curb and gutter. Utilities may be in each. Length and cross section: will you use thickened edge and or safety edge? Will use only the thickened edge. Low volume roads we don't use. Q: 2" over packed native? We are not using RDM guidelines. Q: 4 are the most difficult, you are using this program to address. A: MCDOT is addressing CAT 1 this year outside the program, CAT 2 next year. Observation more difficult projects may not be the best for federal. Want to get these done sooner than later. Since these are difficult, can you get your programming by 2015? A: we should have completed in 18 mo.'s, since we are in alluvial fans, we will need to do the pads. Anticipate to do them 15, 16, 17 based on each request. Will you be ready? Yes. Two segments in there; is cost for both segments? Yes.</p>		
MMA-Pave-2	Maricopa County	<p>Eric: Two segments displayed, maintain 2/3 of this. 600' short of end we do not maintain. ROW items, power pole items, maintenance to be determined. Heavy traffic, soil is silty. Q: ROW? A: 12 parcels to acquire, approx. 25', a mix of dedicated and private ownership. Strip annex exists, co maintains portion of intersection. County will get it in fee title.</p>		
MMA-Pave-3	Maricopa County	<p>Eric: Aqua Fria River, mining, politics, on state land, need ROW, cross a river. Of the six projects this is the least highest priority. Q: you will approach state lands and request ROW? Yes. Q: Mining, still going on? Yes. Q: detail? A: Standard detail will be modified and is in cost estimate. Q: Low volume road, what scare protection? A: engineering decision, we want to address dust. Q: what other ADT? A: ;house on the over side of the river. Most dust is caused by the mining operations. Q: Another ADEQ regs does have impact on mining operations. They may need to put down hard surface at their cost. A: will look at. Q: will this be only a 2 year solution due to the river? What can you do to add to longevity? Looks like many unknowns in this project, will the county bear the extra cost in this project as items are revealed? A: yes. Q: will you go for closeout? A: it is our last priority, we could eliminate it if needed. If we commit, we will pay for the extra cost. Q: Could we recommend to eliminate if another project is jeopardized. Q: who maintains? A: Co does maintain. Co does maintain this one, may or may not own all of it. Q: looking at the map, Happy Valley Rd why this connection? No additional benefit? River? A: Looked at due to truck traffic, extremely expensive solution. Q: should look at the ADEQ option via the mining. Q: Open to traffic, barriers are . . . not there all the time. Q: does the mining have another out? A: on Hatfield road only.</p>		

Project Meeting Notes 10 17 2012 (3)

Project ID	Name of Agency	Staff Notes from meeting on 10.17.2012, Street Committee (not official minutes)	10.18.2012 MAG Update/response	Street Committee to recommend funding for project, to be heard at: Street Committee on 11-13-2012
MMA-Pave-4	Maricopa County	Eric: Honda Bow to Circle Mt: W of 7th St, we have a lot of roads feeding into this. State Trust land, elevation items, alluvial fan soils, a/b may be needed, houses. Q: how many segments? A: 3 St, 3rd ave, 7 ave, 11 ave, . . . Area is not built out. Eric explains land use in area. Two areas to acquire ROW in Honda Bow area. Central has highest ADT in this area. Q: Wildcat subs do not go through the regular process: A: most individual developments. Q: State regs require during subdividing to assess fees. A: many times state land does this w/o county concurrence. Q: Skunk Crk crossing, roger crk; what about the water crossings; drainage ways will add to the cost, 404 permitting process will be needed? A: yes, and someone has thrown in a pipe and put in a road; will need to be addressed. Q: significant crossings on this; cost estimate w/b costly, can you do for \$2.6 m, will you fund the rest of this project? A: We will cover the costs. The on call did the assessment, they did not do a full scoping, conservative estimate. Have been working on all these projects and will continue scoping. Q: maximize the cost for paving these roads. A: this is one of the highest ADT in the area. Q: Will you minimize your scope if you cost estimates come back too high, can you come back to this committee and review? A: Yes		
MMA-Pave-5	Maricopa County	Eric and Chris Plumb: most of the projects need ROW acqs. We do hundreds of traffic counts each year to evaluate what we needed; 800 miles with more than 10 dwelling units on. Many roads are courtesy grade roads (not owned by co), but move up on the list due to ADT. Co ownership is actually quite limited for roads that need to be paved. Board reports complaints and staff will respond, i.e. study and current application. Q: the 1978 policy states not to pave how are you addressing? A: they won't open a road that is not declared. If the Board wants it, then it is completed to co standards and then is put into our system officially accepted. then we maintain forever. Q: 31 ave project is in a county area of development; .7 mile of roadway, cost seems very high for this application and looks more complex. The numbers seem inconsistent overall? A: This app for 31 ave, we just completed McNeil there. 45th ave has an abandoned ditch and wall to be removed. Q: you looking at a minimum match.		
MMA-Pave-6	Maricopa County	Eric: Rockaway Hills: new housing is going in in the area. Blade operator goes here, takes all day. Has water crossing. All roads proposed attach to or go to another paved road. Must connect to a currently paved road. There is a High Sch out there, does generate traffic.		
PHX-Pave-1	Phoenix	Rubben Lolly: Alley program, city has only 800,000 each year for paving, this application will assist and is requesting ... 1.3 miles to be paved. Q: estimated ADT is 10 /day. Q: is Phx may not have any dirt roads to pave, so they are now moving to alleyways. C: most estimate a bit high, phx standard seems low but is just an estimate. Counts are completed on alleyways typically. Cities may only have alleys left.		
PHX-Pave-2	Phoenix	Sunnyslope area		
PHX-Pave-3	Phoenix	CC, Shea, Cactus, Dunlap. Q: similar to a chip seal, Q: lasts? A: truck turning does effect. Q: cost A: 7 per sq. yard.		
SUR-Pave-1	Surprise	Terry Lowe: 1.5 miles to connect portion of Jomax road currently paved. Two low water crossings, 2014 design for 2016 construction. State lands purchase needed. Q: doesn't this connect to another paved road? A: yes. Q: residential area? A: yes, some is in county and portions are paved. Q: blue is state land A: yes Q: continuing paving on a road that had paving then did not for the section.		

**2012 Exceedances of the 24-Hour PM-10 Standard by Date**  
(Preliminary Data Through September 6, 2012)

Date	Monitor	24-Hour Avg. PM-10 Concentration in $\mu\text{g}/\text{m}^3$	Additional Information
January 21, 2012	West 43rd Ave.	209.6	Frontal system high winds. During the event, a maximum west-southwest wind speed of 32.8 mph was recorded and an hourly average of 17.9 mph.
January 22, 2012	Higley	163.3	Residual dust from January 21, 2012 frontal system high winds.
February 27, 2012	West 43rd Ave.	167.8	Frontal system high winds. Three continuous Pinal County PM-10 monitors recorded exceedances on February 27, 2012.
April 3, 2012	West Chandler	402.4	According to the Arizona Department of Environmental Quality, the exceedances on April 3, 2012 and April 4, 2012 were caused by localized agricultural activity. Concentrations began increasing between 9:00 pm and 10:00 pm on April 3, 2012 and remained elevated through approximately 1:30 am on April 4, 2012.
April 4, 2012	West Chandler	196.5	According to the Arizona Department of Environmental Quality, the exceedances on April 3, 2012 and April 4, 2012 were caused by localized agricultural activity. Concentrations began increasing between 9:00 pm and 10:00 pm on April 3, 2012 and remained elevated through approximately 1:30 am on April 4, 2012.
June 16, 2012	Buckeye	202.7	Regional dust storm from thunderstorm outflow in Pinal County. The maximum southeast wind speed reached 28 mph with gusts of 33 mph.
	Durango	187.1	
	Dysart	168.2	
	Higley	195.0	
	South Phoenix	165.6	
	West 43rd Ave.	211.6	
West Phoenix	189.8		
June 18, 2012	West 43rd Ave.	174.5	According to the Maricopa County Air Quality Department, there was a forklift driving around on an unpaved surface during high winds immediately adjacent to the West 43rd Avenue monitor.
June 27, 2012	Central Phoenix	340.9	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
	Durango	221.8	
	Glendale	331.0	
	Greenwood	324.3	
	Higley	224.9	
	North Phoenix	179.2	
	South Phoenix	343.4	
	Supersite	330.1	
	Tempe	169.8	
	West Chandler	222.3	
	West 43rd Ave.	220.8	
Zuni Hills	285.5		
July 11, 2012	Durango	218.2	Thunderstorm outflow winds in the late evening. The maximum south-southeast wind speed reached 24 mph with gusts of 33 mph.
	Greenwood	212.8	
	South Phoenix	285.5	
	West 43rd Ave.	173.2	
August 6, 2012	Buckeye	205.5	According to the Maricopa County Air Quality Department, the exceedance on August 6, 2012 was caused by the residue of the dust generated from an overnight storm taking a long time to dissipate.
August 11, 2012	Higley	159.7	Regional dust storm. Two continuous Pinal County PM-10 monitors recorded exceedances on August 11, 2012.
	West Chandler	220.1	
August 14, 2012	Durango	180.0	Thunderstorm outflow winds in the late evening. The maximum south wind speed reached 33 mph with gusts of 44 mph. Three continuous Pinal County PM-10 monitors also recorded exceedances on August 14, 2012.
	West 43rd Ave.	255.3	
September 6, 2012	West Chandler	165.2	Regional dust storm. Two continuous Pinal County PM-10 monitors recorded exceedances on September 6, 2012.

**2012 Exceedances of the 24-Hour PM-10 Standard by Monitor**  
(Preliminary Data Through September 6, 2012)

Monitor	Date	24-Hour Avg. PM-10 Concentration in $\mu\text{g}/\text{m}^3$	Additional Information
Buckeye	June 16, 2012	202.7	Regional dust storm from thunderstorm outflow in Pinal County. The maximum southeast wind speed reached 28 mph with gusts of 33 mph.
	August 6, 2012	205.5	According to the Maricopa County Air Quality Department, the exceedance on August 6, 2012 was caused by the residue of the dust generated from an overnight storm taking a long time to dissipate.
Central Phoenix	June 27, 2012	340.9	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
Durango	June 16, 2012	187.1	Regional dust storm from thunderstorm outflow in Pinal County. The maximum southeast wind speed reached 28 mph with gusts of 33 mph.
	June 27, 2012	221.8	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
	July 11, 2012	218.2	Thunderstorm outflow winds in the late evening. The maximum south-southeast wind speed reached 24 mph with gusts of 33 mph.
	August 14, 2012	180.0	Thunderstorm outflow winds in the late evening. The maximum south wind speed reached 33 mph with gusts of 44 mph. Three continuous Pinal County PM-10 monitors also recorded exceedances on August 14, 2012.
Dysart	June 16, 2012	168.2	Regional dust storm from thunderstorm outflow in Pinal County. The maximum southeast wind speed reached 28 mph with gusts of 33 mph.
Glendale	June 27, 2012	331.0	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
Greenwood	June 27, 2012	324.3	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
	July 11, 2012	212.8	Thunderstorm outflow winds in the late evening. The maximum south-southeast wind speed reached 24 mph with gusts of 33 mph.
Higley	January 22, 2012	163.3	Residual dust from January 21, 2012 frontal system high winds.
	June 16, 2012	195.0	Regional dust storm from thunderstorm outflow in Pinal County. The maximum southeast wind speed reached 28 mph with gusts of 33 mph.
	June 27, 2012	224.9	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
	August 11, 2012	159.7	Regional dust storm. Two continuous Pinal County PM-10 monitors recorded exceedances on August 11, 2012.
North Phoenix	June 27, 2012	179.2	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
South Phoenix	June 16, 2012	165.6	Regional dust storm from thunderstorm outflow in Pinal County. The maximum southeast wind speed reached 28 mph with gusts of 33 mph.
	June 27, 2012	343.4	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
	July 11, 2012	285.5	Thunderstorm outflow winds in the late evening. The maximum south-southeast wind speed reached 24 mph with gusts of 33 mph.
Supersite	June 27, 2012	330.1	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
Tempe	June 27, 2012	169.8	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.

Monitor	Date	24-Hour Avg. PM-10 Concentration in $\mu\text{g}/\text{m}^3$	Additional Information
West Chandler	April 3, 2012	402.4	According to the Arizona Department of Environmental Quality, the exceedances on April 3, 2012 and April 4, 2012 were caused by localized agricultural activity. Concentrations began increasing between 9:00 pm and 10:00 pm on April 3, 2012 and remained elevated through approximately 1:30 am on April 4, 2012.
	April 4, 2012	196.5	According to the Arizona Department of Environmental Quality, the exceedances on April 3, 2012 and April 4, 2012 were caused by localized agricultural activity. Concentrations began increasing between 9:00 pm and 10:00 pm on April 3, 2012 and remained elevated through approximately 1:30 am on April 4, 2012.
	June 27, 2012	222.3	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
	August 11, 2012	220.1	Regional dust storm. Two continuous Pinal County PM-10 monitors recorded exceedances on August 11, 2012.
	September 6, 2012	165.2	Regional dust storm. Two continuous Pinal County PM-10 monitors recorded exceedances on September 6, 2012.
West Phoenix	June 16, 2012	189.8	Regional dust storm from thunderstorm outflow in Pinal County. The maximum southeast wind speed reached 28 mph with gusts of 33 mph.
West 43rd Ave.	January 21, 2012	209.6	Frontal system high winds. During the event, a maximum west-southwest wind speed of 32.8 mph was recorded and an hourly average of 17.9 mph.
	February 27, 2012	167.8	Frontal system high winds. Three continuous Pinal County PM-10 monitors recorded exceedances on February 27, 2012.
	June 16, 2012	211.6	Regional dust storm from thunderstorm outflow in Pinal County. The maximum southeast wind speed reached 28 mph with gusts of 33 mph.
	June 18, 2012	174.5	According to the Maricopa County Air Quality Department, there was a forklift driving around on an unpaved surface during high winds immediately adjacent to the West 43rd Avenue monitor.
	June 27, 2012	220.8	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.
	July 11, 2012	173.2	Thunderstorm outflow winds in the late evening. The maximum south-southeast wind speed reached 24 mph with gusts of 33 mph.
	August 14, 2012	255.3	Thunderstorm outflow winds in the late evening. The maximum south wind speed reached 33 mph with gusts of 44 mph. Three continuous Pinal County PM-10 monitors also recorded exceedances on August 14, 2012.
Zuni Hills	June 27, 2012	285.5	Regional dust storm. The maximum south wind speed reached 30 mph with gusts of 44 mph.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

SEP 06 2012

OFFICE OF THE  
REGIONAL ADMINISTRATOR

Mr. Eric Massey  
Director, Air Division  
Arizona Department of Environmental Quality  
1110 W. Washington St.  
Phoenix, Arizona 85007

Dear Mr. Massey:

This letter responds to Arizona Department of Environmental Quality's (ADEQ) March 14, 2012 submittal justifying that emissions generated by monsoonal thunderstorm outflow winds caused exceedances of the PM<sub>10</sub> NAAQS in the Phoenix PM<sub>10</sub> nonattainment area at numerous monitoring locations from July 3 – July 8, 2011.

EPA has reviewed the documentation provided by ADEQ to demonstrate that these exceedances on July 3 – July 8, 2011 meet the criteria for an exceptional event in the Exceptional Events Rule (EER). We note that the information and analyses presented in ADEQ's submittal do not represent all possible evidence for exceptional event packages, and additional or alternate evidence may be necessary to make an exceptional event determination in other instances or for other types of events. In the submitted demonstration for the dates of July 3 – July 8, 2011, EPA concurs based on the weight of the evidence that ADEQ has successfully made the demonstrations referred to in 40 CFR §50.14 to EPA's satisfaction. In addition, ADEQ has met the schedule and procedural requirements in section 50.14(c) with respect to the same data. A more detailed assessment of ADEQ's demonstration is enclosed. My staff has or shortly will enter "concurrence flags" for these data into EPA's AQS data system.

Based on these determinations, EPA will exclude these data from the following types of calculations and activities:

- EPA's Air Quality Data system (AQS) will not count these days as exceedances when generating user reports, or include them in design values estimates, unless the AQS user specifically indicates that they should be included.
- EPA will accept the exclusion of these data for the purposes of selecting appropriate background concentrations for New Source Review air quality analyses.<sup>1</sup>
- EPA will accept the exclusion of these data for the purposes of selecting appropriate background concentrations for transportation conformity hot spot analyses.<sup>2</sup>

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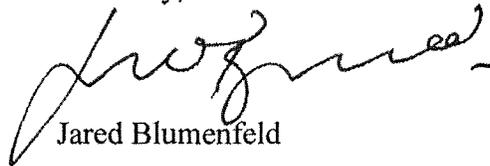
<sup>1</sup> If we are the permitting authority, we will propose permits on this basis. If we are commenting on another permitting authority's proposed action, our comments will be consistent with the determinations in this letter.

<sup>2</sup> Applicable only to PM<sub>10</sub> and PM<sub>2.5</sub>.

In addition, EPA will rely on calculated values that exclude this data in proposed regulatory actions, such as a proposed designation, classification, attainment demonstration, or finding as to whether the Phoenix PM<sub>10</sub> nonattainment area has met the PM<sub>10</sub> NAAQS. These regulatory actions require EPA to provide an opportunity for public comment prior to taking a final Agency action. If EPA is pursuing one of these actions for the Phoenix PM<sub>10</sub> nonattainment area, EPA will open a new comment period during which EPA may receive comments on the exceptional event submission you have made and the determinations conveyed in this letter. If so, we must consider and respond to those comments before taking final regulatory action. Accordingly, the determinations conveyed in this letter do not constitute final EPA action regarding any matter on which EPA is required to provide an opportunity for public comment. In particular, this applies to determinations regarding the attainment status or classification of the area. Final actions will take place only after EPA completes notice and comment rulemaking on those determinations. As an additional clarification, the determinations conveyed in this letter are applicable only to determinations incorporating the submitted data relative to the PM<sub>10</sub> NAAQS.

If you have any questions or wish to discuss this matter further, please contact Deborah Jordan, Director of the Air Division at (415) 947-8715.

Sincerely,

A handwritten signature in black ink, appearing to read "Jared Blumenfeld", is written over the typed name below it.

Jared Blumenfeld

Enclosure

cc: Theresa Rigney, ADEQ  
Bryan Paris, ADEQ

## EXCEPTIONAL EVENTS RULE REQUIREMENTS

EPA promulgated the Exceptional Events Rule in 2007, pursuant to the 2005 amendment of Clean Air Act (CAA) Section 319. The EER added 40 CFR §50.1(j), (k) and (l); §50.14; and §51.930 to the Code of Federal Regulations (CFR). These sections contain definitions, criteria for EPA approval, procedural requirements, and requirements for air agency demonstrations, all of which must be met before EPA can concur under the EER on the exclusion of air quality data from regulatory decisions.

Under 40 CFR §50.14(c)(3)(iv), the air agency demonstration to justify exclusion of data must provide evidence that:

- A. "The event satisfies the criteria set forth in 40 CFR §50.1(j)" for the definition of an exceptional event;
  - The event "affects air quality."
  - The event "is not reasonably controllable or preventable."
  - The event is "caused by human activity that is unlikely to recur at a particular location or [is] a natural event."<sup>1</sup>
- B. "There is a clear causal relationship between the measurement under consideration and the event that is claimed to have affected the air quality in the area;"
- C. "The event is associated with a measured concentration in excess of normal historical fluctuations, including background;" and
- D. "There would have been no exceedance or violation but for the event."

## SUMMARY

### Overview

On March 14, 2011, ADEQ submitted exceptional events demonstrations for 29 exceedances of the 24-hour PM<sub>10</sub> standard that occurred at several monitoring stations within the Phoenix PM<sub>10</sub> nonattainment area on the following days: July 3, July 4, July 5, July 7, and July 8, 2011. Table 1 summarizes these exceedances.

ADEQ describes the July 3<sup>rd</sup> and 5<sup>th</sup> events as "large-scale and widespread dust events with mostly south-southeasterly winds carrying in the dust on the 3<sup>rd</sup>, and southeasterly winds carrying a massive dust wall into the Valley on the 5<sup>th</sup>," while the July 4<sup>th</sup> and 7<sup>th</sup> events "were smaller in scale, but were still related to thunderstorm activity and thunderstorm outflow boundary winds." Due to the timing of the July 7<sup>th</sup> event, ADEQ explains that, "the impacts in Apache Junction may have occurred around the midnight hour, leading to the exceedances there being measured for July 8<sup>th</sup>." ADEQ provides a comprehensive description and discussion of each of these events in Sections I, II, and V of the demonstration.

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<sup>1</sup>A natural event is further described in 40 CFR 50.1(k) as "an event in which human activity plays little or no direct causal role."

Table 1: EPA PM<sub>10</sub> Exceedance Summary

Exceedance Date	Monitor/Site Name	AQS ID	24-hour Avg. (µg/m <sup>3</sup> )
July 3, 2011	Buckeye	04-013-4011-1	385
	Central Phoenix	04-013-3002-4	279
	Durango Complex	04-013-9812-1	277
	Dysart	04-013-4010-1	239
	Glendale	04-013-2001-1	242
	Greenwood	04-013-3010-1	254
	Higley	04-013-4006-1	196
	JLG Supersite	04-013-9997-1	227
	JLG Supersite	04-013-9997-4	228
	South Phoenix	04-013-4003-1	280
	West Chandler	04-013-4004-1	198
	West 43 <sup>rd</sup>	04-013-4009-1	250
	West Phoenix	04-013-0019-1	243
	Zuni Hills	04-013-4016-1	260
July 4, 2011	Higley	04-013-4006-1	198
July 5, 2011	Buckeye	04-013-4011-1	163
	Central Phoenix	04-013-3002-4	277
	Durango Complex	04-013-9812-1	156
	Dysart	04-013-4010-1	219
	Glendale	04-013-2001-1	167
	Greenwood	04-013-3010-1	155
	Higley	04-013-4006-1	362
	JLG Supersite	04-013-9997-4	331
	South Phoenix	04-013-4003-1	206
	West Chandler	04-013-4004-1	360
	West Phoenix	04-013-0019-1	278
July 7, 2011	Higley	04-013-4006-1	266
	West Chandler	04-013-4004-1	214
July 8, 2011	Apache Junction	04-021-3002-1	194

**Not Reasonably Controllable or Preventable (nRCP)**

EPA evaluates whether an event was not reasonably controllable or preventable at the time of the event by taking into account controls in place and wind speed, along with other factors.<sup>2</sup> For *natural* sources of dust, a high wind dust event can generally be considered to be not reasonably controllable or preventable if winds are high enough to cause emissions from natural undisturbed areas. For *anthropogenic* sources of dust, a high wind dust event is also eligible to be considered to be not reasonably controllable or preventable if:

1. The anthropogenic sources of dust have reasonable controls in place,
2. The reasonable controls have been effectively implemented and enforced, and
3. The wind speed was high enough to overwhelm the reasonable controls.

In addressing reasonable controls, ADEQ provided detailed information on the current set of required controls in the Phoenix PM<sub>10</sub> nonattainment area, including information on rule implementation, rule effectiveness, compliance and enforcement, real-time monitoring alert systems and public notification activities that occurred on the event days. ADEQ concluded, “the Phoenix area is designated as a serious nonattainment area for PM<sub>10</sub> and is required to have BACM for all significant sources of PM<sub>10</sub>. BACM-

<sup>2</sup> See e.g., Affirmation of Attainment of PM-10 NAAQS for the San Joaquin Valley Nonattainment Area, 73 FR 14691 (March 19, 2008).

approved control measures on significant anthropogenic sources were in place and enforced during the events, and pro-active tracking and response to the events by regulatory agencies and local governments confirmed the uncontrollable nature of the dust emissions; therefore, these pre-existing/prior approved required controls are adequate for meeting the requirements of an exceptional event and should be considered 'reasonable' for these purposes."

ADEQ provided documentation showing that, with the exception of the July 7<sup>th</sup>-July 8<sup>th</sup> event, sustained wind speeds associated with these events were above 25 mph. For example, maximum sustained wind speeds of 26 to 31 mph were measured on July 3<sup>rd</sup>, 28 to 34 mph on July 4<sup>th</sup>, and 25 to 47 mph with gusts of 35 to 56 mph on July 5<sup>th</sup>. While sustained wind speeds only reached 18 mph on July 7<sup>th</sup>, ADEQ explains that "while winds recorded in Pinal and Maricopa County during the early morning hours of July 7<sup>th</sup> were only somewhat moderate, it is possible that the large-scale windblown dust event that occurred on July 5<sup>th</sup> had conditioned soils and deposited large amounts of loose dust such that stronger winds were not needed to entrain or re-entrain dust into the air." ADEQ also asserts that due to the timing of the July 7<sup>th</sup> late evening event, the conditions that led to exceedances at Higley and West Chandler on July 7<sup>th</sup> were similarly responsible for the exceedance measured at Apache Junction on July 8<sup>th</sup>.

ADEQ further explains that "despite the deployment of comprehensive control measures and sophisticated response programs, high wind conditions associated with thunderstorms and thunderstorm outflows brought high concentrations of PM<sub>10</sub> emissions into, and also overwhelmed controls within, the Phoenix PM<sub>10</sub> nonattainment area. The events discussed in this document that caused the exceedances in this request (see Sections II and V) were caused by thunderstorm driven outflow winds that transported dust into Maricopa County from areas largely outside of the Phoenix PM<sub>10</sub> nonattainment area. The fact that these were natural events involving strong thunderstorm outflow winds that transported PM<sub>10</sub> emissions into Maricopa County, with a majority of the PM<sub>10</sub> emissions recorded by Maricopa County area monitors coming from sources outside of the Phoenix PM<sub>10</sub> nonattainment area, provides strong evidence that the events and exceedances of July 2-8, 2011 recorded within the nonattainment area were not reasonably controllable or preventable."

Section V of ADEQ's documentation includes a complex GIS analysis of each of the events that supports the PM<sub>10</sub> transport described above. For all of the events, the analysis clearly demonstrates that monitors in the Phoenix PM<sub>10</sub> nonattainment area were affected by PM<sub>10</sub> transport from outside the nonattainment area, with the main source areas located to the south and southeast of the nonattainment area. In addition to transport, the spatial extent of elevated PM<sub>10</sub> concentrations throughout the area and the wind speeds associated with the thunderstorm outflows contributes to EPA's evaluation of whether these events are not reasonably controllable or preventable.

Table 2: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 3, 2011	Section IV: p.39-45, Section V: p.48-62	Sufficient	Yes
July 4, 2011	Section IV: p.39-45, Section V: p.63-73	Sufficient	Yes
July 5, 2011	Section IV: p.39-45, Section V: p.74-86	Sufficient	Yes
July 7, 2011	Section IV: p.39-45, Section V: p. 87-101	Sufficient	Yes
July 8, 2011	Section IV: p.39-45, Section V: p. 87-101	Sufficient	Yes

### **Historical Fluctuations (HF)**

EPA evaluates whether a measured exceedance is in excess of historical fluctuation by taking into account the level of the exceedance in relation to historical data, which is typically 3 to 5 years.

To demonstrate that this requirement was met, ADEQ provided 5-year time series plots of both PM<sub>10</sub> daily maximum hourly averages and PM<sub>10</sub> 24-hour averages. ADEQ also explains that PM<sub>10</sub> concentrations measured during the July 2<sup>nd</sup>-8<sup>th</sup> period were in the 99.5<sup>th</sup> percentile range when compared to historical data.

Table 3: Documentation of HF

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 3, 2011	Section III: p.35-38, App. A	Sufficient	Yes
July 4, 2011	Section III: p.35-38, App. A	Sufficient	Yes
July 5, 2011	Section III: p.35-38, App. A	Sufficient	Yes
July 7, 2011	Section III: p.35-38, App. A	Sufficient	Yes
July 8, 2011	Section III: p.35-38, App. A	Sufficient	Yes

### **Clear Causal Relationship (CCR)**

EPA considers a variety of evidence when evaluating whether there is a clear causal relationship between the measurement under consideration and the event that is claimed to have affected the air quality in the area. Demonstrations should include documentation showing that the event in fact occurred and that emissions related to the event were transported in the direction of the monitor(s) where measurements were recorded; the size of the area affected by the transported emissions; the relationship in time between the event, transport of emissions, and recorded concentrations; and, as appropriate, pollutant species-specific information supporting a causal relationship between the event and the measured concentration.

Section II of ADEQ's demonstration included a comprehensive conceptual model of the events, including a general overview of the geographic setting of the monitors, climate, and drought information for Phoenix area. The conceptual model also included a very detailed discussion of each of the events that occurred in the July 2<sup>nd</sup>-8<sup>th</sup> time period, which included time-lapse videos of the events and time series graphs for each event that included hourly PM<sub>10</sub> concentration, visibility, and reports of blowing dust or haze. The time-lapse videos can be found at the following locations:

- July 3, 2011: [http://www.phoenixvis.net/videos/640x480/SOMT1\\_07032011.swf](http://www.phoenixvis.net/videos/640x480/SOMT1_07032011.swf)
- July 4, 2011: [http://www.phoenixvis.net/videos/640x480/SUPM1\\_07042011.swf](http://www.phoenixvis.net/videos/640x480/SUPM1_07042011.swf)
- July 5, 2011: [http://www.phoenixvis.net/videos/640x480/SOMT1\\_07052011.swf](http://www.phoenixvis.net/videos/640x480/SOMT1_07052011.swf)
- July 7, 2011: [http://www.phoenixvis.net/videos/640x480/SUPM1\\_07072011.swf](http://www.phoenixvis.net/videos/640x480/SUPM1_07072011.swf)
- July 8, 2011: [http://www.phoenixvis.net/videos/640x480/SUPM1\\_07082011.swf](http://www.phoenixvis.net/videos/640x480/SUPM1_07082011.swf)

Section V of the demonstration includes a detailed and extensive GIS analysis, that show the spatial and temporal representation of the events as they move throughout Maricopa and Pinal Counties. The analysis includes PM<sub>10</sub> concentrations, sustained wind speeds, wind gusts, wind direction, visibility, and base velocity radar to track the transport of PM<sub>10</sub> throughout the region. Accompanying the analysis, ADEQ provides a discussion for every map that describes the conditions at that time. While not included in the demonstration, it is important to note that NOAA's National Climatic Data Center Storm events

database includes dust storm observations on July 2<sup>nd</sup> at 1815 hours (central deserts), July 3<sup>rd</sup> at 1743 hours (greater Phoenix area), July 4<sup>th</sup> at 1830 hours (central deserts), and July 5<sup>th</sup> at 1920 hours (greater Phoenix area). The timing of these dust storm reports for each of these events is consistent with the observed increased PM<sub>10</sub> concentrations in the area, increased wind speed, reduced visibility, and NWS station reports of thunderstorms (TS), blowing dust (BLDU), haze (HZ), and dust storms (DS).

ADEQ generally summarizes that “the events occurring from July 2-8 were directly related to strong and gusty winds generated by thunderstorm outflow boundaries” that “were also responsible for transporting PM into the Phoenix PM<sub>10</sub> nonattainment area from areas outside of the nonattainment area.” ADEQ further states that “while it is likely that some dust was generated within the PM<sub>10</sub> nonattainment area as gusts from the thunderstorm outflows passed through the area, the amount of dust generated locally was easily overwhelmed by, and largely unnoticeable as compared to the dust transported in from the source regions of the thunderstorm outflows.”

**Table 4: Documentation of CCR**

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 3, 2011	Section II: p.4-12, p.13-19, Section V: p.48-62, App. C&E	Sufficient	Yes
July 4, 2011	Section II: p.4-12, p.13-19, Section V: p.48-62, App. C&E	Sufficient	Yes
July 5, 2011	Section II: p.4-12, p.13-19, Section V: p.48-62, App. C&E	Sufficient	Yes
July 7, 2011	Section II: p.4-12, p.13-19, Section V: p.48-62, App. C&E	Sufficient	Yes
July 8, 2011	Section II: p.4-12, p.13-19, Section V: p.48-62, App. C&E	Sufficient	Yes

**Affects Air Quality (AAQ)**

EPA will consider events to have affected air quality if the CCR and HF requirements have been adequately demonstrated. ADEQ states that due to the information presented in the demonstrations, “we can reasonably conclude the events in question affected air quality.”

**Table 5: Documentation of AAQ**

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 3, 2011	Section VII: p. 106	Sufficient	Yes
July 4, 2011	Section VII: p. 106	Sufficient	Yes
July 5, 2011	Section VII: p. 106	Sufficient	Yes
July 7, 2011	Section VII: p. 106	Sufficient	Yes
July 8, 2011	Section VII: p. 106	Sufficient	Yes

**Natural Event**

EPA will consider an event to be a natural event if both the nRCP and CCR requirements have been adequately demonstrated. ADEQ generally states that, “the events shown to cause these exceedances were emissions of PM<sub>10</sub> driven by high winds caused by thunderstorm activity and related outflow boundaries during the period of July 2-8, 2011” and that “the events therefore qualify as natural events.”

**Table 6: Documentation of Natural Event**

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 3, 2011	Section VII: p. 106-107	Sufficient	Yes
July 4, 2011	Section VII: p. 106-107	Sufficient	Yes
July 5, 2011	Section VII: p. 106-107	Sufficient	Yes
July 7, 2011	Section VII: p. 106-107	Sufficient	Yes
July 8, 2011	Section VII: p. 106-107	Sufficient	Yes

### No Exceedance or Violation But For the Event (NEBF)

Generally, the NEBF demonstration is similar to the demonstration of the nRCP and CCR requirements, and should show that the measured concentration would have been below the applicable NAAQS without the affect of the event.

ADEQ provides a summary of the analysis and information presented in the documentation that demonstrate both the nRCP and CCR requirements have been met and states that “the body of evidence ...provides no alternative that could tie the exceedances of July 2-8, 2011 to any other causal source but transported and re-entrained PM<sub>10</sub> generated from thunderstorm outflows, confirming that there would have been no exceedances but for the presence of these uncontrollable natural events.” While not explicitly stated in the documentation, EPA acknowledges that PM<sub>10</sub> concentrations before the periods of high winds on the event days were below the 24-hour PM<sub>10</sub> NAAQS, providing further support for ADEQ’s conclusion.

Table 7: Documentation of NEBF

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 3, 2011	Section VI: p. 105	Sufficient	Yes
July 4, 2011	Section VI: p. 105	Sufficient	Yes
July 5, 2011	Section VI: p. 105	Sufficient	Yes
July 7, 2011	Section VI: p. 105	Sufficient	Yes
July 8, 2011	Section VI: p. 105	Sufficient	Yes

### Schedule and Procedural Requirements

In addition to technical demonstration requirements, 40 CFR §50.14 (c) specifies the schedule and procedural requirements an air agency must follow to request data exclusion. Table 8 outlines EPA’s evaluation of these requirements.

Table 8: Schedules and Procedural Criteria

	Reference	Demonstration Citation	Criterion Met?
Did the State provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Section 1: p.1, Appendix B	Yes
Were flags and initial description placed on the data by July 1 <sup>st</sup> of the following year?	40 CFR §50.14 (c)(2)(iii)	Section 1: p.1	Yes
Was the demonstration submitted within 3 years of the end of the quarter in which the event occurred and 12 months prior to the date that any regulatory decision must be made by EPA?	40 CFR §50.14 (c)(3)(i)	March 14, 2012 letter <sup>3</sup>	Yes
Was the public comment process followed and documented?	40 CFR §50.14 (c)(3)(v)	Section 1: p.2, Appendix D	Yes

<sup>3</sup> See letter from Eric Massey, Director, Air Quality Division, ADEQ to Deborah Jordan, Director, U.S. EPA Region IX Air Division, dated March 14, 2012.

## CONCLUSION

EPA has reviewed documentation provided by ADEQ to support claims that dust emissions generated by monsoonal thunderstorm high winds were transported into the Phoenix PM<sub>10</sub> nonattainment area from areas in Pinal County and caused exceedances of the 24-hour PM<sub>10</sub> NAAQS at the locations outlined in Table 1 on July 3, July 4, July 5, July 7, and July 8, 2011. EPA has determined that the flagged exceedances at these locations and on these days meet the definition of an exceptional event: the exceedances affected air quality, were not reasonably controllable or preventable, and meet the definition of a natural event. Specifically, EPA has determined that events were not reasonably controllable and preventable either due to high wind conditions that transported PM<sub>10</sub> from sources outside of the nonattainment area and subsequently overwhelmed reasonable controls within the Phoenix PM<sub>10</sub> nonattainment area (July 3<sup>rd</sup>, July 4<sup>th</sup>, and July 5<sup>th</sup>) or moderate wind speeds re-entrained the large amount of PM<sub>10</sub> deposited by the large July 5<sup>th</sup> dust storm within and outside of the nonattainment area (July 7<sup>th</sup> and July 8<sup>th</sup>). Also, regardless of transport into the area, information pertaining to the controls implemented within the nonattainment area, the spatial extent of elevated PM<sub>10</sub> concentrations measured in the area, and the wind speeds associated with the thunderstorm outflows provide sufficient evidence to conclude that these events were not reasonably controllable or preventable. Furthermore, EPA has determined that there is a clear causal relationship between the events and the measured exceedances, there would have been no exceedance but for the events, and the measured exceedances are in excess of normal historical fluctuations.

EPA finds that the weight of evidence is sufficient for concurrence on the flagging of the data for these monitors on July 3, July 4, July 5, July 7, and July 8, 2011. These concurrences do not constitute final EPA action to exclude these data from consideration for purposes of determining the attainment status of the area. Final actions will come only after EPA completes notice and comment rulemaking on those determinations.