MARICOPA ASSOCIATION of GOVERNMENTS

302 North 1st Avenue, Suite 300 ▲ Phoenix, Arizona 85003
Phone (602) 254-6300 ▲ FAX (602) 254-6490
E-mail: mag@azmag.gov ▲ Web site: www.azmag.gov

March 17, 2011

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Doug Kukino, Glendale, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Thursday, March 24, 2011 - 1:30 p.m.
MAG Office, Suite 200 - Saguaro Room
302 North 1st Avenue, Phoenix

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

   2. For information.

3. Approval of the February 24, 2011 Meeting Minutes

   3. Review and approve the February 24, 2011 meeting minutes.

4. CMAQ Annual Report

   In accordance with federal guidance, the 2010 Congestion Mitigation and Air Quality Improvement (CMAQ) Funds Annual Report describes how funds have been spent and the expected air quality benefits. The report was prepared by MAG in cooperation with the Arizona Department of Transportation. The report is in the electronic format required by the Federal Highway Administration. Please refer to the enclosed material.

   4. For information and discussion.

5. Clark County Natural Events Action Plan for High Wind Events

   Clark County in Las Vegas, Nevada has a Natural Events Action Plan developed in accordance with the Environmental Protection

   5. For information and discussion.

Agency (EPA) Natural Events Policy. The Natural Events Action Plan is designed to accomplish three primary objectives: (1) Provide a high-wind notification system for the public and the regulated community to warn of an impending event; notify the public of an ongoing event; and to alert the public of unhealthful PM-10 concentrations. (2) Provide education and outreach programs to the public, businesses, and industrial communities. (3) Ensure that PM-10 control measures are implemented during high-wind events to reduce elevated concentrations and the frequency of violations. Please refer to the enclosed material.

6. Update on Activities to Prevent PM-10 Exceedances

The Maricopa Association of Governments is taking a proactive leadership approach in cooperation with the air agencies, business and industry to prevent PM-10 exceedances at the monitors and throughout the region. The Environmental Protection Agency has indicated informally that 2009 may be a clean year. There were no violations of the PM-10 standard in 2010. The next ten months are critical. If three years of clean data can be obtained prior to the submission of a new Five Percent Plan, it may be possible for EPA to issue an attainment finding under the EPA Clean Data Policy and a Five Percent Plan for PM-10 would not be needed.

Efforts are underway to establish a network of individuals from the MAG member agencies that would be notified when PM-10 concentrations are increasing and also when high winds are expected. The contact person could check their jurisdictions operations in advance to make sure dust controls are in place, check around monitors located in their city/town, notify appropriate business and industry associations if help is needed with other sources, and watch the monitor

6. For information and discussion.

readings. Monitor maps could be distributed to the city departments, contractors that do work for the city, and contractors that come in for local permits. If the jurisdiction does not have any monitors located there, the person could check to make sure that dust controls are in place. Please refer to the enclosed information.

7. Status Report on the New Five Percent Plan for PM-10

   On a parallel track with preventing PM-10 exceedances, work is also underway to address the technical approvability issues identified by EPA with the prior Five Percent Plan for PM-10. A status report will be provided.

7. For information and discussion.

8. Supplemental Revision for the Eight-Hour Ozone Maintenance Plan

   The MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area was submitted to the Environmental Protection in March 2009. The plan demonstrated maintenance of the 1997 eight-hour ozone standard of .08 parts per million for 2025. On March 14, 2011, EPA sent a letter to MAG requesting that a supplemental revision be prepared to include interim modeling analyses for the years 2016 and 2021 to demonstrate that the eight-hour ozone standard will be maintained throughout the ten year maintenance period. EPA is requesting the supplemental information in order to take action on the plan.

   In addition, the supplemental revision will need to address the repeal of the Local Transit Assistance Fund Program by the Arizona Legislature in 2010. Please refer to the enclosed material.

8. For information and discussion.

9.	Call for Future Agenda Items The next meeting of the Committee has been tentatively scheduled for **Thursday, April 28, 2011** at 1:30 p.m. The Chairman will invite the Committee members to suggest future agenda items.	9. For information and discussion.

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

Thursday, February 24, 2011
MAG Office
Phoenix, Arizona

MEMBERS ATTENDING

Doug Kukino, Glendale, Chairman
Larry Person, Scottsdale, Vice Chair
#Kristen Sexton for Sue McDermott, Avondale
Elizabeth Biggins-Ramer, Buckeye
*Jim Weiss, Chandler
#Jamie McCullough, El Mirage
Kurt Sharp, Gilbert
*Cato Esquivel, Goodyear
#Greg Edwards for Scott Bouchie, Mesa
#Maher Hazine for William Mattingly, Peoria
Phil McNeely, Phoenix
#Antonio DeLaCruz, Surprise
Oddvar Tveit, Tempe
*Mark Hannah, Youngtown
Ramona Simpson, Queen Creek
*American Lung Association of Arizona
Kristin Watt for Grant Smedley, Salt River Project
Brian O'Donnell, Southwest Gas Corporation
Mark Hajduk, Arizona Public Service Company
*Gina Grey, Western States Petroleum Association
Eddie Caine for Dawn M. Coomer, Valley Metro/RPTA
Dave Berry, Arizona Motor Transport Association
*Jeannette Fish, Maricopa County Farm Bureau
Steve Trussell, Arizona Rock Products Association
Amy Bratt, Greater Phoenix Chamber of Commerce
Amanda McGennis, Associated General Contractors
*Spencer Kamps, Homebuilders Association of Central Arizona
*Mannie Carpenter, Valley Forward
*Erin Taylor, University of Arizona Cooperative Extension
*Beverly Chenausky, Arizona Department of Transportation
Diane Arnst, Arizona Department of Environmental Quality
*Environmental Protection Agency
Bob Downing for Jo Crumbaker, Maricopa County Air Quality Department
#Duane Yantorno, Arizona Department of Weights and Measures
*Ed Stillings, Federal Highway Administration
*Judi Nelson, Arizona State University
#Christopher Horan, Salt River Pima-Maricopa Indian Community

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

OTHERS PRESENT

Lindy Bauer, Maricopa Association of Governments
Dean Giles, Maricopa Association of Governments
Patrisia Magallon, Maricopa Association of Governments
Julie Hoffman, Maricopa Association of Governments
Taejoo Shin, Maricopa Association of Governments
Matt Poppen, Maricopa Association of Governments
Cathy Arthur, Maricopa Association of Governments
Adam Xia, Maricopa Association of Governments
Feng Liu, Maricopa Association of Governments
Frank Schinzel, Maricopa County Air Quality
Mitch Wagner, Maricopa County Department of Transportation
Dan Catlin, Fort McDowell
Eric Massey, Arizona Department of Environmental Quality
Tim Conner, City of Scottsdale
Matt Tsark, Strand Associates, Inc.
Joonwon Joo, Arizona Department of Transportation
Joe Gibbs, City of Phoenix

1. Call to Order

A meeting of the MAG Air Quality Technical Advisory Committee was conducted on February 24, 2011. Doug Kukino, City of Glendale, Chair, called the meeting to order at approximately 1:30 p.m. Antonio DeLaCruz, City of Surprise; Greg Edwards, City of Mesa; Kristen Sexton, City of Avondale; Duane Yantorno, Arizona Department of Weights and Measures; Maher Hazine, City of Peoria; Jamie McCullough, City of El Mirage; and Christopher Horan, Salt River Pima-Maricopa Indian Community, attended the meeting via telephone conference call.

2. Call to the Audience

Mr. Kukino 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. He noted that no public comment cards had been received.

3. Approval of the January 27, 2011 Meeting Minutes

The Committee reviewed the minutes from the January 27, 2011 meeting. Amanda McGennis, Associated General Contractors, moved and Eddie Caine, Valley Metro/RPTA, seconded, and the motion to approve the January 27, 2011 meeting minutes carried unanimously.

4. Withdrawal of the MAG Five Percent Plan for PM-10

Lindy Bauer, MAG, provided a presentation on the withdrawal of the MAG Five Percent Plan for PM-10 and the Environmental Protection Agency (EPA) Clean Data Policy. She reported that on January 25, 2011, the Arizona Department of Environmental Quality (ADEQ) withdrew the Five Percent Plan for PM-10. Ms. Bauer noted that ADEQ was supported by MAG and Maricopa County in this important effort. She added that EPA published a Finding of Failure to Submit in the Federal Register on February 14, 2011, which also became effective on that date. Ms. Bauer indicated that the clocks are ticking. She mentioned that the Clean Air Act sanctions would be imposed if a new complete plan is not submitted within 18 months of the Finding of Failure to Submit. The first sanction would fall on August 14, 2012, which would be tighter controls on major industries (2:1 offsets in emissions). Ms. Bauer stated that if a plan was still not submitted within 24 months of the Finding of Failure to Submit, by February 14, 2013, the region could lose the federal highway funds and a Federal Implementation Plan would be imposed. She added that the imposition of the federal highway sanctions could also trigger a conformity lapse that would put the major projects in the $7.4 billion Transportation Improvement Program (TIP) at risk. Ms. Bauer indicated that major projects could not proceed.

Ms. Bauer stated that a submittal of a new Five Percent Plan for PM-10 and a completeness finding by EPA would stop both sanction clocks. The EPA approval of the plan would stop the imposition of a federal implementation plan. Ms. Bauer indicated that a new plan would need to be submitted by January 2012. She noted that EPA could take up to six months for the completeness finding. Ms. Bauer added that the completeness finding would be needed by August 14, 2012 in order to avoid the first sanction. The EPA's approval of the plan would be needed by February 14, 2013.

Ms. Bauer provided an update on recent activities regarding the new Five Percent Plan for PM-10. She stated that EPA has indicated that the focus of this plan needs to be on high winds. Ms. Bauer added that there have been no violations under stagnant conditions since the prior Five Percent Plan for PM-10 was submitted to EPA in December 2007. She mentioned that EPA has been working with Maricopa County, MAG, and ADEQ since a revised 2008 Emissions Inventory is needed. Maricopa County completed an inventory in June 2010; however, revisions are needed. Ms. Bauer noted the major economic downturn since 2005 and added that the Maricopa County 2008 Emissions Inventory is currently being revised. The inventory activities to date include the following: MAG provided vacant land documentation to EPA in November 2010 and Maricopa County (under review); MAG revised the paved road emissions based on the new EPA AP-42 equation in January 2011; MAG prepared a draft of the windblown dust emissions in February 2011 (under review); MAG is updating the onroad mobile source emissions using the new EPA MOVES model; ADEQ will be providing GIS data to MAG from agriculture for comparison with MAG land use data; and Maricopa County is working on rule effectiveness.

Ms. Bauer stated that it is unknown at the time; however, if additional measures may need to be added to reduce emissions by five percent per year until attainment, as measured at the monitors. Ms. Bauer noted that this is a Clean Air Act requirement. She stated that MAG would need to revise the modeling in the plan and ADEQ needs to address agriculture BACM and enforcement issues, which is being done by the Governor's Agricultural Best Management Practices Committee. Ms. Bauer added that the region will need three years of clean data at the monitors for attainment.

Ms. Bauer provided an update on some of the recent meetings regarding the Five Percent Plan for PM-10. She stated that on February 3, 2011, EPA met with ADEQ, MAG, and Maricopa County to discuss the technical approvability issues of the plan. Ms. Bauer added that the conversations, discussions, and data are focused on the 2008 Emissions Inventory. She noted that discussions include fixes to the inventory to ensure that it is accurate and comprehensive. Ms. Bauer stated that at the House Environment Committee meeting this week, EPA indicated that the plan was doing a good job during stagnant conditions. She mentioned that EPA likes the measures in the plan; however, the focus is on high winds.

Ms. Bauer stated that EPA conducted a meeting on February 16, 2011 with MAG, ADEQ, and Maricopa County on exceptional events. She added that EPA has indicated a willingness to work with MAG, ADEQ, and Maricopa County. Ms. Bauer commented that EPA has stated that the State needs to determine the wind speed at which BACM are overwhelmed. This was emphasized by EPA. Ms. Bauer stated that EPA mentioned that Clark County developed a customized package for high wind exceptional events and Arizona could potentially develop a customized package as well. At the meeting, EPA discussed Clark County's success in attaining the PM-10 standard. Ms. Bauer commented that EPA will be providing guidance on high wind exceptional events which may have a component for high wind action plans. She indicated that EPA will be presenting this guidance in April to the Western States Air Resources Council through a collaborative process and States will have an opportunity to comment.

Ms. Bauer mentioned the 2009 PM-10 exceedances at the monitors. She stated that EPA staff indicated informally at the February 16, 2011 meeting that most of those exceedances are due to dust storms. Ms. Bauer noted that EPA may only question a few of those exceedances. If this is the case, 2009 may be a clean year; however, it is still unknown at this time. Ms. Bauer indicated that ADEQ will need to submit the exceptional events documentation for the 2009 exceedances. She mentioned

that if 2009 is a clean year, knowing there were no violations in 2010, and if the region could remain clean at the monitors in 2011, then potentially we would have the three years of clean data needed to be in attainment.

Ms. Bauer stated that it is very critical to keep in mind EPA's Clean Data Policy. She indicated that MAG believes this is the best case scenario for the region. Under EPA's Clean Data Policy, the region would need three years of clean data, which could potentially be 2009, 2010 and 2011. EPA would then issue a finding of attainment. Ms. Bauer indicated that the Clean Air Act requirements would be suspended for reasonable further progress, attainment demonstration, and contingency measures as long as the area remains in attainment. She stated that the thinking behind this policy is that if the region is clean at the monitors and a finding of attainment is issued, this means that the standard has been met. Therefore, the region would be relieved of the other requirements as long we remain clean at the monitors. She added that a redesignation request to attainment from EPA and a maintenance plan could then be pursued. Ms. Bauer noted that maintenance plans have been done for carbon monoxide, one-hour ozone, and eight-hour ozone.

Ms. Bauer discussed some of the requirements for a redesignation request and maintenance plan. She stated that the requirements include the finding of attainment from EPA. She added that the applicable implementation plan would then have to be fully approved by EPA. Ms. Bauer noted that the Serious Area Plan for PM-10 has been fully approved. She indicated that EPA has to determine that the improvement in air quality is due to permanent and enforceable reductions in emissions. Ms. Bauer commented that with the other plans, MAG was able to rely on existing measures that had already been in the plans for years. She noted that those measures were enough to keep the region in maintenance of the standard. Ms. Bauer mentioned that the region also has to show that the State has met all applicable requirements for State Implementation Plans (SIPs) and nonattainment areas under the Clean Air Act Section 110 and Part D. She added that EPA must approve a maintenance plan, including a contingency plan, for the area. The plan must demonstrate maintenance of the standard for at least ten years following redesignation to attainment by EPA.

Ms. Bauer stated that in order to fall under the EPA Clean Data Policy, prevention of exceedances is absolutely critical. She added that EPA likes the Clark County approach. Ms. Bauer noted that MAG talked to this Committee about the Clark County approach when the Five Percent Plan for PM-10 was being prepared. She mentioned the Maricopa County organized a workshop with Clark County in which some of the Committee members attended. Ms. Bauer indicated that the Clark County trip was very beneficial. She stated that Clark County has a Natural Events Action Plan for High Wind Conditions. Ms. Bauer commented that Clark County's approach includes: watching the monitor readings; watching for when high winds are forecasted; notifying facilities that high winds are coming and inspectors will be coming out; sending inspectors out to the monitors; and having the inspectors fan out from the monitors. She added that this approach is really important and EPA has talked to this region about the success of Clark County with their preventative approach. Ms. Bauer indicated that the State is currently looking for measures being done voluntarily that could be mandated. She stated that given the severe economic downturn, it is a terrible time for mandates and MAG does not want to cause more economic burden on business and industry and the region.

Ms. Bauer stated that leadership from MAG and its member agencies at this point is critical. She noted that this was discussed with the MAG Regional Council at its February 23, 2011 meeting. Ms. Bauer added that MAG is asking its members (cities and towns) for their ideas on what they can do to prevent windblown exceedances. She noted that the plan is due on January 2012 and the clock is

ticking. Ms. Bauer mentioned that there are 23 cities and towns in the nonattainment area and 25 cities and towns all together that belong to MAG. She indicated that MAG has prepared some draft ideas for preventing exceedances. The draft ideas include having customized High Wind Action Plans for cities and towns. The Arizona Department of Environmental Quality could notify the cities and towns when high winds are being forecasted. Ms. Bauer added that ADEQ has indicated that they could probably give a three to five day lead time. She mentioned that another idea is to have cities and towns watch real time monitor readings. Ms. Bauer noted that arrangements would need to be made with Maricopa County.

Ms. Bauer stated that cities and towns could also review potential sources under the control of cities and towns since they have the ordinances for air quality. In addition, cities and towns could check their own operations that are dust-generating to ensure that dust control measures are in place. Ms. Bauer indicated that MAG has asked the cities to go above and beyond when they are working, especially in the vicinity of a monitor. She commented that another draft idea is to distribute monitor maps to city and town contractors and other contractors that come in for local permits. Ms. Bauer noted that one city is currently distributing these maps.

Ms. Bauer stated that the cities and towns could also check sources around the monitors located in their jurisdiction. She added that MAG could also prepare a video on high wind awareness to discuss what citizens could do to prevent exceedances on high wind days. She noted that the video could then be shown on channel eleven's. Ms. Bauer indicated that MAG wanted to share these ideas with the Committee and have already discussed these ideas with the MAG Regional Council at their last meeting. She commented that prevention is the key. It is much easier if we can just prevent the exceedances from occurring rather than trying to come up with additional measures. Ms. Bauer mentioned that there are already 77 measures in the Serious Area Plan as well as 53 measures in the Five Percent Plan for PM-10. She noted that those measures are still being implemented and are in place. Ms. Bauer asked the city members of the Air Quality Technical Advisory Committee for their ideas.

Mark Hajduk, Arizona Public Service Company, inquired if the draft ideas will potentially be going into the SIP that will be resubmitted. Ms. Bauer responded that it is not the intent to mandate the ideas to prevent exceedances. The draft ideas are an effort to prevent exceedances from happening. She noted that things need to be done now. The region is in the high wind time of the year. Ms. Bauer commented that there was an exceedance in 2011 at the West Chandler monitor and other Pinal County monitors. It is the high wind time of year and it is important to step up and have all hands on deck.

Mr. Hajduk inquired if there is a timeframe of when the SIP will be submitted to EPA. Ms. Bauer responded that under the schedule that MAG has for all air quality activities, the new plan would need to be submitted by January 2012. However, if the region has three years of clean data by the time the new plan needs to be submitted, then the region could possibly fall under the Clean Data Policy. Ms. Bauer noted that MAG has asked EPA for additional information on the Clean Data Policy. She added that some of this may also change; however, this is MAG's current take on the policy.

Mr. Hajduk inquired if having three years of clean data by the end of 2011 and having the SIP submitted by January 2012, the region could move forward to try and get an attainment designation for the area. Ms. Bauer responded that if the region has three years of clean data by the end of 2011 and the region obtains an attainment finding from EPA, then the region would not have to submit a

Five Percent Plan. She added that Maricopa County would still have to submit the 2008 Periodic Emissions Inventory. Ms. Bauer noted that another requirement that is not suspended is New Source Review. She commented that Maricopa County and ADEQ address New Source Review issues. Ms. Bauer mentioned that it could be a different scenario all together rather than the usual Five Percent Plan for PM-10. Maricopa County, ADEQ, and MAG are working on the issues simultaneously. Ms. Bauer indicated that MAG believes that the best course of action is three years of clean data. Mr. Hajduk inquired if three years of clean data means a new SIP will not have to be submitted. Ms. Bauer responded that it would be a submittal with less requirements. She added that ADEQ prepared a Serious Area SIP that fell under the clean data finding for ozone and submitted some of the regulations that were in place as well as the inventory. Ms. Bauer noted that it would be a different type of submittal.

Larry Person, City of Scottsdale, inquired if the different track is an EPA policy or a different section of the Clean Air Act requirements. Ms. Bauer responded that this is an EPA policy; however, it has been implemented in Arizona. For example, Miami, Arizona received an attainment finding from EPA. Diane Arnst, ADEQ, stated that the State has received clean data findings for several areas. She added that there is no deadline for the maintenance plan as long as the region keeps attaining the standard. Ms. Arnst commented that the ambient air monitoring data for 2011 has to undergo quality assurance and be certified and submitted by May 1, 2012. She noted that just so everyone understands if there is a time crunch built in to this attempt. Ms. Arnst added that this is also a time of fewer staff members.

Ramona Simpson, Town of Queen Creek, inquired if EPA was still evaluating the high wind exceedance formula and how this will affect the region in the future in order to stay in attainment. Ms. Bauer responded that EPA will be releasing high wind exceptional events guidance which will have a component for high wind action plans. She added that the details of the guidance is unknown at the moment; however, it is encouraging that EPA is working on both long-term and short-term solutions to fix the problems with the EPA Exceptional Events Rule. She noted that the State will need to define the wind speeds at which the Best Available Control Measures are overwhelmed. Ms. Bauer mentioned that EPA has indicated a willingness to work with this region. She commented that we are encouraged to hear that Clark County has a customized package for their area so a customized package could potentially be developed for this region and the State.

Mr. Person inquired about an approved plan and the EPA Clean Data Policy. He stated that under EPA's Clean Data Policy, an approved plan is needed and that this region already has a plan that has been approved prior to the one that was withdrawn that would meet that requirement. Ms. Bauer responded that MAG has asked for clarification from EPA on the Clean Data Policy. She added that for the maintenance plan requirements, an applicable implementation plan has to be fully approved by EPA. Ms. Bauer noted that there are many pieces involved. Ms. Arnst stated that in order to get officially redesignated to attainment status, EPA has to approve the ten year maintenance plan and then the region could be redesignated. She added that the clean data finding is a step before, which would be published in the Federal Register if EPA agrees with the data. Ms. Arnst noted that there are many steps to go through.

Brian O'Donnell, Southwest Gas Corporation, commented on high winds in Iowa versus the high winds in Arizona. He added that the high winds in Arizona may appear in one area and may be different in another area of Arizona. Mr. O'Donnell noted that it is different in Arizona than in many other states. He mentioned that a forecast in the Salt River area may not be the same for the City of

Scottsdale. Ms. Bauer replied that another issue is the friction velocities in our region, which has to do with surface roughness discussed at a prior meeting. She mentioned the smooth areas by the West 43rd Avenue monitor, fine silty soils, wind speed, and dust devils. She added that the State will have to prepare a customized package and MAG will cooperatively work with the State and EPA on this issue.

Ms. McGennis indicated that she was reviewing the Five Percent Plan for PM-10 on the MAG website. She added that the city commitments are approximately 500 pages. Ms. McGennis inquired if this information will be put in a table format instead of the document format so that it can be easier to read for this upcoming process. Ms. Bauer referred Ms. McGennis to the adopted plan chapter of the Five Percent Plan for PM-10. She noted that what counts are the commitments made for each individual measure. Ms. Bauer added that there is table in the front of chapter 6 with a page number of where the measure starts. She indicated that the measures have a combination of the State requirements and the city and county commitments. Ms. McGennis inquired if MAG will compile for the Committee all the suggestions as they come up. Ms. Bauer responded yes and added that the draft ideas in the presentation are to prevent exceedances.

Mr. Kukino stated that the concepts raised are good and perhaps a workshop amongst the cities, ADEQ, and the County early in the process to discuss what shape this process will take would be helpful. He added that later a discussion could occur at a future Committee meeting in terms of what the Committee will be recommending going forward. Mr. Kukino inquired if this was a realistic expectation. Ms. Bauer responded yes and added that we needed to team up Maricopa County and business and industry. She indicated that ADEQ has the notification with the forecasts so the notification network can be expanded to prevent the exceedances.

Mr. Pearson inquired if the Clark County Plan is available as a resources for cities that are looking to develop a customized High Wind Action Plan. Ms. Bauer responded that this was a great idea and that MAG could make the Clark County Natural Events Action Plan available to the Committee members for the next meeting. Ms. McGennis stated that she believes the Clark County Rule is effective because it is very simplistic. She noted that there are major differences between Maricopa County Rule 310 and Clark County's Rule. Ms. McGennis added that the Committee members will be surprised to see what is not in Clark County's Rule versus what is in Rule 310. She commented that Clark County has been very successful and it is an interesting study when reviewing it.

5. Status Report on Revisions to the 2008 Emissions Inventory

Cathy Arthur, MAG, presented the new AP-42 equation and an example of measures with continuing increases in benefit. She stated that AP-42 covers many air pollution emission factors and Section 13.2.1 addresses paved road emissions. Ms. Arthur added that there is also a section that addresses unpaved road emissions; however, that did not change. She indicated that in June 2010, EPA published two alternative AP-42 equations that they were considering to replace what has been in AP-42 since November 2006. Ms. Arthur noted that MAG has been using the November 2006 equation since that time.

Ms. Arthur provided the November 2006 equation and added that the new equations do not have the factor "C" which was used in 2006 to subtract out the 1980's vehicle fleet exhaust, brake wear, and tire wear. She added that this was integrated into the new equation when it was recalibrated. Ms. Arthur stated that EPA also eliminated divisor two under the silt loading variable and divisor three under vehicle weight. She indicated that the silt loading and weight variables are still the two

independent variables in this equation. Ms. Arthur discussed silt loading and added that it is conducted by measuring the mass of silt that is on a paved road. She mentioned that silt is defined as particles that are 75 microns or smaller. A fraction of that particle is then calculated, which is considered silt, by using a 200 mesh. Ms. Arthur added that there is a process where the data is collected and put through a screen mesh to determine the percent that the loading has of silt. She noted that "sL" is a measured value.

Ms. Arthur stated that in June 2010, EPA released the two new equations, one of which included a speed term. She added that EPA introduced the idea of adding a third variable. It is the average miles per hour being traveled on the system for which you are calculating paved road emissions. Ms. Arthur mentioned that the emission factor variables are the same; however, the exponents have changed from the original equation. She noted that the weighting factor has also changed in the new equation. Ms. Arthur indicated that the equations were created by using data from vehicle test runs. She mentioned that it appears that the difference between the data used in the 2006 equation and the new equation is that there were 22 new test runs which were conducted in 2008 for the Corn Refiners Association. Ms. Arthur added that apparently the Corn Refiners Association were concerned that the database being used did not take the heavier vehicles into account at lower speeds. She noted that the 22 data points were added to the data set. As a result, in order to develop an equation that has a speed term, there were 71 test runs with speeds and 93 test runs without the speed term.

Dave Berry, Arizona Motor Transport Association, inquired if the speed is observed or theoretical. Ms. Arthur responded that in the case of the 71 runs, the speed of the vehicle was being observed. She added that this is not much of an issue since it was dropped in the final equation. Ms. Arthur mentioned that one of the equations included speed terms and the other equation was done without speeds. She noted that the equation with speed terms gave higher emissions than the equation without speeds.

Ms. Arthur stated that EPA provided a public comment period for the two equations, which ended in August 2010. She added that some of the comments received were from Clark County and the Midwest Research Institute (MRI). Ms. Arthur indicated that there was a joint conference call with EPA, Clark County, and MRI and their concern was that the new equation increases PM-2.5 emissions. She noted that this does not impact this region since we are in attainment for that pollutant; however, this does impact Clark County and other urban areas that are nonattainment for PM-2.5 and have established budgets. Ms. Arthur mentioned that the budget setting occurred last year using the old equation for many places. She added that now these areas are being asked to set a budget using the new equation that has higher PM-2.5, which is a major concern.

Ms. Arthur stated that in September through December 2010, EPA started checking their calculations and taking into consideration the comments that were received. As a result, the equations were changed several times. She added that Matt Poppen, MAG, was in contact with Ron Meyers from EPA Office of Air Quality Planning and Standards in Research Triangle Park, North Carolina. Ms. Arthur noted that every time EPA developed a new version of the equation, MAG tested it to see the impacts that it would have locally. She indicated that the final equation was released January 13, 2011 and is required to be used. Ms. Arthur provided the final equation, which was also tested by EPA. She added that MAG staff closely monitored EPA's intermediate changes to the AP-42 equation from September through December. Ms. Arthur stated that MAG wanted to make sure that the new equation could still show conformity to the older budget in case the plan was going to be withdrawn. She noted that the older budget is from the Serious Area Plan for PM-10 that was submitted to EPA

in 2000. The budget was 59.7 metric tons per day, considerably lower than the budget used in the Five Percent Plan for PM-10, which was 103.3 metric tons per day.

Ms. Arthur discussed the impact of the new equation. She stated that the application of the new AP-42 equation reduces the 2008 paved road emissions in the Maricopa County PM-10 nonattainment area by 61 percent. Ms. Arthur noted that the new equation reduces the total emissions in the 2008 inventory by 14 percent, holding everything else constant. She indicated that the decrease in paved road emissions reduces the total PM-10 in 2008 and the tons per year needed to meet the five percent reduction target in the Five Percent Plan for PM-10. Ms. Arthur commented that the number of tons per year was approximately 5,000 tons based on the 2007 base. She added that with the new base it would be about 3,600 tons, based on the 2008 inventory. Mr. Arthur mentioned that it would decrease to approximately 3,100 tons where the region would need to get five percent with the new paved road equation. Ms. Arthur noted that there has been a decline by using the 2008 base versus the 2007 base. She mentioned that a lot of control measures were implemented in 2008; therefore, the inventory was already starting to decline. Ms. Arthur indicated that MAG is planning to use the new equation in the new five percent plan and has already updated the 2008 inventory that was published by Maricopa County in June.

Ms. Arthur discussed the timeline for the new AP-42 equation and other actions. She stated that EPA released the new equation for use in preparing State Implementation Plans on January 13, 2011. She added that on January 19, 2011, a conformity finding was issued by the U.S. Department of Transportation on the amended FY 2011-2015 Transportation Improvement Plan and Regional Transportation Plan. On January 25, 2011, ADEQ withdrew the Five Percent Plan for PM-10. Ms. Arthur commented that on February 4, 2011, EPA published a Federal Register notice authorizing use of the new AP-42 equation for transportation conformity analyses and SIPs. She added that EPA encouraged the use of the new equation if a new SIP is being developed. Ms. Arthur noted that the new equation will be used in the new plan. She indicated that on February 9, 2011, EPA published a Federal Register notice withdrawing the adequacy finding for the transportation conformity budget of 103.3 metric tons per day contained in the 2007 Five Percent Plan. Ms. Arthur stated that EPA gave the region an adequacy finding on the budget since a new budget can not be used unless EPA finds it to be adequate or the plan is approved. She noted that the Five Percent Plan was not approved; however, the region did have an adequacy finding. Ms. Arthur added that MAG expects to meet the transportation conformity budget of 59.7 metric tons per day using the new AP-42 equation.

Ms. Arthur provided an example of measures with continuing increases in benefit. She noted that this is hypothetical since some of the numbers are still unknown. Ms. Arthur noted that real data was used to the extent that it exists. She discussed a Rule 310 example. Ms. Arthur indicated that the total construction activity in 2010, based on permit data from Maricopa County, indicates that there were approximately 21,000 acres of construction area permitted in 2010. She noted that is down 61 percent from 2007; therefore, it is considerably lower than what would have been used in the 2007 Plan. Ms. Arthur indicated that if the uncontrolled emissions factor is multiplied by the acreage of construction, the total would be approximately 24,000 tons per year of PM-10, which is the base. She commented that a simplified assumption made was that the number remains constant over time. In other words, the construction activity is constant, which is not an accurate assumption but was used for simplicity. Ms. Arthur stated that the Five Percent Plan for PM-10 had nine Rule 310 measures; however, she is only listing eight. She indicated that Measure 36 is also part of Rule 310. Ms. Arthur added that out of the 53 measures, about 17 percent of the measures applied to Rule 310.

Ms. Arthur stated that it is unknown how each individual measure impacted emissions; however, the rule effectiveness is known since it is measured by Maricopa County each year. She added that the County is currently developing new rule effectiveness numbers so this example is strictly hypothetical. Ms. Arthur indicated that since she does not know what that number will be, she used 80 percent for 2008, 81 for 2009, and 82 percent for 2010. She commented that over a three year period, it was determined that the rule effectiveness (compliance with Rule 310) has improved as a result of the nine measures. Ms. Arthur mentioned that for those nine measures, trends indicate that there is an increase of one percent per year in compliance. She added that the increasing benefit may be attributed, for example, to the training being conducted by the County. Ms. Arthur noted that there have been increases in compliance with Rule 310 over time. For projection purposes, it could be assumed that this will continue to increase one percent per year for the next three years. She added that this assumption may be made for the Five Percent Plan; however, there is a limit. Ms. Arthur noted that you can not go above 100 percent and EPA does not typically allow compliance rates above 90 percent. Ms. Arthur added that there is a limit to what EPA would consider reasonable, which is the reason these numbers were used.

Ms. Arthur stated that assuming that the total uncontrolled emissions remain the same for 2011, 2012, and 2013, the compliance rates of 83, 84, and 85 percent are multiplied by 90 percent. She noted that the reason for this is because it is assumed that the controls that are being applied on the construction sites are 90 percent effective. Ms. Arthur commented that this is allowed by EPA. Ms. Arthur mentioned that the incremental percentage increase is relative to construction emissions. She indicated that the total construction emissions are increasing by 0.9 percent from the 2011 base year. Ms. Arthur noted that the base for the plan is yet to be determined; however, 2011 is likely. She commented that the increase is 0.9 percent in each of those years, which results in a 1.8 percent benefit for the two year period.

Ms. Arthur discussed the issues with the hypothetical example. She stated that if construction sources represent 10 percent of total PM-10 emissions in the base year of 2011, the annual reduction for the Rule 310 measures would be less than 0.1 percent in 2012 and 2013. She discussed the challenge of showing five percent reductions when these reasonable increases only result in a 0.1 percent benefit. Ms. Arthur stated that construction emissions will not remain constant between 2010 and 2013. Ms. Arthur noted that the latest socioeconomic forecast from Marshall Vest, University of Arizona, indicates that the construction emissions decline in 2008, 2009, 2010, and 2011 and will slightly increase in 2012. She added that the assumption in the example is too simple since there are going to be declines in construction emissions relative to 2010. Ms. Arthur stated that it will be difficult to show five percent per year reductions when many control measures are already in place. Therefore, the region may only get small increases in benefits over time. She indicated that the measures such as Rule 310 in the plan, although they have continuing benefits, do not have increases in benefits over time, which is an important distinction to note. Ms. Arthur mentioned that the benefits will be factored into the base; however, the benefits will not be increasing. Therefore, the region will have difficulty in achieving additional five percent per year reductions.

Ms. McGennis referred to the total construction activity. She stated that Ms. Arthur mentioned that MAG looks at one percent effectiveness each year. Ms. McGennis added that the 2005 emissions inventory was used for 2007 and at that time there was a compliance rate of only 49 percent. She mentioned the compliance rate going from 49 to 80 percent. Ms. McGennis asked why only a one percent increase in compliance each year is now being given. Ms. Arthur responded that those were the numbers measured by Maricopa County in 2005. She added that the example is not necessarily accurate; however, there is an increasing trend in compliance. She added that there is no other

reasonable explanation for the increase in Rule 310 compliance from 51 to 80 percent, other than the implementation of the control measures in the Plan. Ms. Arthur noted that an increase in Rule 310 compliance is actually being measured by Maricopa County and is not hypothetical. Ms. Arthur indicated that in 2005, Maricopa County measured that approximately half of the construction sites were not complying with Rule 310. She noted that the tremendous increase in compliance with Rule 310 was helpful in achieving the required five percent per year reductions in the Five Percent Plan.

Ms. McGennis inquired what will happen if compliance remains constant or increasing at one percent each year and the region is still not attaining at the monitors. She added that this can not be put on the backs of industry. Ms. Arthur responded that the example shows that there is very little room in the future for reductions. She added that there was room in the past; however, the compliance numbers are too high in the future. Ms. Arthur noted that the compliance rates are great. She indicated that there is a limit and 100 percent compliance can not be expected. Ms. Arthur mentioned that MAG will not be able to use the same approach in developing the five percent reductions; other sources will need to be evaluated. She stated that by focusing on high winds, the hope is to reduce that piece of the inventory. Ms. Bauer stated that the construction industry has done a great job with compliance. She added that since the compliance rate is so high, very little additional benefit if any could be taken. Ms. Bauer noted that the construction industry has done a great job in implementing measures. She mentioned that some of the suggestions from the construction industry such as training, in which the Associated General Contractors has been actively involved, have paid off. Mr. Kukino also thanked the County for their program and success.

Matt Poppen, MAG, discussed draft revisions to the 2008 PM-10 windblown dust inventory for the Maricopa County PM-10 nonattainment area. He indicated that he gave this presentation at the February 23, 2011 Five Percent Technical Committee meeting. Mr. Poppen stated that the committee is made up of MAG, Maricopa County, ADEQ, and EPA who are reviewing the changes to the emissions inventory. He mentioned that he has already received some positive feedback from his presentation; however, some of the items in his presentation are now outdated and may change. Mr. Poppen added that the core principles remained that same.

Mr. Poppen stated that EPA had requested a conceptual framework for windblown dust. They want to know what the region believes is happening when there are high winds and increased emissions. He mentioned that a lot of research was done and articles were found on studies conducted in the U.S. southwestern deserts that helped to provide the new framework. The main article referenced and supported by many other articles was done by Macpherson and called *Dust Emissions in Disturbed and Undisturbed Desert Areas in a Supply-Limited Environment.* Mr. Poppen indicated that the article discusses supply-limited environments, which is what we have here in Maricopa County. Supply-limits mean the soil is only going to produced for a limited amount of time because the supply on that soil is regulated by lots of different factors such as soil moisture, vegetation, rock cover, etc. He stated that most of the windblown dust studies conducted are in transport-limited environments such as the Sahara and Gobi Deserts. In these environments, there is no supply limitation. As long as the wind blows in these areas, there will be emissions. This is not the situation in our arid environment and the condition of the soil plays a huge role in how much the soil is able to emit.

Mr. Poppen stated that a key quote from the Macpherson article is *"Results indicate that for these supply-limited environments, PM-10 emissions are primarily driven by the aerodynamic resuspension of loose surface materials as opposed to dynamic entrainment mechanisms associated with saltating grains."* In other words, the wind here picks up the particles that are available to be suspended and

it is not a process of saltation. Saltation is where you can visibly observe sand particles moving, hitting each other, breaking up other particles, and starting a chain reaction. Mr. Poppen indicated that saltation events do occur in the region when there is a haboob. However, most of the windblown dust emissions seen here occur within the first five or 10 minutes of the initial windy hour.

Mr. Poppen mentioned that an important distinction is that most articles measure the threshold speed, which is very critical, of when windblown dust is initiated as when saltation occurs. The assumption is if you do not have saltation, you do not have PM-10 emissions. He stated that Macpherson, Clark County and others have found that there are emissions quite early before saltation occurs. Because of this, the wind speed at which emissions occur is much lower than that seen with saltation. Mr. Poppen mentioned that the article states that PM-10 emissions occur at 50 to 75 percent of the saltation speeds.

Mr. Poppen indicated that wind tunnel studies performed in the Macpherson article, along with recent Clark County tests, indicate PM-10 emission thresholds in the 11 to 14 miles per hour range for both disturbed and undisturbed soils. Many other studies indicate thresholds in the high twenties. He stated that these articles clearly show that PM-10 emissions occur at a lower rate, especially in a supply-limited environment. Another important part of the articles is that disturbance of soil has the primary effect of generating more PM-10 emissions than undisturbed soils under similar wind speeds and does not necessarily lower the threshold wind speed upon which PM-10 emissions are initiated.

Mr. Poppen discussed how these studies/articles translate into changes in the inventory. He stated that the current inventory assumes that there is one threshold for undisturbed soils and a lower threshold for disturbed soils. The threshold is now being set the same for both disturbed and undisturbed. Mr. Poppen provided a schematic of the windblown dust generation process. He noted that it is at approximately PM-40 when dust is actually visible. Therefore, dust can be impacting the monitors when it is not even visible.

Mr. Poppen indicated that there are four changes to the inventory as a result of the new framework: 1) Lowered the threshold wind speed necessary for PM-10 entrainment to 12 mph (five-minute average) at 10-meters for all soils and land uses (except active agriculture fields); 2) Developed unique PM-10 vertical emissions fluxes for disturbed and undisturbed soils; 3) Applied new inspection data to determine percentages of disturbed and undisturbed soils by land use; and 4) Scaled windblown PM-10 emissions to match observed annual monitor concentrations (sensitivity analysis). He discussed the details of each change.

Mr. Poppen stated that for lowering threshold wind speeds to 12 mph (five-minute average) at 10 meters, 12 mph was chosen for the following reasons: Macpherson wind tunnel tests indicated PM-10 emission thresholds in the low teens; Clark County wind tunnel tests on a variety of soil types generated PM-10 emissions at lowest available wind speeds, approximately 11 mph; and the 1989 Nickling & Gillies local wind tunnel tests observed saltation occurring at ranges of 13 to 30 mph, meaning PM-10 emission initiation is likely 50 to 75 percent of those speeds.

Mr. Poppen discussed developing fluxes for disturbed and undisturbed soils. He indicated that through the use of 1989 Nickling and Gillies local wind tunnel tests (seven sites used, agriculture fields and mine tailings excluded), a PM-10 flux for disturbed soils can be developed. The developed flux compares well with fluxes observed in the Macpherson article and Clark County wind tunnel tests. Mr. Poppen stated that since 1989 Nickling & Gillies local wind tunnel tests were done primarily on disturbed soils, the ratio of disturbed to undisturbed fluxes observed by Macpherson was used to create

an undisturbed flux. He presented the Nickling & Gillies disturbed flux. Mr. Poppen stated that there is a correlation of approximately 65 percent, which is a good confidence level for a disturbed soil flux.

Mr. Poppen provided a table comparing the calculated PM-10 emissions fluxes. He indicated that the Nickling & Gillies fluxes are in the middle with the Macpherson fluxes being lower and the Clark County fluxes being higher. Mr. Poppen noted that the Nickling & Gillies fluxes are used here; however, they are all in the same order of magnitude which is good for these types of estimations.

Mr. Poppen discussed the new inspection data (July 2008 to June 2009) used to determine disturbed versus undisturbed land uses. He stated that the June 2010 version of the emissions inventory just uses the rule effectiveness rate to determine the percent of soils disturbed and undisturbed. Mr. Poppen indicated that is too high based on other approaches used since rule effectiveness rates are in the 80 percent range. This would mean 20 percent of the soils would be disturbed at all times, which is unreasonable given observations. Mr. Poppen stated that for developing land uses (Rule 310), the disturbance rate was instead determined by the number of violations written for Section 304 of the rule which deals directly with stabilization requirements. A total of 2.62 percent of permits were given violations of this section. For sand and gravel land uses (Rule 316), the disturbance rate was determined by the number of violations written for Section 306.5 of the rule which details stabilization requirements. A total of 2.21 percent of permits were given violations of this section. For all vacant, open and fallow agriculture land uses, a disturbance rate was determined by the number of violations written for failure to pass a Rule 310.01 stabilization test. A total of 0.73 percent failed one of the stabilization tests. Mr. Poppen added that for comparison, Clark County reports 1.1 percent of their land uses as disturbed (December 2006).

Mr. Poppen discussed the scaling of windblown PM-10 emissions to match monitor concentrations. He stated that after the emission fluxes are developed, the amount of emissions are determined. Mr. Poppen indicated that windblown PM-10 emissions prior to scaling are maximum potential emissions, all eligible land uses are calculated to emit at 100 percent of their emission flux. They do not take into account the limiting effects of differing surface roughness, vegetation of soils, moisture of soils, crusting of soils, supply reservoir, etc. because data is unavailable. Therefore, the emissions need to be scaled to a reasonable test. He stated that a mechanism in order to properly account for these missing variables is needed, which is a sensitivity analysis. Mr. Poppen mentioned that the mechanism chosen was to look at monitor readings. He indicated that 2009 hourly PM-10 and wind speed monitor readings allow for the association of PM-10 mass with hourly winds over 10 mph. This provides a scaling factor with which to adjust final, annual windblown emissions. Mr. Poppen noted that he will be adjusting this to match with the five minute threshold of 12 mph; however, the percentages will likely stay approximately the same.

Mr. Poppen presented the scaled windblown PM-10 emissions to match monitor concentrations. He stated that, on average, over the monitoring network 7.86 percent of emissions are associated with high wind events. Mr. Poppen indicated that the West 43rd Avenue monitor is the highest where approximately 12 percent of the concentrations are associated with winds over 10 mph. At the low end is Glendale where only 3.53 percent of the concentrations are associated with hourly winds over 10 mph. Mr. Poppen added that looking at the PM-10 nonattainment area as a whole approximately 7.5 percent of the PM-10 concentrations are associated with high winds. Using this factor, the emissions where scaled based on what is expected using monitor data.

Mr. Poppen indicated that to be conservative (one standard deviation), it was assumed that 10 percent of annual PM-10 mass is associated with windblown dust. Given this ratio, annual windblown dust

is assumed to be 10 percent of the total inventory. He stated that current PM-10 nonattainment area emissions estimates for all sources, which is still under review, excluding windblown dust, total 44,391 tons. Under the scaling scenario above, this total represents 90 percent of the inventory, allowing windblown dust to fill the last 10 percent for a windblown total of 4,932 tons. Mr. Poppen noted that the ratios of land uses and disturbance rates in the windblown dust categories are assumed to be constant during the scaling down process.

Mr. Poppen presented the results of the scaling down process. He stated that the original annual emissions calculated were 52,256.39 tons. Mr. Poppen indicated that original calculated annual PM-10 emissions were reduced by 90.56 percent in order to meet scaling factor target of 4,932 tons of PM-10.

Mr. Poppen provided a comparison of the June 2010 windblown PM-10 inventory to the draft February 2011 inventory. The June 2010 version did not go through the scaling process and had different threshold mechanisms, which were unrealistic. He noted that the inventory is still in draft form. Mr. Poppen indicated that the calculations shown are preliminary. He added that the methodology and data inputs may change after review by participating agencies and stakeholders.

Ms. McGennis clarified that Rule 310 is an earthmoving rule. It is not a construction activity rule. Mr. Poppen agreed with Ms. McGennis. She asked that for all open vacant land, how many violations were written. Mr. Poppen responded that it depends on the number of inspections conducted. He indicated that it would be 2.5 percent of the approximately 5,000 Rule 310 inspections conducted, or around 158 violations for Rule 310. Mr. Poppen added that only three permits for Rule 316 received these violations. He added that there were about 12,000 inspections for Rule 310.01 so one percent of that would be approximately 120 that failed the stability tests.

Steve Trussell, Arizona Rock Products Association, referred to the slide that indicated current PM-10 nonattainment area emission estimates for all sources excluding windblown dust total 44,000 tons. He inquired if the total would be about 50,000 tons if it included windblown dust. Mr. Poppen replied that the total would be about 50,000 tons since windblown dust is approximately 5,000 tons. Mr. Trussell asked about the total before these changes. Mr. Poppen responded 73,000 tons. He stated that the lower number is the result of the 61 percent reduction Ms. Arthur discussed from AP-42 in addition to rule effectiveness changes. Mr. Poppen stated that the number may increase or decrease; however, it will be in that ballpark. He added that it will be much lower that what was seen in the June 2010 inventory.

Ms. Bauer stated that the data presented has been qualified since it is preliminary and under review. She indicated that the data is therefore subject to change.

6. PM-10 Monitoring Data

Julie Hoffman, MAG, provided an update on the PM-10 monitoring data since 2008. She indicated that information on the concentration and date of each exceedance by monitor are being distributed. Ms. Hoffman stated that charts are also being provided that include the number of exceedance days and exceedances by monitor for 2008 through 2010. She mentioned that in terms of exceedance days, there were eleven in 2008, seven in 2009, and one in 2010. In addition, an exceedance occurred on February 19, 2011 at the West Chandler monitor. This is the first exceedance in 2011. Ms. Hoffman indicated that ADEQ will be evaluating this exceedance to determine if it qualifies as an exceptional event.

Mr. Trussell inquired about the 2009 data. He indicated that it was his understanding three of those days were not attributable to high winds. Ms. Hoffman replied that ADEQ has stated that all the exceedances in 2009 are exceptional events; however, they have not been approved by EPA. Mr. Trussell asked about exceedances that were not across the monitoring network that may still be in question. Ms. Arthur responded that there were three such exceedances. Ms. Hoffman mentioned that one of the tables distributed lists the exceedances and the dates they occurred in 2009. Ms. Arnst added that there are three exceedances in 2009 that would be much more difficult to document under the current ADEQ Exceptional Events Policy.

7. Tentative MAG Air Quality Project Schedule

Ms. Bauer reported on the tentative MAG air quality project schedule. She indicated that the schedule is for January 2011 through December 2012 and describes the major regional air quality planning activities. Ms. Bauer mentioned that the Carbon Monoxide Maintenance Plan Revision will be due in April 2013. She also discussed the CMAQ Annual Report and CMAQ Project Evaluations. Ms. Bauer stated that for conformity on the new Transportation Improvement Program and Regional Transportation Plan, the schedule will need some flexibility due to the changing economic conditions. She mentioned contract management and the Eight-Hour Ozone Plan. Ms. Bauer indicated that the eight-hour ozone standard continues to be postponed so this is a placeholder.

Ms. Bauer discussed the evaluation and implementation of the MOVES model. She stated that MAG will begin applying the MOVES model even though it is not required until March 2012. Ms. Bauer indicated that MAG believes it would be prudent to use it for the new five percent plan and the emissions inventory so everything is constant. She mentioned that MAG also continues to review city general plans and plan amendments as part of its air quality activities. Ms. Bauer stated that with regard to greenhouse gas reduction requirements, there was a lot of activity approximately one year ago. She indicated that the activity has decreased; however, MAG has been hearing there may be something included in the Surface Transportation Reauthorization Act.

Ms. Bauer discussed the schedule for the Five Percent Plan for PM-10. She indicated that the schedule provided serves as a placeholder. Ms. Bauer stated that the date to submit is known and time is short. She indicated that the hope is to get an attainment finding under the EPA Clean Data Policy, but the schedule provides a placeholder for a plan. Ms. Bauer concluded by discussing the schedule for the PM-10 paving unpaved road projects evaluation and PM-10 street sweepers projects evaluation.

Ms. Arnst referred to eight-hour ozone and indicated that the schedule does not include the interim year modeling requested by EPA in order to complete the redesignation under the 1997 ozone standard. Ms. Bauer responded that EPA will be sending a letter to MAG indicating which years to use. Colleen McKaughan, EPA, indicated that she will be providing the letter within a few days. She stated that once she has the information, she will detail that for the Committee as well.

8. Call for Future Agenda Items

Mr. Kukino requested suggestions for future agenda items. Mr. Trussell requested an update on the status of the inventory at a future meeting.

Mr. Kukino announced that the next meeting of the Committee has been tentatively scheduled for Thursday, March 24, 2011 at 1:30 p.m. With no further comments, the meeting was adjourned at 3:00 p.m.

Agenda Item #4

CMAQ DETAILED PROJECT LISTING REPORT (FY 2010)

01-March-2011

Fiscal Year = '2010' and Status Selection Criteria = 'Approved by State' and State = 'Arizona'

STATE	Apportionments	APPORTION. AMOUNT	OBLIGATED AMOUNT	OBLIG. %	PROJECT AMOUNT	PROJECT TYPE	PROJECT TITLE & DESCRIPTION	VOC (Kg/Day)	CO (Kg/Day)	NOx (Kg/Day)	PM 10 (Kg/Day)	PM 2.5 (Kg/Day)	CONTINUING PROJECT?
Arizona	11/20/1930	$50,000,000	$55,303,091	111 %									
Arizona					$1,310,000	I/M and Other TCMs	Maricopa Association of Governments: PM-10 certified street sweepers Purchase PM-10 certified street sweepers region wide				1,067		
Arizona					$61,588	I/M and Other TCMs	Buckeye: Design pave unpaved road Design pave unpaved road at North Watson Rd and MC 85				41		
Arizona					$51,412	I/M and Other TCMs	Buckeye: Pave dirt shoulders Pave dirt shoulders at various locations at MC 85/Monroe Southern Ave and Apache Rd				17		
Arizona					$1,750,000	Pedestrian/Bicycle	Phoenix: Multi-use underpass Construct bicycle underpass at Arizona Canal Diversion Channel and 7th Ave	2	27	1	1		
Arizona					$1,685,769	Pedestrian/Bicycle	Gilbert: Pedestrian and bicycle improvements Construct pedestrian and bicycle improvements on Eastern Canal from Santan Vista Trail - Guadalupe Rd to Warner Rd	1	8	1	1		
Arizona					$1,010,000	Pedestrian/Bicycle	Phoenix: Multi-use path Construct multi-use path and bridge at 19th Ave and Greenway Rd	1	5	1	1		
Arizona					$589,599	Pedestrian/Bicycle	Gilbert: Pedestrian improvements Design and construct sidewalks and other pedestrian improvements in Gilbert Heritage District	1	4	1	1		
Arizona					$400,000	Pedestrian/Bicycle	Glendale: Pedestrian and bicycle facilities Widen existing bridge to provide pedestrian and bicycle access across bridge at Skunk Creek and Bell Rd	1	7	1	1		
Arizona					$346,171	Pedestrian/Bicycle	Fountain Hills: Pedestrian and bicycle sidewalk Design and construct sidewalks on Fountain Hills Blvd from Fayette Dr to Fountain Hills Middle School	1	2	1	1		

CMAQ DETAILED PROJECT LISTING REPORT (FY 2010)

01-March-2011

Fiscal Year = '2010' and Status Selection Criteria = 'Approved by State' and State = 'Arizona'

STATE	Apportionments	APPORTION. AMOUNT	OBLIGATED AMOUNT	OBLIG. %	PROJECT AMOUNT	PROJECT TYPE	PROJECT TITLE & DESCRIPTION	VOC (Kg/Day)	CO (Kg/Day)	NOx (Kg/Day)	PM 10 (Kg/Day)	PM 2.5 (Kg/Day)	CONTINUING PROJECT?
Arizona					$210,228	Pedestrian/Bicycle	Glendale: Multi-use path Design and construct multi-use path under Union Hills Dr at Skunk Creek	1	12	1	1		
Arizona					$175,000	Pedestrian/Bicycle	Surprise: Design multi-use path Design multi-use path on Bell Rd from US 60 to 114th Ave	3	39	1	1		
Arizona					$950,356	Shared Ride	Maricopa Association of Governments: Regional Rideshare and Telework Program Regional Rideshare and Telework Program	260	3,453	256	235		
Arizona					$915,046	Shared Ride	Maricopa Association of Governments: Trip Reduction Program Trip Reduction Program	373	4,951	367	337		
Arizona					$139,598	Shared Ride	Maricopa Association of Governments: Travel Reduction Program Capitol Rideshare Program	3	38	3	3		
Arizona					$14,070,805	Traffic Flow Improvements	Arizona Department of Transportation: Construct high occupancy vehicle lanes Construct HOV lanes in each direction on Loop 101 Agua Fria and Pima Freeways from Interstate-10 to Tatum Blvd	44	-496	-40	-2		
Arizona					$2,758,363	Traffic Flow Improvements	Mesa: Intelligent Transportation Systems Construct Phase 4B on Alma School Southern Ave Baseline Rd and Guadalupe Rd to include fiber cameras detection cabinets controllers	9	-2	4			
Arizona					$2,500,000	Traffic Flow Improvements	Arizona Department of Transportation: Freeway Management System Rehabilitate FMS facilities in Phoenix region	264	3,979	285	10		
Arizona					$938,840	Traffic Flow Improvements	Mesa: Intelligent Transportation Systems Install closed-circuit television and video detection cameras in East Mesa at various locations	11	54	13			
Arizona					$735,000	Traffic Flow Improvements	Maricopa County: Traffic management center Design and construct Traffic Management Center upgrade	30	167	36			

CMAQ DETAILED PROJECT LISTING REPORT (FY 2010)

01-March-2011

Fiscal Year = '2010' and Status Selection Criteria = 'Approved by State' and State = 'Arizona'

STATE	Apportionments	APPORTION. AMOUNT	OBLIGATED AMOUNT	OBLIG. %	PROJECT AMOUNT	PROJECT TYPE	PROJECT TITLE & DESCRIPTION	VOC (Kg/Day)	CO (Kg/Day)	NOx (Kg/Day)	PM 10 (Kg/Day)	PM 2.5 (Kg/Day)	CONTINUING PROJECT?
Arizona					$700,000	Traffic Flow Improvements	Surprise: Intelligent Transportation Systems Design and construct fiber optic cable interconnection of existing and future ITS facilities on Peoria Ave from Litchfield Rd to Jackrabbit Rd	5	11	4			
Arizona					$644,031	Traffic Flow Improvements	Mesa: Intelligent Transportation Systems Construct Phase 4A on Dobson Rd Broadway Rd Alma School Rd to include fiber cameras detection cabinets and controllers	3	-1	2			
Arizona					$600,000	Traffic Flow Improvements	Arizona Department of Transportation: Freeway Management System Design Freeway Management System Interstate-17 from Arizona Canal to Loop 101	22	332	24	1		
Arizona					$559,115	Traffic Flow Improvements	Arizona Department of Transportation: Freeway Management System Construct ramp metering systems on Loop 101 (Price Fwy) between Baseline Rd and Chandler Blvd	13	189	14	1		
Arizona					$550,221	Traffic Flow Improvements	Queen Creek: Intelligent Transportation Systems Construct ITS infrastructure and traffic management system in town center	1	-12	-2			
Arizona					$547,000	Traffic Flow Improvements	Guadalupe: Design and construct left and right turn lanes Design and construct left and right turn lanes curb gutter sidewalks bus stops and cross walks on Guadalupe Rd from Highline Canal to Calle Sahauro	1	1	1			
Arizona					$492,962	Traffic Flow Improvements	Maricopa County: Intelligent Transportation Systems Install conduit and fiber-optic cable to connect existing and planned ITS field devices on 99th Ave from Olive Ave to Bell Rd	1	-34	-11			
Arizona					$331,139	Traffic Flow Improvements	Glendale: Intelligent Transportation Systems Install closed-circuit television cameras and communications equipment on Olive Ave from 75th Ave to 59th Ave	1	7	1			

CMAQ DETAILED PROJECT LISTING REPORT (FY 2010)

01-March-2011

Fiscal Year = '2010' and Status Selection Criteria = 'Approved by State' and State = 'Arizona'

STATE	Apportionments	APPORTION. AMOUNT	OBLIGATED AMOUNT	OBLIG. %	PROJECT AMOUNT	PROJECT TYPE	PROJECT TITLE & DESCRIPTION	VOC (Kg/Day)	CO (Kg/Day)	NOx (Kg/Day)	PM 10 (Kg/Day)	PM 2.5 (Kg/Day)	CONTINUING PROJECT?
Arizona					$321,497	Traffic Flow Improvements	Maricopa Association of Governments: Traffic signal optimization Implement Traffic Signal Optimization Project	10	-3	5			
Arizona					$305,568	Traffic Flow Improvements	Tempe: Intelligent Transportation Systems Purchase and install video detection system	40	-10	20			
Arizona					$224,000	Traffic Flow Improvements	Glendale: Intelligent Transportation Systems Purchase of remote control traffic signal systems for Traffic Management Center	1	3	1			
Arizona					$223,885	Traffic Flow Improvements	Maricopa Association of Governments: Intelligent Transportation Systems Evaluation of Intelligent Transportation Systems in the MAG Region	16	237	17	1		
Arizona					$96,041	Traffic Flow Improvements	Tempe: Intelligent Transportation Systems Develop Intelligent Transportation Systems and Communications Strategic Plan	51	281	60			
Arizona					$89,600	Traffic Flow Improvements	Paradise Valley: Intelligent Transportation Systems Install video detection systems at 12 intersections	8	38	10			
Arizona					$44,047	Traffic Flow Improvements	Arizona Department of Transportation: Intersection improvements Construct intersection and bicycle and pedestrian improvements on 99th Ave from Interstate-10 to Van Buren St	1	10	1	1		
Arizona					$10,000,000	Transit	Valley Metro Rail: Preliminary engineering/FEIS Preliminary Engineering/FEIS for Fixed Guideway Corridor in Central Mesa	36	479	36	33		
Arizona					$6,250,210	Transit	Phoenix: Purchase buses Purchase 15 replacement standard 40-foot buses	1	5	15	2		

CMAQ DETAILED PROJECT LISTING REPORT (FY 2010)

01-March-2011

Fiscal Year = '2010' and Status Selection Criteria = 'Approved by State' and State = 'Arizona'

STATE	Apportionments	APPORTION. AMOUNT	OBLIGATED AMOUNT	OBLIG. %	PROJECT AMOUNT	PROJECT TYPE	PROJECT TITLE & DESCRIPTION	VOC (Kg/Day)	CO (Kg/Day)	NOx (Kg/Day)	PM 10 (Kg/Day)	PM 2.5 (Kg/Day)	CONTINUING PROJECT?
Arizona					$2,726,000	Transit	Valley Metro Rail: Preliminary engineering/FEIS Preliminary Engineering/FEIS for Fixed Guideway Corridor in Tempe South	4	52	4	4		
Nationwide Totals		$50,000,000	$55,303,091	111 %									

* States without ozone or CO Nonattainment or maintenance areas QA - Qualitative Assessment PR - Previously Reported c - Changed benefit from previous year report

Protecting the air we share

Air Quality

NATURAL EVENTS ACTION PLAN FOR HIGH-WIND EVENTS CLARK COUNTY, NEVADA

(Las Vegas Valley – Hydrographic Area 212
and the Apex Valley – Hydrographic Areas 216/217)

Clark County
Department of Air Quality & Environmental Management
500 S. Grand Central Parkway, 1st Floor
Las Vegas, Nevada 89155-5210

April 2005

Table of Contents

List of Figures

Acknowledgements

CLARK COUNTY BOARD OF COUNTY COMMISSIONERS	Rory Reid, Chair Myrna Williams, V-Chair Tom Collins Yvonne Atkinson-Gates Chip Maxfield Lynette Boggs McDonald Bruce L. Woodbury
OFFICE OF THE COUNTY MANAGER	Thom Reilly, County Manager Richard B. Holmes, Assistant County Manager Catherine Cortez Masto, Assistant County Manager Virginia Valentine, Assistant County Manager
CLARK COUNTY DEPARTMENT OF AIR QUALITY & ENVIRONMENTAL MANAGEMENT	Christine Robinson, Director William Cates, Principal Planner Robert Folle, Compliance Manager Karen Hodges, Senior Office Specialist Gary Howell, Air Quality Specialist II John Koswan, Assistant Planning Manager Russell Merle Jr., Senior Planner James Morneault, Monitoring Technician II Anita Gutierrez Sanders, Senior AQ Specialist Ron Smolinski, Public Outreach Coordinator
CLARK COUNTY HEALTH DISTRICT	Dr. Donald S. Kwalick, Chief Health Officer Doug Joslin, Health District Representative Jennifer Sizemore, Public Information Officer
PARTICIPATING STAKEHOLDER COMMITTEE	Jennifer Anderson, Sierra Club, Southern Nevada Group Colleen Cripps, Nevada Division of Environmental Protection Wilisha Daniels, Conservation District of Southern Nevada Jeffery Dix, City of Las Vegas John Duggan, Clark County School District Paul Fransioli, Citizen & Environmental Consultant Douglas Joslin, Clark County Health District Leslie Long, City of North Las Vegas Brenda Pohlmann, City of Henderson Kim Runk, National Weather Service

List of Acronyms

Acronym	Definition
ADT	Average Daily Trips
AIRS	Aerometric Information Retrieval System
AQI	Air Quality Index
AQRs	Air Quality Regulations (Clark County Department of Air Quality and Environmental Management)
BACM	Best Available Control Measures
BCC	Clark County Board of County Commissioners
BLM	Bureau of Land Management (U.S. Department of the Interior)
BMP	Best Management Practice
CAAA	Clean Air Act Amendments of 1990
CCCD	Clark County Conservation District
CFR	Code of Federal Regulations
CMB	Chemical Mass Balance
CAO	Corrective Action Order
DAQEM	Clark County Department of Air Quality & Environmental Management
FR	Federal Register
GIS	Geographic Information System
MAC	Medical Advisory Committee
MET	Meteorology Data (Weather, Winds, Precipitation, etc.)
mph	miles per hour
MSM	Most Stringent Measures
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NOAA	National Oceanic Atmospheric Administration - Climatic Data Center
NOV	Notice of Violation
NWS	National Weather Service
PEP	Particulate Emission Potential
PM	Particulate Matter
PM_{10}	Particulate Matter 10 microns or less in aerodynamic diameter
$PM_{2.5}$	Particulate Matter 2.5 microns or less in aerodynamic diameter
PSA	Public Service Announcement
QA/QC	Quality Assurance / Quality Control
RFP	Reasonable Further Progress Report
RTC	Regional Transportation Commission of Clark County
SIP	Clark County, Las Vegas Valley, PM_{10} State Implementation Plan
SLAMS	State and Local Air Monitoring Station
UNLV	University of Nevada, Las Vegas
U.S. EPA	United States Environmental Protection Agency
$\mu g/m^3$	Micrograms per cubic meter

Executive Summary

The U.S. EPA in accordance with the Clean Air Act (CAA) has classified Clark County as a "serious" nonattainment area for PM_{10}, (particulate matter having an aerodynamic diameter of 10 microns or less). Ten microns is approximately one-seventh the diameter of a human hair. Violations of the National Ambient Air Quality Standards (NAAQS) for PM_{10} are largely due to windblown dust from a variety of sources. High-wind events (sustained winds of 25 mph or greater and/or wind gusts at 40 mph or greater[1]), because they can overwhelm even the most stringent control measures, present a public health concern for both residents and visitors to Clark County. This Natural Events Action Plan (NEAP), prepared in compliance with the U.S. EPA Natural Events Policy (1996), is designed to accomplish three primary objectives:

- Provide a high-wind notification system for the public and the regulated community to warn of an impending event; notify the public of an ongoing event; and to alert the public of unhealthful concentrations of PM_{10} in the air. The notification system provides the public with useful information concerning the health effects of PM_{10} and suggests ways the public and at risk populations can limit their exposure;

- Provide education and outreach programs to the public, businesses, and industrial communities. The programs and informational materials inform the public; businesses and industrial communities how they may reduce their exposure to elevated PM_{10} concentrations during high-wind events; and actions they can take to help reduce PM_{10} emissions; and

- Ensure that PM_{10} control measures are implemented during high-wind events to reduce elevated PM_{10} concentrations and the frequency of violations of the NAAQS.

This NEAP applies to the Las Vegas Valley (Hydrographic Area 212) and the Apex Valley (Hydrographic Areas 216 and 217). Both of these areas have experienced violations of the 24-hour NAAQS for PM_{10}. Clark County and participating stakeholders utilized the guiding principles of the U.S. EPA Natural Events Policy in the development of this NEAP. Protection of the public health is the foundation upon which this document is based. The NEAP and corresponding appendices present detailed information on the actions and programs already implemented in Clark County.

These actions and programs include the high-wind event notification system; education and outreach programs; enforcement actions designed to reduce PM_{10} emissions during

[1] June 2001 PM_{10} State Implementation Plan for Clark County, Appendix B - Emission Inventories, Methodology, Emission Factors, and Emission Estimates, Page B-37 Native Desert Fugitive Dust, and Appendix C – Section II, Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands, – Draft Final Report, David James, et al., Civil and Environmental Engineering Department, University of Nevada Las Vegas, dated September 12, 2000.

high-wind events; and required documentation submitted to the U.S. EPA for documentation of high-wind events that have resulted in violations of the PM_{10} NAAQS. The appendices include detailed information on Best Available Control Measures (BACM) for PM_{10}, documentation on the public review process, public comments, and documentation of approval by the Clark County Board of Commissioners of the NEAP.

Section 1: INTRODUCTION

On May 30, 1996, the U.S. EPA issued the Natural Events Policy (NEP) in a memorandum from Mary D. Nichols, Assistant Administrator for Air and Radiation. In this memorandum, the U.S. EPA announced its new policy for protecting public health when the PM_{10} National Ambient Air Quality Standards (NAAQS) are exceeded due to natural events. Under this policy three categories of natural events are identified as exceeding the PM_{10} NAAQS:

- Volcanic and seismic activity;
- Wildland fires; and
- High-wind events.

Only high-wind events are addressed in this NEAP, because of the natural events defined in the NEP, only high winds have caused exceedances in Clark County. During 2002, four high-wind events occurred resulting in exceedances of the PM_{10} NAAQS. During 2003, two high-wind events occurred resulting in exceedances of the PM_{10} NAAQS. Lastly, two high-wind events occurred during 2004 that resulted in exceedances of the PM_{10} NAAQS. Therefore, this NEAP is limited to addressing high-wind events.

The U.S. EPA's natural events policy defines high winds as uncontrollable natural events under the following conditions:

- The dust originated from non-*anthropogenic* (non-human-induced) sources; or
- The dust originated from *anthropogenic* (human-induced) sources controlled using best available control measures (BACM).

Conditions that create high-wind events vary from area to area and are based on soil type, precipitation, and the speed of the wind.

U.S. EPA Natural Events Policy

The U.S. EPA Natural Events Policy sets forth EPA's policy for protecting the public health in areas where violations of PM_{10} national health standards may be due to uncontrollable natural events (e.g., high winds) (See Appendix A, for a copy of the NEP). The guiding principles used by the U.S. EPA in the development of this policy are:

- Protection of public health is the highest priority of Federal, State, and local air pollution control agencies;

- The public must be informed whenever the air quality in the area is unhealthy;

- All valid ambient air quality data should be submitted to the U.S. EPA;

- State and local agencies must take appropriate reasonable measures to safeguard the public health regardless of the source of PM_{10} emissions; and

- Emission controls should be applied to sources that contribute to exceedances of the PM_{10} NAAQS when those controls will result in fewer exceedances of the standards.

In order for exceedances of the NAAQS to be considered as a high-wind event, a Natural Events Action Plan must be developed to address future events. The following is a summary of the specific U.S. EPA guidance regarding the development of a NEAP.

1. Analysis and documentation of the event should show a clear causal relationship between the measured exceedance and the natural event. The type and amount of documentation provided should be sufficient to demonstrate that the natural event occurred, and that it impacted a particular monitoring site(s) in such a way to cause the PM_{10} concentrations measured.

   A public education program shall be established. Such programs may be designed to educate the public about the short-term and long-term harmful effects that high concentrations of PM_{10} could have on their health and inform them that:

   a. Certain types of natural events affect the air quality of the area periodically,
   b. A high-wind event is imminent, and
   c. Specific actions are being taken to minimize the health impacts of events.

2. A public notification and health advisory program to minimize public exposure to high concentrations of PM_{10} shall be in place. Programs to minimize public exposure should:

   a. Identify the people most at risk;
   b. Notify the at-risk population that a high-wind event is imminent and/or currently taking place;
   c. Suggests actions to be taken by the public to minimize their exposure to high concentrations of PM_{10}; and
   d. Suggests precautions to take if exposure cannot be avoided.

3. The agency implementing the plan shall abate or minimize appropriate contributing controllable sources of PM_{10}. Programs to minimize PM_{10} emissions from high winds may include the application of BACM to any sources of soil disturbed by anthropogenic activities. The BACM application criteria require analysis of the technological and economic feasibility of individual control measures on a case-by-case basis. The NEAP should include analysis of BACM for contributing sources. If BACM are not defined for the anthropogenic sources in question, then the next step listed below is required.

4. The agency implementing the plan must identify, study, and implement practical mitigating measures as necessary. The NEAP may include commitments to conduct pilot tests of new emission reduction techniques. For example, it may be

desirable to test the feasibility and effectiveness of new strategies for minimizing sources of windblown dust through pilot programs. The plan must include a timely schedule for conducting such studies and implementing measures that are technologically and economically feasible.

5. The agency should reevaluate the NEAP for an area every 5 years at a minimum and make appropriate changes to the plan. The periodic reevaluation shall include:

    a. The conditions causing violations of a PM_{10} NAAQS in the area;
    b. The status of implementation of the NEAP; and
    c. The adequacy of the actions being implemented.

6. The NEAP should be developed by the agency in conjunction with the stakeholders affected by the plan.

7. The NEAP should be made available for public review and comment and may, but are not required, to be adopted as a revision to the State Implementation Plan (PM_{10} SIP) if current SIP rules are not revised.

8. The NEAP should be submitted to the U.S. EPA for review and comment.

The following sections and text describe the Clark County NEAP and its conformance with the above-described U.S. EPA guidance for natural events.

Purposes and Objectives of the NEAP

The purpose of the NEAP is to ensure that the citizens of Clark County are informed about the health hazards associated with wind blown PM_{10}; advised of activities that are known to result in increased windblown PM_{10} levels; advised of methods to avoid exposure to elevated levels of PM_{10}; assure that exceedances of the NAAQS are not resulting from anthropogenic activity and that disturbed soil surfaces remain stable. It is DAQEM's primary objective to minimize the public's exposure to elevated levels of PM_{10} when elevated levels cannot be humanly prevented.

The advisory and education program is the major element of the NEAP that enables DAQEM to justify an exceedance, which overwhelmed BACM. The program notifies stationary sources of the potential, or the occurrence of a high-wind event. As required by Clark County Air Quality Regulations (AQRs), the stationary sources can cease/reduce any activity that raises dust levels during high-wind events.

Scope of the Natural Events Action Plan (NEAP)

Clark County and participating stakeholders utilized the guiding principles of the U.S. EPA Natural Events policy in the development of the NEAP. Protection of the public health is the highest priority and the foundation of this document.

This NEAP contains detailed information about the actions implemented in Clark County to minimize public exposure to potentially high levels of PM_{10} caused by winds. The primary components of the NEAP are:

- The high-wind event notification system;
- Education and outreach programs;
- Enforcement program to reduce emissions; and
- The required documentation and justification system of high-wind events to be provided to the U.S. EPA.

Area of Applicability of this NEAP

This NEAP is applicable to the Las Vegas Valley and to the Apex Valley. The Las Vegas Valley is one of the fastest growing metropolitan areas in the nation. The population expanded from about 400,000 in 1980 to 1.4 million in 2000 (U.S. Census Bureau, Census 2000). The cities of Las Vegas, North Las Vegas and Henderson are located in the Las Vegas Valley within Clark County, in the southern tip of Nevada. Situated in the Las Vegas Valley, the Las Vegas metropolitan area serves as one of the fastest growing cities, and busiest entertainment centers for the United States.

The Apex Valley area is located to the northeast of the Las Vegas Valley and is comprised of Hydrographic Areas 216 and 217. No residences are located in the Apex Valley, but a number of people are employed at the industrial facilities located in the valley. A regional landfill, power plants, mining operations, and mineral processing facilities are located in the southern part of the Apex Valley. All stationary sources within the Apex Valley have installed Best Available Control Technology for PM_{10}.

Emphasis is placed on dust control and the requirements of the AQRs due to possible influences from the Las Vegas Valley through regional transport. Wind flow patterns into the Apex Valley and the predominant wind flow patterns of the Apex Valley make dust control extremely important. The main purpose of this dust control is to protect the health of the workers within that area and to ensure that the Apex Valley does not contribute to regional haze transport to the Grand Canyon. The Grand Canyon is only 100 kilometers (62.14 miles) from that area. The other areas in Clark County that could be influenced by the Las Vegas Valley and Apex Valley transport issues are the cities of Logandale, Mesquite, Overton, Moapa, and outlying areas near these cities.

For further information about the geography, climatology and land uses in these two areas, see Appendix B. The following map (Figure 1) shows the locations of the two areas that are specifically covered by this NEAP.

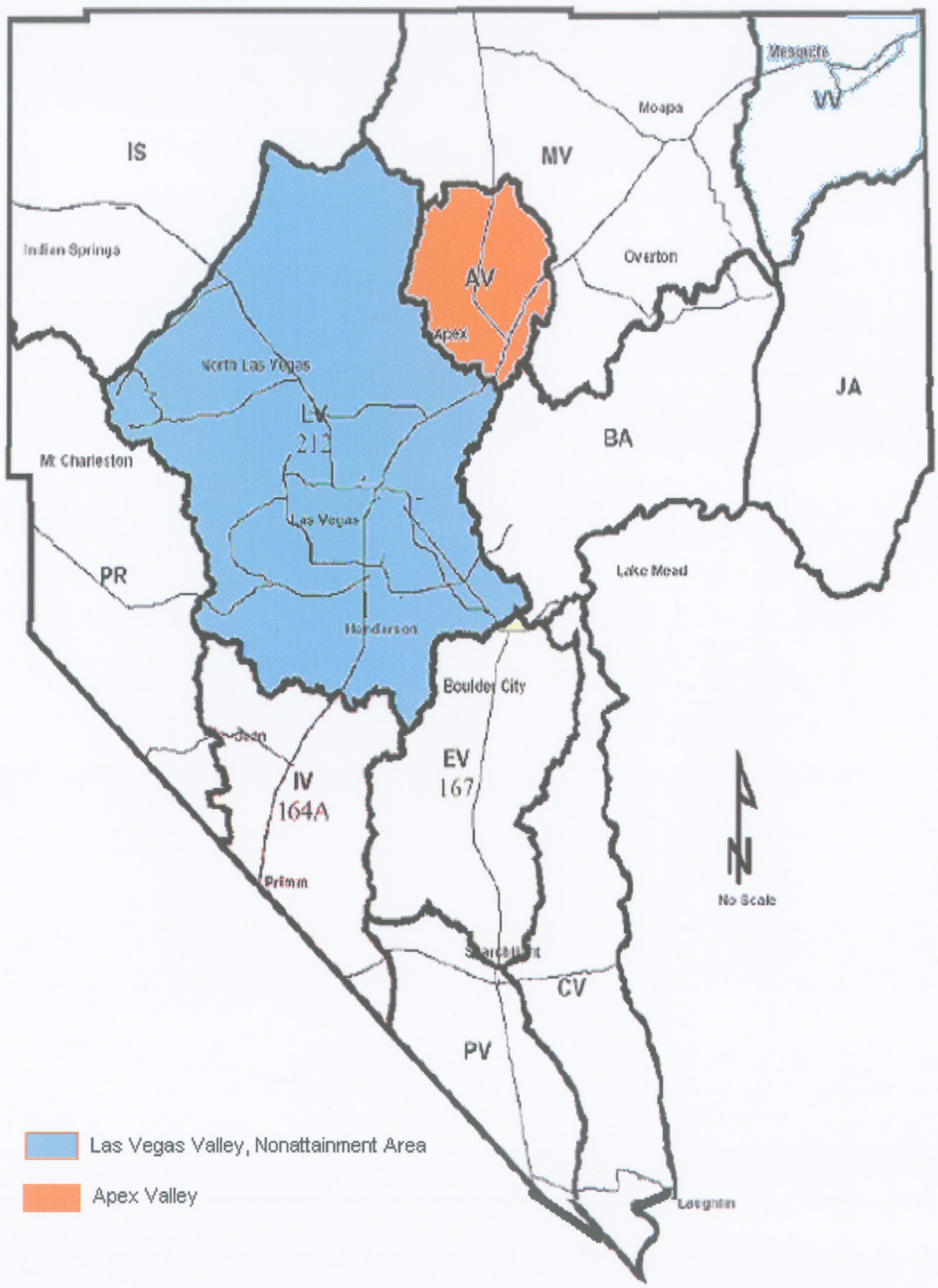


Figure 1 – Clark County NEAP (LV Valley & Apex Valley) Coverage Area

Section 2: PUBLIC EDUCATION AND OUTREACH PROGRAM

Public education and outreach is essential for Clark County citizens to understand what the Natural Events Action Plan (NEAP) means to them, and actions they can take to reduce exposure. The purpose of public outreach program is to inform and educate the public about high-wind events, the associated high PM_{10} levels, and the presence of potential health effects. The elements of the program include:

- Informing the public when air quality in the area is unhealthy;
- Explaining what the public can expect when high-wind events occur;
- Actions the public can take to minimize their exposure; and
- Informing the public of the steps taken to control dust emissions during high wind conditions.

Particulate matter consists of complex mixture of particles suspended in the air we breathe. Particles are present everywhere, but high concentrations present a serious danger to human health. Of greatest concern to public health, are the particles small enough to be inhaled into the deepest parts of the lung. These small coarse particles are known as PM_{10} (particulate matter, less than 10 microns in aerodynamic diameter), and the even smaller particles (fine particles) are known as $PM_{2.5}$ (particulate matter, less than 2.5 microns in aerodynamic diameter). For comparison, a human hair is about 75 microns in diameter. These particles can accumulate in the respiratory system and are associated with numerous health effects. Exposure to coarse particles is primarily associated with the aggravation of respiratory conditions. Fine particles are associated with health effects such as heart and lung disease; increased respiratory symptoms and disease; decreased lung function; and even premature death.

Studies have indicated that the elderly, children and individuals with existing respiratory diseases are at risk of more serious symptoms, including coughing, phlegm, wheezing, shortness of breath, bronchitis, increased asthma attacks, and aggravation of lung or heart disease. Although these sensitive populations are more susceptible to health impacts, it is recommended that everyone take precautions to avoid exposure to poor air quality conditions.

Actions that can be taken to reduce exposure to high concentrations of PM_{10} are listed below. These actions are included in the public outreach materials developed as a part of the NEAP.

For the general public the following actions are recommended.

- If PM_{10} levels are high outdoors, keep windows and doors closed. If needed for comfort, use air conditioners or heating systems on recycle/recirculation mode.
- During extreme dust episodes, limit your time spent outdoors.
- If symptoms of heart or lung disease occur, (including shortness of breath, chest tightness, chest pain, palpitations or unusual fatigue) contact your health care provider.

- Individuals with heart or lung disease should follow their health management plan from their health care provider. Asthmatic individuals should follow a prescribed asthma management plan.
- Individuals should avoid strenuous exercise outdoors during time periods when PM_{10} levels are elevated.

Businesses and the industrial communities are advised to contact an Industrial Hygienist to evaluate their specific needs. In addition, the Medical Advisory Committee (MAC) can assist in providing information to risk management staff concerning health effects and health precautions during high-wind and dust events.

Public Outreach and Education

To minimize public exposure to air pollution, the Clark County Department of Air Quality & Environmental Management developed and implemented an education program to protect the public from the adverse health problems associated with elevated levels of PM_{10}. The first goal is to educate the public about the harmful effects of high concentrations of PM_{10} and actions they can take to reduce their exposure. The second goal is to inform the public when:

- Certain types of natural events may affect the air quality in the area;
- A high-wind event is imminent; and
- Specific actions need to be taken to minimize the health impacts of high-wind events.

To meet these goals, the Department of Air Quality & Environmental Management (DAQEM) implemented a comprehensive program including scheduled local outreach events to provide information to the public specifically during the high-wind season, February through August. The public notifications and education programs include but are not limited to the items listed below.

- **Community Outreach**

As of March 2003, air quality alerts are being issued by DAQEM during the high wind season (see Appendix C for details). Other activities include: 1) expanding the public education effort to include air quality reporting training for local weather news media; and 2) meetings with city, county, and local environmental and health professionals to devise improved ways to educate/reach the community regarding blowing dust and its impacts.

Media press releases for print, local radio and television will be issued in the community as needed. Activities include: 1) newspaper articles highlighting the significant impacts of blowing dust in the Las Vegas Valley (e.g. "Residents Warned of Dangers of Dust," Las Vegas Sun, March 19, 2003. This referenced article also highlighted actions to reduce dust related impacts, and; 2) press releases on the NEAP development and control strategies. Additional newspaper articles and press releases are located in Appendix C.

DAQEM provides particulate matter and NEAP information to the public by providing a Speakers Bureau, web-site information and Public Service Announcements. DAQEM will also continue to build partnerships with local businesses.

- *School and Youth Outreach*

DAQEM established a school and youth outreach program during 2004 that includes classroom and youth group presentations; teacher trainings; and air quality informational packets. The informational packets include a section on high-wind events and steps to be taken to avoid exposure to fugitive dust.

- *Annual Community Events*

DAQEM actively participates in community events (e.g. Clark County Fair, Henderson Parade, and Clark County Health and Wellness Fair) to raise public awareness of the ongoing efforts to reduce blowing dust and its impacts. At these events, DAQEM sets up a booth display that includes the NEAP brochure and the booth is staffed by air quality professionals to answer any questions the public may have.

- *Industrial Education and Outreach*

DAQEM provides dust classes to local contractors and other PM_{10} major sources to familiarize these organizations with DAQEM air quality regulations, the most effective way to reduce PM_{10} emissions, and air pollution health effects. Upon completion of the course, each participant is issued a dust card and Certificate of Completion.

Public Education Efforts Accomplished to Date

Actions taken to date to develop the education program include:

- An informational and health-related brochure has been and will continue to be distributed by DAQEM to sensitive populations as well as to the general public. Distribution of "*Dust Storms and Your Health: What Everyone Should Know*" brochure began in April 2003. It has been used as an educational handout at DAQEM's public outreach and community events. The brochure is available in both English and Spanish versions;

- Distribution of the *"Protecting the Air We Share"* brochure began in March 2003. This brochure provides information on the six criteria pollutants, defines particulate matter, and discusses air quality tips. It has been used as an educational handout at the DAQEM's public outreach and community events;

- An informational and health-related postcard *"Dust Storms and Your Health: What Everyone Should Know"* is used as a mass mailer. The postcard reminds the public of the health effects of high levels of particulate matter, and provides

recommended actions that can be taken to reduce exposure to PM and to reduce air pollution. Mass mailing of these postcards take place in the early spring months to residents and business located in the North and West areas of Clark County. Summer mailers target the Southern and East area residents of Clark County. This postcard mailer is available in both English and Spanish versions;

- DAQEM developed a NEAP Briefing Document entitled *"Particulate Matter Air Pollution from Natural Events"* (See Appendix C). This document outlines PM_{10} problems in Clark County, and is available in both English and Spanish versions. It discusses why PM_{10} is a public health issue and defines the NEAP. It is used as an educational handout at stakeholder meetings and presentations. It was added to the Department's web site under the section concerning the NEAP;

- DAQEM issues High-Wind Air Pollution Notifications in conjunction with the Las Vegas station of the National Weather Service (NWS). These notices are issued when forecasted wind events will reach sustained winds of 25 miles per hour or more and/or frequent gusts of 40 miles per hour or more, twelve to twenty-four hours prior to the event. The notifications are issued in two stages: Advisory and Alert. These stages will begin according to the increasing levels of the severity of the dust (Section 3: Public Notification and Air Quality Advisory Program explains the process in detail); and

- Clark County applied for and received a $200,000 public outreach grant from the State of Nevada. These funds will be used in large part for a public campaign in the Las Vegas and Apex Valleys. The focus of the campaign will be on everyday choices that people can make for a positive air quality impact (i.e. not disturbing the desert) and on ways to avoid exposure to particulate matter during wind events.

- Presentations about the Clark County NEAP were given in the following settings:

    - Working group meetings;
    - A public workshop; and
    - A County Commissioner Board Meeting.

These presentations included information answering these questions: Why PM_{10} is a health concern?; Who is most at risk?; What options are available when the PM_{10} standards are violated?; What dust emission controls are available?; and How the public can help in the NEAP development process. The presentations were tailored for each audience, as appropriate, an example is provided in Appendix C.

Section 3: PUBLIC NOTIFICATION AND AIR QUALITY ADVISORY PROGRAM

The Natural Events Policy (NEP) states that advisories should inform the public that a dust event is imminent, currently taking place, or has reached hazardous levels (PM_{10} concentrations have exceeded the National Ambient Air Quality Standards). The Department of Air Quality & Environmental Management (DAQEM) has developed a program that places equal value on educating the public, forecasting air quality pollution events, and air quality notifications as the best approach to meet the goal of minimizing exposure from high concentrations of PM_{10}.

The Air Quality Notification Program was designed to heighten awareness of health hazards caused by high dust levels, informing susceptible populations, and their caregivers about precautions they should take when PM_{10} levels are high. The Air Quality Notification Program consists of the following elements:

- Episodes of unhealthful PM_{10} levels are likely to occur in Clark County during late winter and early spring;
- Individuals should take precautionary measures when they observe a dust storm in progress;
- Notifying the general public to minimize exposure to high PM_{10} levels, including precautionary measures, such as staying indoors with windows closed and avoiding outdoor exercise, and activities during a dust storm; and
- Individuals who wish to become more acquainted with unhealthful levels of PM_{10} may consult the DAQEM monitoring website at www.ccairquality.org to review current near-real time data and Air Quality Index (AQI) values for PM_{10} concentrations, or the County web page at www.accessclarkcounty.com for PM_{10} information.

The Medical Advisory Committee (MAC)

The Medical Advisory Committee (MAC) comprised of physicians from the Clark County medical community works closely with the Department of Air Quality and Environmental Management (DAQEM) and the Clark County Health District (CCHD) to provide health-related information to the public before, during, and after high-wind events.

The MAC membership may change from time to time; however, MAC membership includes physicians from the fields of pediatrics, pulmonology, family and general medicine, geriatrics, and industrial health. Members of the MAC review and provide input on publications from the DAQEM and CCHD that contain health-related information. MAC members provide medical advice to the DAQEM during high-wind events; provide responses to media inquiries, and presentations to community groups.

When a high-wind event is predicted, the DAQEM and/or County Public Information Office (PIO) alert the MAC. Notifications request the availability of MAC members to

respond to inquiries from the public, media, and any other appropriate inquiry. The MAC serves in an advisory role and will not provide specific diagnosis or advice to individuals.

The MAC will provide public health information for the use of Clark County residents and public and governmental entities.

For detailed information about the MAC, please see Appendix C.

The Public Notification Process

The public notification program employs various actions depending on the concentration of PM_{10}. These actions are intended to mitigate adverse health effects. Each High-Wind Air Quality Notification contains the following elements:

- Forecasted weather information;
- The start and the expected expiration date and time of the high-wind event (DAQEM will terminate the notification when the concentration of pollutants falls below, and is expected to remain below the PM_{10} standard);
- A description of health effects associated with high concentrations of PM_{10};
- Recommendations for actions for sensitive and healthy populations to take to avoid exposure to PM_{10};
- An encouragement to residents to call DAQEM's dust complaint hotline to report excessive amounts of blowing dust;
- An encouragement to residents to visit DAQEM's web site to view near "real-time" monitoring data; and
- Construction site operators and Stationary Sources are directed via Fax and email to inspect their sites and employ the Best Available Control Measures (BACM) to stabilize all disturbed soils on their site to reduce blowing dust.

A forecast of sustained winds of 25 miles per hour or more and/or frequent wind gusts of at least 40 miles per hour or more from the Las Vegas Office of the National Weather Service (NWS), initiates the process to evaluate whether or not to issue a High-Wind Air Quality Notification by DAQEM staff, twelve to twenty-four hours prior to the event. Based on reported weather conditions and monitoring data, Clark County issues notices in two stages: Advisory and Alert. The definitions of the stages are:

- **ADVISORY** – The Las Vegas Office of the National Weather Service (NWS) confirms forecasted wind events of sustained winds of 25 miles per hour or more and or frequent wind gusts of 40 miles per hour or more.

- **ALERT** – Meteorological and ambient monitoring data confirm that the high wind event is happening and PM_{10} levels are elevated.

DAQEM issues notifications with forecasting assistance provided by the Las Vegas Office of the National Weather Service. The forecasting methodology, the public

education brochure, a chart summarizing the public notification responsibilities, and a copy of the forecast and air pollution notice are provided in Appendix C of the NEAP document.

DAQEM uses the following methods to minimize public exposure to PM_{10} in Clark County:

- Identify the people most at risk to exposure of high concentrations of PM_{10};
- Suggest actions to be taken by the public and industry to minimize their exposure and reduce outdoor activity;
- Suggest precautions to take if the exposure cannot be avoided. If outdoor activity cannot be avoided, reduce the level of exertion and duration of exposure; and
- Notify at-risk populations that a high-wind event is imminent or currently taking place.

DAQEM developed a notification system to contact at-risk populations, including:

- Clark County School District;
- Clark County Health District;
- Clark County Parks and Recreation;
- Local Municipalities (cities of Henderson, Las Vegas, North Las Vegas, and Boulder City); and
- Local media (radio and television stations).

Section 4: BEST AVAILABLE CONTROL MEASURES (BACM) FOR REDUCING WINDBLOWN DUST FROM MANMADE SOURCES AND COMPLIANCE ACTIVITY IN CLARK COUNTY

Best Available Control Measure (BAQM) Discussion

Sources of Windblown Dust in the Las Vegas and Apex Valleys

Windblown dust in the NEAP planning area occurs both from natural and man-made sources. While dust is common in undisturbed areas throughout the west, it becomes much more prevalent where natural soils have been disturbed by human activities. This is because natural soils have a tendency to form a mineral and organic crust (Desert Pavement) that is resistant to erosion by wind. Human activities can remove or break this crust, allowing dust to become airborne. Even sparse desert vegetation acts somewhat like a windbreak providing some protection to the soil surface. When human activities remove vegetation, the soil is susceptible to erosion, and as a result, airborne dust is produced. While we can do little to decrease windblown dust from the open desert during periods of high wind, there are varieties of things that can be done to decrease dust caused by human activities. Airborne dust from human activity tends to be concentrated close to populated areas because that is where the most disturbed native areas are located. The majority of the dust inhaled by the community members is generated locally rather than from the surrounding desert.

When the NEAP planning area experiences high concentrations of dust during high winds, most of the dust in the air comes from exposed areas of loose soil. Several sources of PM_{10} are commonly encountered in urban and rural areas in the western United States and Clark County. The following is a list of major sources, but not necessarily in the order of significance:

- Disturbed vacant land areas during high winds;
- Soil disturbance during construction activities;
- Disturbed areas at construction sites during high winds;
- Unpaved roads;
- Unpaved parking lots;
- Material handling and storage yards;
- Vehicle equipment storage yards;
- Trackout of mud and dirt onto paved roads;
- Unpaved shoulders of paved roads; and
- Undisturbed desert areas overwhelmed by high winds.

Certain other "point" sources such as sand and gravel operations and asphalt concrete manufacturing may contribute relatively small amounts of airborne dust in the NEAP planning area.

Under the federal Clean Air Act, the primary responsibility for air pollution control lies with state and local governments. One of the actions required to protect public health is application of Best Available Control Measures (BACM). BACM for dust control are designed to reduce windblown dust from human activities. The PM_{10} State Implementation Plan (SIP) for the Las Vegas Valley, submitted to the U.S. EPA in 2001, identified BACM for a variety of human activities that generate dust. A full description of what constitutes BACM is addressed in the PM_{10} SIP and Clark County's Air Quality Regulations (AQRs). Clark County's AQRs are presented in Appendix D of this document.

BACM Definition

BACM are methods that can be used to reduce or eliminate windblown dust in areas where natural soils have been disturbed and are more prone to erosion by the wind. BACM is defined as the *"Maximum Degree of Emission Reduction Feasible for a Significant Source Category"(59 FR 42010, August 16, 1994).* BACM is determined on a case-by-case basis, taking into account technical feasibility; energy, environmental, and economic impacts; and other costs. The process of determining BACM takes into account what the most common sources of manmade dust within a community are, when they occur, what measures can be used to reduce dust, and the relative cost of such measures to their effectiveness in controlling dust.

Most BACM are physical methods of controlling dust from developed or undeveloped areas within communities. Many methods attempt to return native soils to a more protected state by replacing natural crusts with artificial covers. However, they also include controlling and/or reducing airborne dust by practices that minimize the area of disturbed soil. In addition, the length of time the soil remains exposed to hazards of wind and the timing of the disturbance have a bearing on the need for a particular BACM. Considering all these factors, it is possible to develop best management practices for specific land uses.

Selecting and Implementing BACM

Part of the BACM requirement set forth in the PM_{10} State Implementation Plan (SIP) is the need to control a variety of sources of windblown dust. It is not the intent of the NEAP to develop or apply new types of BACM. This NEAP discusses adopted BACM and their implementation during high-wind events. This section of the plan describes the most common sources of anthropogenic dust within communities and the BACM that is employed to reduce and minimize dust during windy conditions. Clark County BACM are applicable to regulated sources seven days a week, 24-hours a day. Some of the physical measures required as part of BACM are set forth below.

Chemical Dust Suppressants and Soil Stabilizers

Chemical dust suppressants and soil stabilizers can be useful in reducing the tendency of fine-grained and loose soils to produce large amounts of windblown dust. They bind fine soil particles into larger particles that are less easily blown into the air; they retain moisture so that soils become more coherent; and they can form crusts that mimic and exceed the wind resistance of natural soil crusts.

Water has long been used for the control of dust in arid regions. For construction activities during active soil disturbance, water is the primary means of dust control. Under current drought conditions, water is an increasingly scarce and precious commodity. However, water required for dust control is only a portion of the water required for construction activities. Water use restrictions imposed by the 2002 Southern Nevada Water Authority (SNWA) *Drought Plan* and the Las Vegas Valley Water District Service Rules (August 2003) do not apply to construction activities and dust suppression (Section 12 Conservation and Drought, Subsection 12.2 Drought Conditions and 14.4 Water Waste Prohibited Section B. Exemptions – Public Health and Welfare – any activity where the use of water is the most appropriate and practical method to abate a health and safety hazard…Las Vegas Valley Water District Service Rules 8-03). Common sense approaches will be employed as part of the NEAP process to inform and educate the public, the construction industry, and other water users in the community on the smart use of water resources.

Water-soluble surfactants may be added to water to decrease the amount of water needed for dust control by reducing the initial resistance of dry soils to absorbing water. Surfactants are relatively inexpensive.

Chemical dust suppressants are often added to water, which acts to disperse the chemicals, after which the water evaporates. The chemicals coat the particle surfaces and bind the soil particles together to form a durable crust. Most products are designed for moderately traveled unpaved roads; and may also be used to stabilize shoulders of paved roads, disturbed vacant lands, and temporarily stabilize construction sites.

When used to stabilize heavily trafficked areas, these products typically require ground preparation prior to application, as well as reapplication one to four times a year to remain effective. The crusting or binding of soil particles does not need to be nearly as strong for areas that will not be trafficked by vehicles, because the binding needs only to withstand the force of the wind. Therefore, stabilization of untrafficked areas requires much less of the chemical, less ground preparation, and less frequent reapplication.

For greatest effectiveness and lowest cost, it's important to follow the manufacturer's instructions for mixing and applying these chemicals, which will likely depend on the intended use of the area. Some of these chemicals tend to suppress plant establishment and growth, and some may affect water quality if treated soils are allowed to wash into drainages.

Examples of BACM for specific land uses

Airborne dust is generated through a variety of activities that constitute the daily operations of businesses. The following list shows alternative measures for dust control for specific land uses. This list of BACM is by no means all-inclusive, and represents only some of the options available to the community. For the most comprehensive list of BACM, refer to the SIP and AQRs – Section 90 Series regulations.

BACM for Paved Roads

While paving roads is an excellent way to reduce dust, road shoulders and dirt that is tracked, washed, or blown onto paved surfaces can continue to be re-entrained into the air by passing vehicles. Some of the methods to control this dust source include:

- Road shoulder stabilization by paving, covering with gravel, or using chemical dust suppressants applied in amounts and rates recommended by the manufacturer and maintained as recommended by the manufacturer;
- Reduction of dirt tracked from unpaved side roads, industrial sites and construction sites, using paved or gravel entry aprons and/or devices such as steel grates/wheel shakers, that are capable of knocking mud and bulk dirt off vehicle tires;
- Use of PM_{10} efficient sweepers to clean paved roads;
- Use of vacuum crack seal equipment;
- Prevention of deposition of material onto paved roads by requiring truck covers, and a maximum of freeboard between the top of the truck bed and the material being transported;
- Prevention of the deposition of material onto roads by providing adequate storm water drainage;
- Cleanup of material spills and erosion-caused deposits; and
- Routine sweeping and cleaning of paved roads.

BACM for Unpaved Roads

Depending on the soil properties, heavily used unpaved roads can develop a loose, powdery surface that generates significant amounts of windblown dust even during periods of moderate wind speed. Methods to control dust from unpaved roads include:

- Prohibition of new unpaved roads in public thoroughfares;
- Traffic reduction and speed control for unpaved roads;
- Road stabilization for unpaved roads and alleys using chemical dust suppressants applied and maintained in amounts and rates recommended by the manufacturer;
- Prioritization of the paving of unpaved roads based on the criteria that includes the amount of traffic, production of dust, and vicinity of people, schools, etc. {Roads with 150 Average Daily Trips (ADT), will have the priority for paving}; and

- Adequate storm water drainage to reduce soil from unpaved roads from being washed or tracked onto paved roads.

Soil Particulate Emission Potential (PEP)

The suitability of control measures available to adequately stabilize disturbed vacant land and construction areas highly depends on the types of soil the control measure will be applied to. For construction site operators and compliance officers to make decisions with respect to control measures to be applied prior to wind events or during wind events it is imperative that it is understood what types of soils they are dealing with and what characteristics the soil has. The following paragraphs and figures give a general description and guide to the Clark County soils, to allow for informed decisions to be made by construction site operators and compliance officers.

Soil types are classified into five categories (high, moderately high, moderately low, low, and slight) based on their particulate emission potential (PEP) during active soil disturbing activities such as grading and trenching. The fifth category, "slight", is created solely to identify areas of bedrock outcrops. PEP is determined by soil silt content (measured by the soil percentage that will pass through a 200-mesh sieve) and optimum moisture content (measured by the percent of moisture necessary to compact soils).

A graph, which plots measured optimum moisture content vs. silt content for Las Vegas Valley soils, is used to classify PEP and is included in Figure 2. If the optimum moisture content or silt content is not known for a specific project location, reference maps of Clark County and the Las Vegas Valley, delineating the five soil type categories are provided in Figures 3 and 4, respectively. Soil type category maps are to be used as a guideline. The actual measured silt content and moisture content for maximum compaction shall take precedence over any mapped soil type categories.

Additional information may be found in the Construction Activities Dust Control Handbook in Appendix D of this NEAP. For projects of 50 acres or larger, applicants for construction activity dust control permits are required to provide site specific soils tests as part of the permit application. The PEP is used to determine which Best Management Practice (BMP) is applicable for each construction activity conducted at the site.

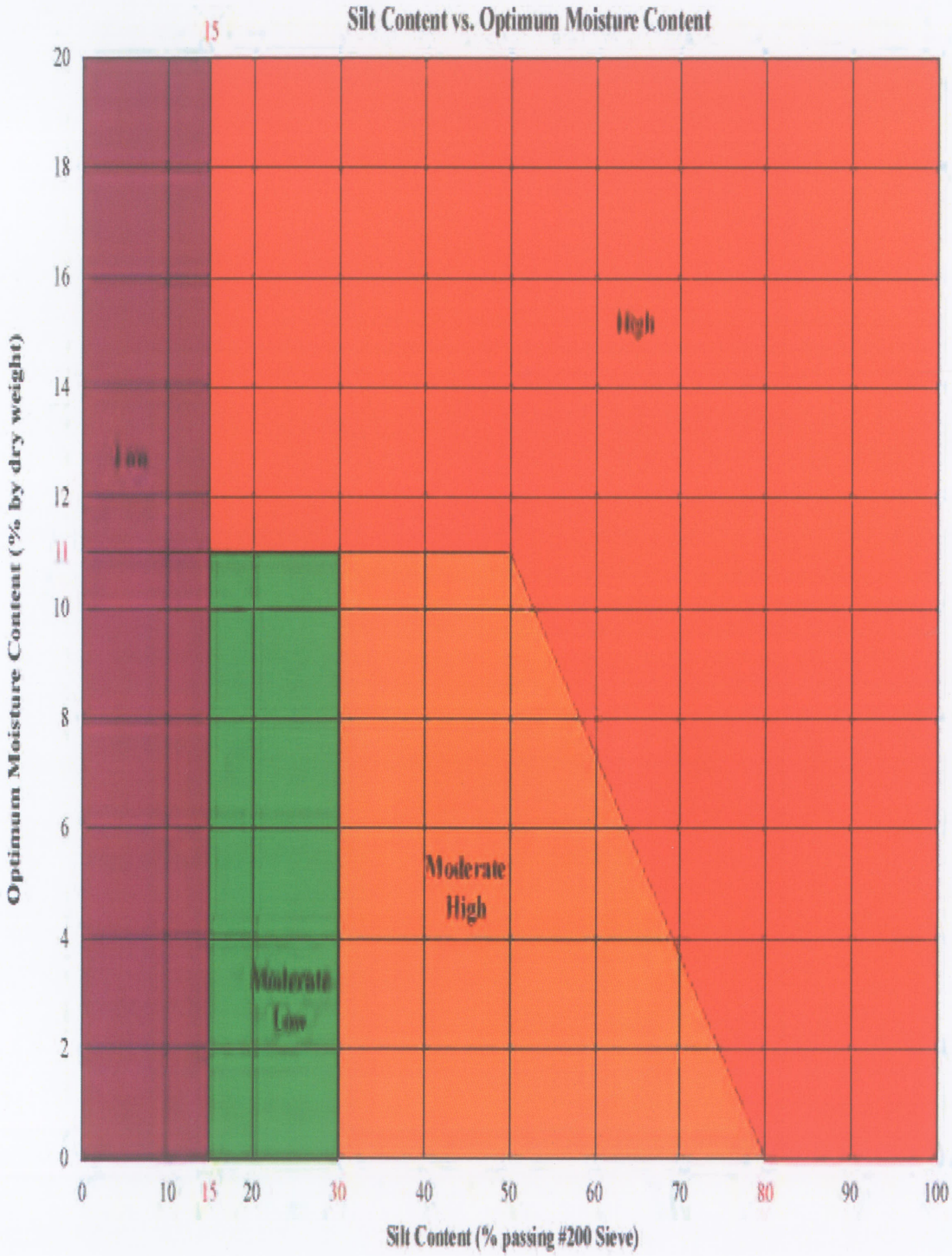


Figure 2: Silt Content vs. Optimum Moisture Content Graph

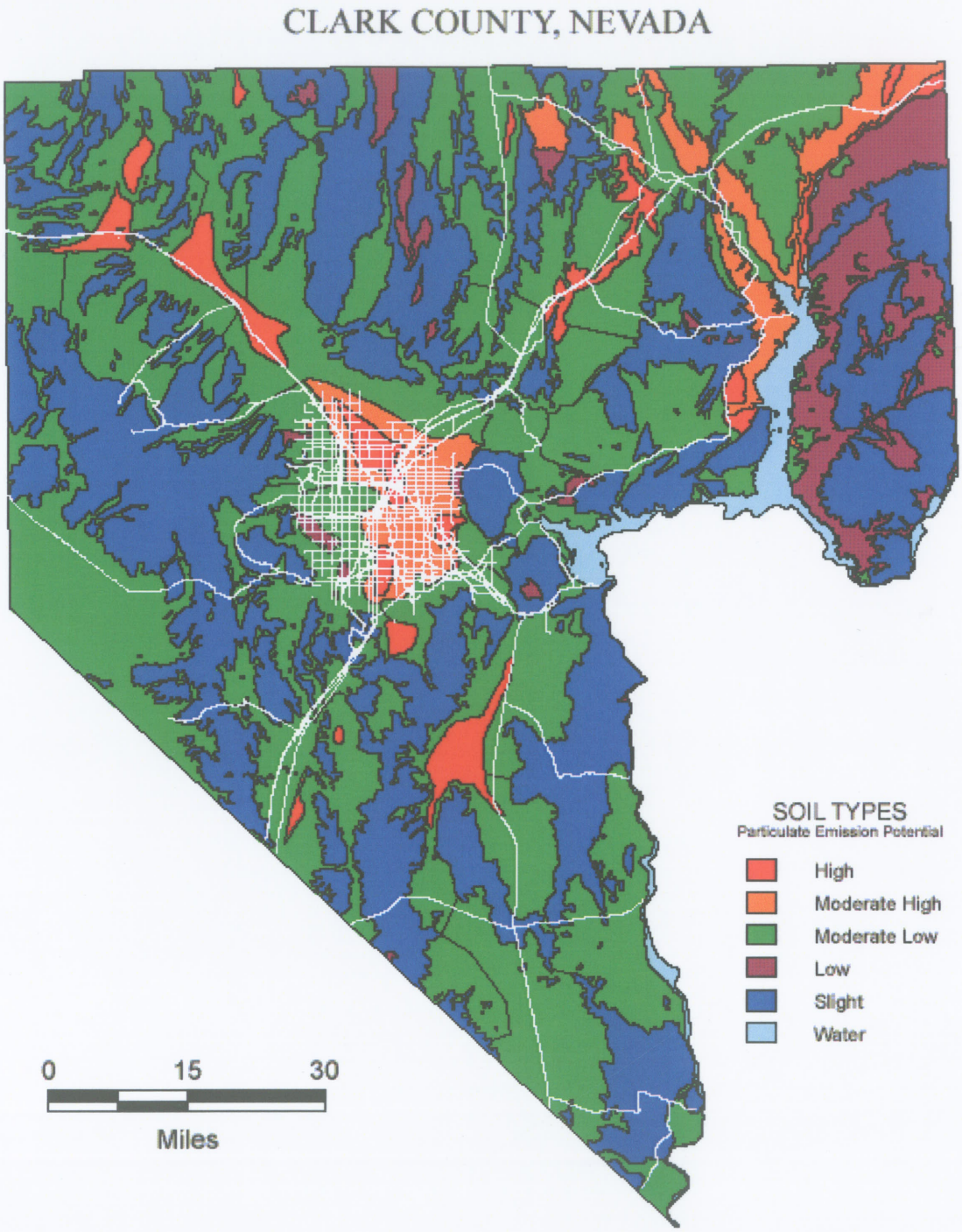


Figure 3: County Soil Types Map

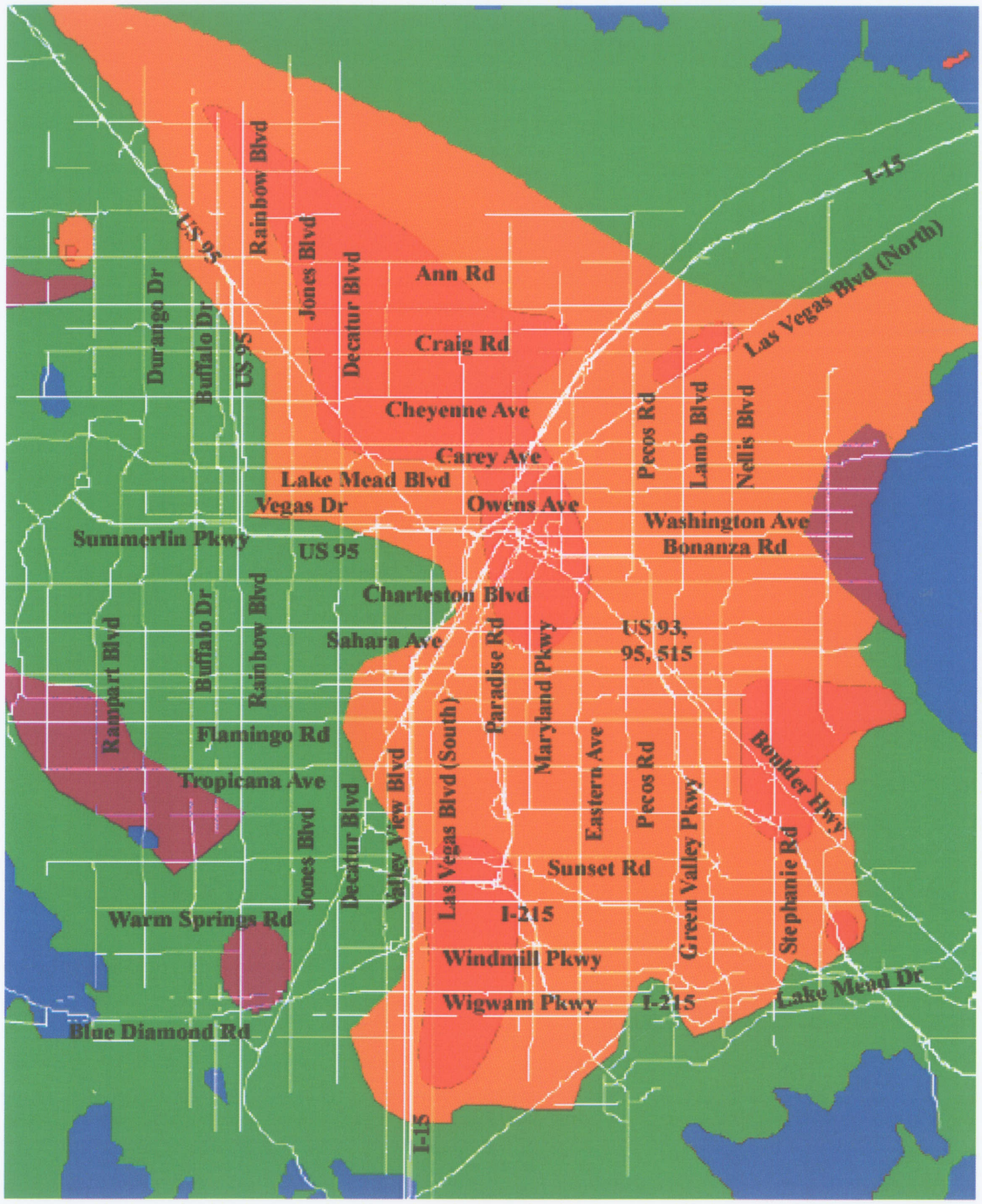


Figure 4: Valley Soils Type Map – Las Vegas Valley

BACM for Construction Activities

Construction sites, both active and inactive, can be sources for significant amounts of windblown dust. This is due to the presence of large areas of bladed ground, stockpiles, trucks hauling bulk materials, and heavy equipment traffic. Best Management Practices (BMPs) for construction sites include:

- Strengthen requirements of existing fugitive dust control rules;
- Provide for better enforcement of fugitive dust control rules;
- Mitigation bond requirement to insure implementation of dust control plan;
- Dust control plans for construction/land clearing and demolition;
- Dust control monitor required for construction sites having more than 50 acres of actively disturbed area;
- Track out control;
- Stabilization of staging areas, equipment storage, and material storage areas;
- Use of surfactants or tackifiers;
- High-wind operating restrictions;
- Phasing land development;
- Stabilized disturbed inactive surfaces;
- Dust controls for blasting of soil and rock;
- Dust controls for abrasive blasting;
- Dust controls for crushing;
- Dust controls for landscaping;
- Dust controls for paving/sub grade preparation;
- Dust controls for screening;
- Dust controls for construction traffic;
- Dust controls for trenching;
- Dust controls for truck loading;
- Dust controls for stockpiles;
- Require visible emission limits not to exceed 20 percent opacity;
- Limit visible emissions to 100 feet;
- Prevent visible emissions from crossing property line;
- Prevent tracking of dirt from construction sites by installing curbs, or stabilizing road shoulders;
- Use devices designed to clean mud and bulk dirt from tires such as steel grates, wheel shakers, or on-site wheel washes;
- Schedule regular vacuum street cleaning to remove accumulated dirt on roadways;
- For trucks hauling bulk materials to or from the site, fully cover and secure cargo loads and prevent leakage from truck beds, sideboards, tailgates, or bottom dump gates;
- Dust suppression using water, particularly when high winds are forecast or are occurring;
- Dust suppression using chemical dust suppressants applied and maintained in amounts and rates recommended by the manufacturer;

- Install permanent perimeter or interior fencing prior to other construction activities; (as with temporary windbreaks, this control measure is most effective on smaller sites);
- Contain all stockpiled bulk materials in three sided bunkers that are at least two feet higher than the stockpiled materials, or cover stockpiled materials;
- Water stockpiled materials that are susceptible to blowing, particularly when high winds are forecast or are occurring;
- Store stockpiled materials, if susceptible to blowing, away from downwind site boundaries;
- Reduce on-site traffic speeds; and
- Prevent storm water drainage from leaving the site.

BACM for Vacant Land, Disturbed Areas, and Parking Areas around Business, School, Residential, and Other Sites

Land that has been bladed for construction but left vacant is often highly susceptible to the generation of windblown dust. Additionally, business parks and residential areas that are newly constructed often have tracts of land that have been disturbed, removing native soils and vegetation. Methods for dust control at these sites include:

- Limit off-road use of recreational vehicles on open land;
- Vacant land stabilization;
- Construct windbreaks;
- Control weed abatement methods;
- Prohibit new unpaved parking lots;
- Stabilize surface of unpaved parking lots;
- Dust abatement and management plans for large tracts of governmentally owned lands;
- Pave parking areas or treat with a dust suppression chemical applied and maintained in amounts and rates recommended by the manufacturer. Otherwise, restrict parking in unpaved areas;
- Use grasses that require infrequent watering for school playgrounds; and
- Treat storage yards with a dust suppression chemical applied and maintained in amounts and rates recommended by the manufacturer, or with gravel.

Compliance Activity

Introduction

Reducing dust emissions from controllable sources is a requirement of the NEAP policy. The Department of Air Quality & Environmental Management (DAQEM) employs a four-part approach to achieving measurable reductions in emissions. The four parts of this approach are:

1. Education of site supervisors, dust monitors and water truck operators.
2. Issuance of advisories to the regulated community.

3. Concentrated enforcement and compliance activities.
4. Abatement of violating sites.

Education of site supervisors, dust monitors and water truck operators

The Clark County Air Quality Regulations (AQRs) require sites fifty (50) acres or more of disturbed soil to hire an on site person to monitor the emissions of dust from the site, commonly known as a "dust monitor". Dust monitors are required to take a "Dust Monitor Class" given by the DAQEM. The class teaches the dust monitors "Best Management Practices" also referred to as BMPs. BMPs are methods to reduce dust emissions from construction sites. The class also teaches the dust monitors about the AQRs, methods, and technologies to reduce dust emissions. Site supervisors are required to take a "Dust Class" also given by the DAQEM, which teaches site personnel and water truck operators about BMPs and the applicable AQRs.

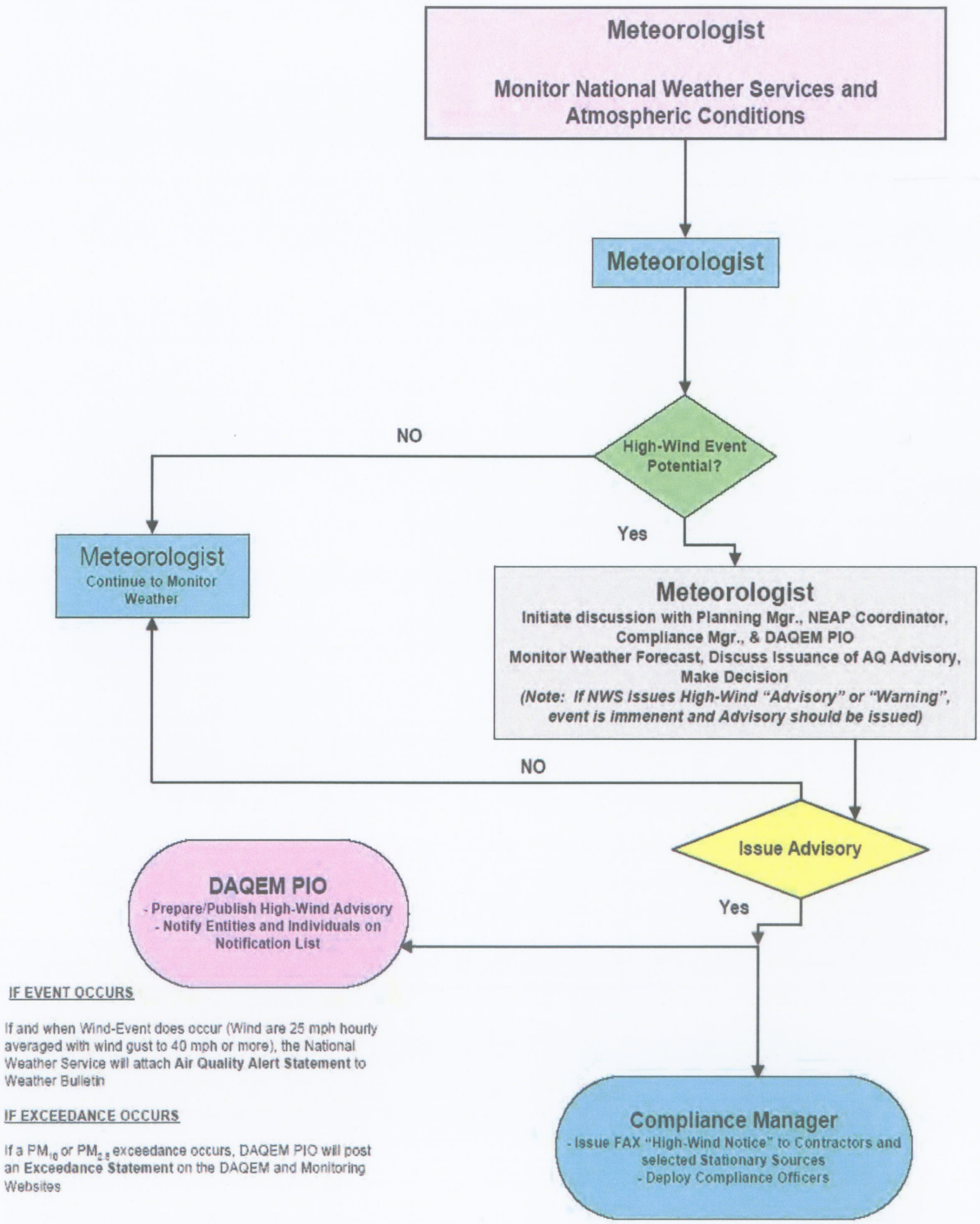
Issuance of advisories to the regulated community

Assigned staff monitor the National Weather Service (NWS) forecasts for predicted wind speeds (see Figure 5). If predicted wind speeds reach the threshold of sustained winds of 25 miles per hour or more, and/or wind gusts of 40 miles per hour or more, the process of issuing an advisory to the regulated community begins. The forecast is verified with the NWS to ascertain the likelihood of such an event occurring, the last day of measurable rainfall is verified, and a decision is made by assigned staff whether or not to issue an advisory to the regulated community. This process is concurrent with the process for issuing an air quality advisory to the public. If all the criteria are met, an advisory is issued to the regulated community via fax, telephone and email. Depending upon the certainty of the NWS forecast, advisories are issued 12 to 24 hours in advance of the high wind event, allowing the regulated community time to take the appropriate actions.

The advisory contains:

- The weather forecast;
- Expiration time of the advisory that is concurrent with NWS forecast (to the extent possible);
- Notice to the regulated community that compliance officers are out in the field to focus on potential sources of wind-blown PM_{10};
- Advice to the regulated community to employ BMPs to mitigate the emission of fugitive dust; and
- Notice to the regulated community of the penalties possible for a violation.

Figure 5 - NEAP HIGH-WIND AIR QUALITY NOTICE AND RESPONSE



Concentrated enforcement and compliance activities

During the event, compliance officers are dispatched to the field to survey for violating sites. The areas of concentration of enforcement activities are determined from historical patterns, monitoring data, and complaints. Violators, at the discretion of the officer, are given a Corrective Action Order (CAO) which may lead to a Notice of Violation (NOV), and are ordered to employ BMPs to correct the violation. If the violation is especially egregious, the officer can recommend to their supervisor to issue an NOV instead of a CAO. The violator will receive the NOV through the DAQEM violations process procedure. In either case, the violators are ordered to employ BMPs to correct the violation.

Abatement of violating sites

The AQRs permit Clark County to require the abatement of violating sites with the use of a contracted water truck service (See Appendix E). This abatement may be used on sites when they are vacant or the owner/operator either cannot or refuses to abate the violation. The compliance officer obtains permission from their supervisor to initiate the abatement and the owner/operator is billed for the abatement. For more information, see Appendix E.

Section 5: CONTENTS OF JUSTIFICATION PACKAGES FOR EXEMPTION

Clark County projected attainment of the PM_{10} NAAQS in the June 2001 PM_{10} State Implementation Plan by the end of 2006. PM_{10} exceedances caused by high-wind events count against meeting attainment, unless those events qualify under the U.S. EPA Natural Events Policy (NEP). Clark County must justify discounting those PM_{10} exceedances by documenting that the exceedances occur due to overwhelmed BACM and contributions from native desert disturbed by high winds. It is the responsibility of the agency to demonstrate a clear causal relationship between the PM_{10} exceedances and the high-wind event. Qualifying supporting documentation includes:

- Monitoring data;
- Filter analysis;
- Meteorological data (Wind speed, wind direction, precipitation);
- Modeling and receptor analysis;
- Videos and/or photographs of the event;
- Maps of the areas affected by the event;
- News accounts of the event; and
- Documentation of BACM being in effect for sources (anthropogenic) in the event area (compliance actions).

Background on Requirement of Justification

Figure 6, is the map of air quality monitoring sites located within the Las Vegas Valley. Clark County DAQEM operates a total of twenty-two (22) Air Quality Monitoring Sites within the Air Quality Monitoring Network. The Monitor Sites outside the Las Vegas Valley are:

1. The Apex site, located in Apex, Nevada in the Apex Valley, Hydrographic Area 216/217;
2. The Mesquite site, located in Mesquite, Nevada, in the Virgin River Valley, Hydrographic Area 222;
3. The Boulder City site, located in Boulder City, Nevada, in the El Dorado Valley, Hydrographic Area 167;
4. The Jean site, located in Jean, Nevada, in the Ivanpah Valley, Hydrographic Area 164A; and
5. The Searchlight site, located in Searchlight, Nevada, in the Paiute Valley, Hydrographic Area 214.

The remaining seventeen (17) sites are within the Las Vegas Valley, Hydrographic Area 212. The data from these monitoring sites is used to document a high-wind event. During the analysis segment of the justification submittal, the monitoring data for the day before, the day of, and the day after the event, including site meteorology (which includes the concurrence of McCarran International Airport meteorology data) is evaluated to compare and contrast how increased wind conditions have affected the monitoring

values. This analysis is conducted for each monitoring site that has exceeded the 24-hour National Ambient Air Quality Standard (NAAQS) for PM_{10} during the time frame of the high-wind event. In addition, these data are compared with the National Weather Service (NWS) meteorology data for quality assurance, quality control purposes.

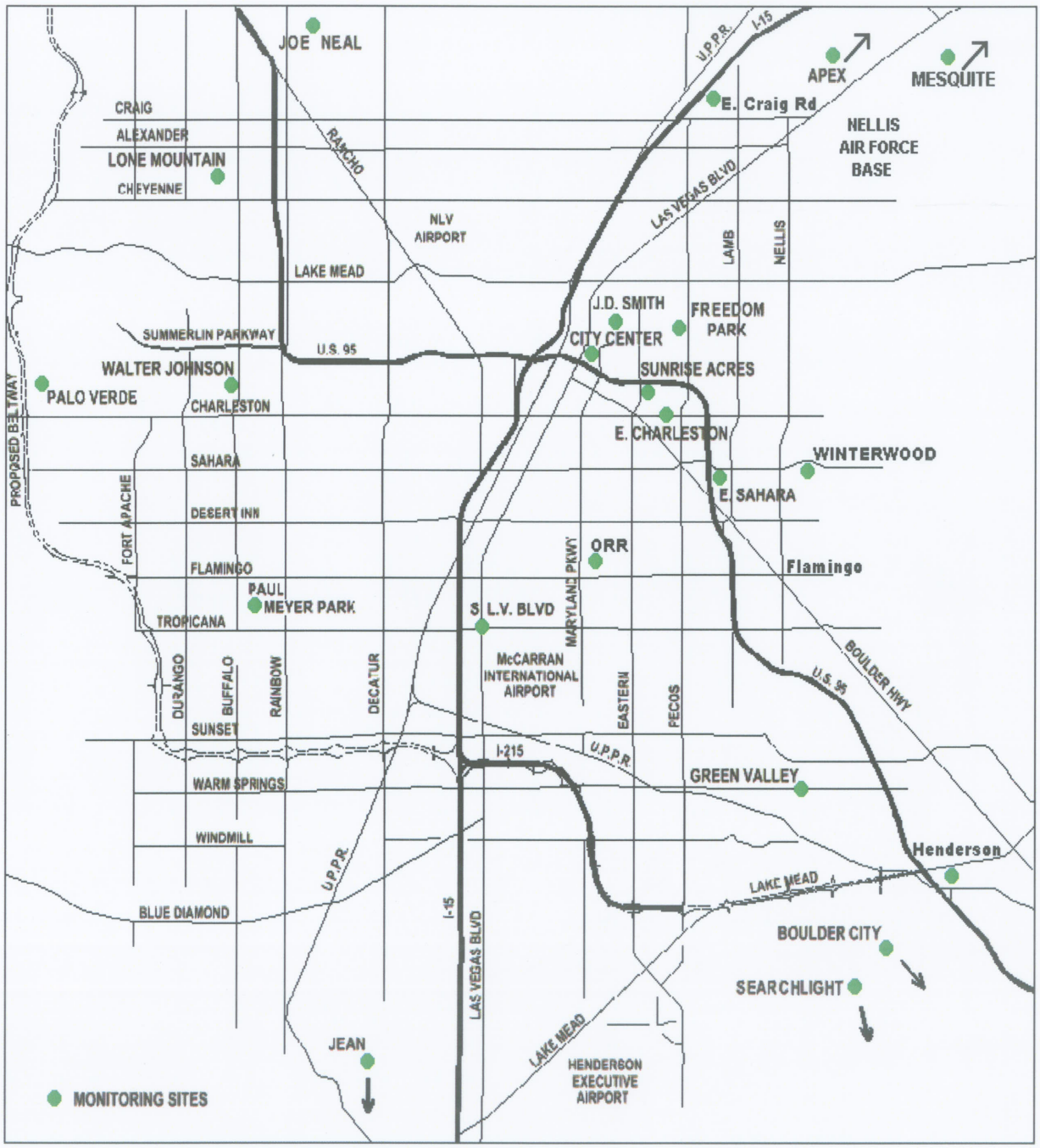


Figure 6: Clark County Air Quality Monitoring Sites

Compliance activity during the event is documented in the justification packages with the input of the compliance officers that were dispatched to the field to survey for violating sites. The areas of concentration of enforcement activities are determined from historical patterns, monitoring data, and complaints. Violators, at the discretion of the officer, are given a Corrective Action Order (CAO) which may lead to a Notice of Violation (NOV), and are ordered to employ BMPs to correct the violation. This process is part of the justification analysis to determine if BACM is being enforced. The Compliance Officers assist the Planning and Projects Staff in the documentation of unusual events that may occur during the high-wind event with digital photography (both still photography and video). These photos are included with the justification submittal to show visible proof of the high-wind event as it was occurring, the aftermath depicting property damage, or any other unusual situation photo (trees leaning at sharp degree, etc.). Each photo or video shall have a description of the situation that was occurring and show evidence of BAQM in place, or the lack thereof.

The news media plays a large role in the documentation of the event as it is occurring. News releases that warn of a high-wind event that is forecasted or occurring are coordinated between the County Public Information staff and the news networks and television stations. Newspaper articles and other news accounts of the event are included with the justification submittal.

Justification Packages Prepared to Date

On March 1, March 13, April 15, April 17, 2002, October 29, 2003, October 30, 2003, April 28, 2004 and May 11, 2004 the PM_{10} monitors throughout the county recorded exceedances of the primary, 24-hour NAAQS for PM_{10}. The PM_{10} exceedance concentrations ranged from just above the standard to 535 $\mu g/m^3$. Unusually high wind speeds and peak gust of 59 mph were recorded on these days with little or no precipitation. The circumstances surrounding the Clark County exceedances has provided adequate reason for the DAQEM to believe the high-wind events and blowing dust have caused exceedances of the NAAQS that otherwise would not have occurred.

As required by the U.S. EPA Natural Events Policy (NEP), each of the exceedances have been flagged by the Department of Air Quality & Environmental Management's (DAQEM) Air Quality Monitoring Section in the Aerometric Information Retrieval System (AIRS). The flags appear after the recorded values in AIRS with the descriptor code "A" for high winds. According to U.S. EPA guidance, the type and amount of documentation provided for each event should be sufficient to demonstrate that the high-wind event occurred, and that it impacted a particular monitoring site in such a way as to cause the PM_{10} concentrations measured.

An example of the documentation (*October 29, 2003 – High-Wind Event Justification Package*) forwarded to the U.S. EPA Region IX for an exceedance day can be found in Appendix F of the NEAP.

Effective March 16, 2005, DAQEM will post High-Wind Justification Submittal Packages (Packages) on the department website for thirty-days (30) and make printed

copies available for public review at the department. DAQEM will send out public notice to stakeholder groups solicting comments on the packages prior to submittal of the packages to U.S. EPA. DAQEM will accept written public comments on the packages during the public comment period and will forward all public comments with any applicable DAQEM responses to the U.S. EPA, Region IX for review, and determination.

Section 6: STAKEHOLDER AGREEMENTS

Stakeholder Involvement

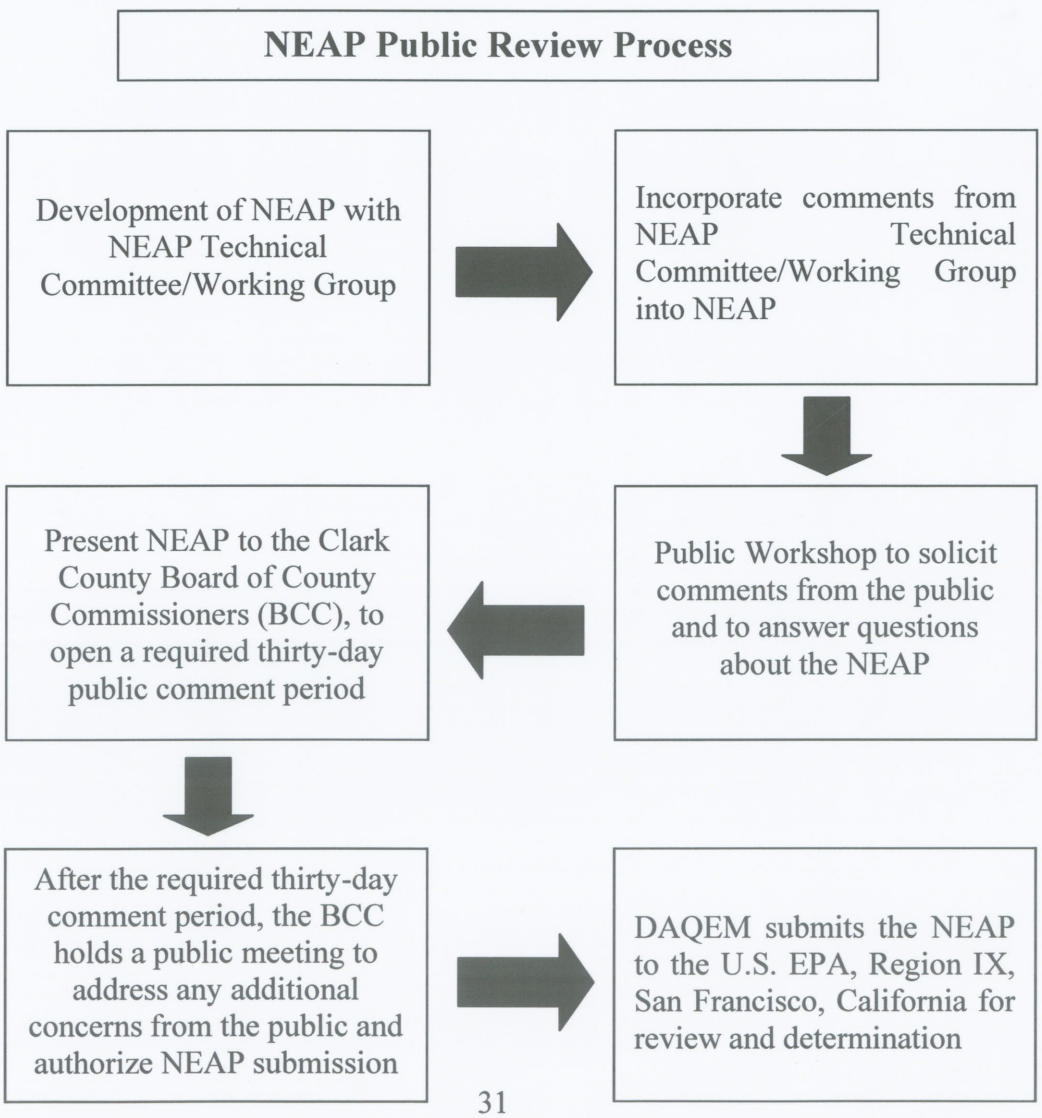
The U.S. EPA's NEP development guidance states that the NEAP should be developed by the agency in conjunction with the stakeholders affected by the Plan. The Department of Air Quality & Environmental Management (DAQEM) worked with stakeholders. This group consists of DAQEM personnel; representatives of the local municipalities; Clark County Health District; Clark County School District Educators; Southern Nevada Home Builders Association; Environmental Groups; National Weather Service Las Vegas Office; and the Conservation District of Southern Nevada. Numerous meetings and telephone conversations occurred with stakeholders, and the final agreement reflects support of control measures and public education efforts included as part of the NEAP. The municipalities mutually agreed to support this effort and will assist in the education efforts to support the NEAP requirements, as requested. The Sierra Club, Southern Nevada Chapter generally disagrees with the NEP, but does support the Public Education and Outreach Program Section (Section 2), and the Public Notification and Air Quality Advisory Program Section (Section 3), of the NEAP document.

Section 7: PUBLIC REVIEW AND COMMENTS

Public Review Process for NEAP Development

Public Review

The Department of Air Quality and Environmental Management (DAQEM) developed this NEAP with the assistance of a stakeholder committee (NEAP Technical Committee/Working Group). DAQEM incorporated the comments and suggestions from the stakeholder committee. DAQEM conducted a public workshop to solicit comments, and answer questions about the NEAP. After the public workshop, DAQEM presented the NEAP to the Clark County Board of County Commissioners (BCC), at a regular meeting, where the BCC accepted the plan and opened the required thirty-day public comment period. The required thirty-day comment period ensured ample time for review and comment (see Appendix G for notifications, etc.). At the end of a required thirty-day comment period, the BCC held a public meeting to address any additional concerns from the public. The BCC authorized the DAQEM to finalize the NEAP, and submit the NEAP to the U.S. EPA for review and determination.



NEAP Technical Committee/Working Group

The stakeholder committee assisted in the Quality Control and Quality Assurance (QA/QC) phase of the development and public review of this NEAP. The stakeholder committee consisted of representatives from the DAQEM, Clark County Health District, Clark County School District, Southern Nevada Home Builders Association, Environmental Groups, National Weather Service, Las Vegas Office and the Conservation District of Southern Nevada, the cities of Henderson, North Las Vegas, and Las Vegas. Individual participants may change from time to time, as necessary, by written request of the appointing authority of the group, organization, or municipality.

Section 8: PERIODIC EVALUATION (Due every 5-years)

Periodic Evaluation

U.S. EPA's Natural Events Policy guidance requires the Department of Air Quality & Environmental Management (DAQEM) to periodically reevaluate the conditions causing violations of the PM_{10} NAAQS in Clark County; status of implementation of the NEAP; and adequacy of the actions being implemented.

The agency will formally evaluate the NEAP for Clark County at a minimum of every five (5) years and make appropriate changes to the plan accordingly. The first formal evaluation is scheduled for early 2010. In addition to the formal review, an annual review will occur during the first six months of each calendar year, prior to the new fiscal year. This review will allow for any additional program additions requiring funding that were not budgeted for in the previous year's budget.

As part of the public review, formal review and annual evaluation of the NEAP document, the same entities that serve on the existing NEAP Technical Committee/Working Group will be asked to serve on the panel to evaluate the effectiveness and the update requirements of the Clark County NEAP as appropriate.

Agenda Item #6

PM-10 Clean Data Policy

Criteria

- Area must be attaining the 24-hour PM-10 standard based on the 3 most recent years of complete, certified, and QA'd monitoring data
- EPA must have made a determination that the area has attained the standard (i.e, Clean Data Finding)

Requirements

- Control measures at appropriate level of control continue to be implemented (i.e., BACM) – needed for maintenance plan
- Nonattainment status is unchanged. Area still has to submit a redesignation request and maintenance plan in order to be formally redesignated to attainment
- New Source Review program continues to be implemented
- Emissions inventory has to be prepared as required
- Commitment to continue operating monitoring network per 40 CFR 58
- Continue to do transportation conformity using existing budgets or the interim test, as applicable [1]

CAA Requirements Suspended by CDP [2]

- No attainment demonstration and no additional BACM control measures
- No RFP demonstration
- No contingency measures
- No longer a 5% requirement for additional reductions under 189(d)

1. EPA did propose changes to the conformity rule last year, that, if finalized, would allow areas to set motor vehicle emission budgets when EPA makes a clean data finding. For this to happen, the area would have to request that EPA set a motor vehicle emission budget using emissions from the most recent year of clean data for that pollutant. We anticipate this change moving forward in August of 2011.

2. These requirements are suspended with the expectation that the area will be redesignated to attainment. If the area violates the standard, a nonattainment SIP is required that addresses all of the above requirements.

http://www.gpo.gov/fdsys/pkg/FR-2011-02-28/pdf/2011-4376.pdf

Agenda Item #8

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

March 14, 2011

Ms. Lindy Bauer
Maricopa Association of Governments
302 N. 1st Avenue
Suite 300
Phoenix, Arizona 85007

Regarding: Request for Supplemental SIP Revision Containing Interim Year Analyses for Eight-Hour Ozone Maintenance Plan and Accounting for Recent Legislative Action on the Local Transit Assistance Fund (LTAF) Program

Dear ~~Ms. Bauer~~ Lindy:

This letter is in response to your request for clarification regarding the redesignation request and maintenance plan for the 1997 8-hour ozone standard. On March 23, 2009, the Arizona Department of Environmental Quality (ADEQ) submitted the MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area, dated February 2009. EPA Region 9 would like to act on this plan as quickly as possible in order to recognize that the Maricopa County nonattainment area is meeting the 1997 8-hour ozone standard, but, in order to do so, we need some additional information.

As we have discussed previously, the maintenance plan lacks interim-year analyses between the base year of 2005 and the horizon year of 2025. We need MAG to demonstrate that maintenance of the 1997 8-hour ozone standard is achieved throughout the initial maintenance period (i.e., 10 years beyond redesignation per CAA section 175A), and not just in the horizon year of 2025. MAG should develop and submit as a SIP revision interim analyses for the years 2016 and 2021 demonstrating that the 1997 8-hour standard is maintained throughout the 10-year maintenance period.

In addition, EPA understands that other revisions to the maintenance plan may be needed to account for a recent action taken by the Arizona Legislature. As we understand the situation, the Legislature has re-directed the funding from the Local Transit Assistance Fund (LTAF) program. These are lottery funds which are given to counties and cities to fund transit improvements under a formula established in House Bill 2001 (1993). The transit improvements funded through the LTAF program have been relied upon, and given emission reduction credit, in several federally approved SIPs, and are also brought forward into the ozone maintenance plan. Thus, the ozone maintenance plan will need to be revised accordingly.

EPA also understands that there is ongoing litigation regarding the LTAF program, and would like an explanation of the status of that litigation prior to your SIP submittal.

Please contact me at 520-498-0118 if you would like to discuss these issues, or if you have further questions.

Sincerely,

Colleen

Colleen McKaughan
Associate Director
USEPA, Region 9

cc: Eric Massy, ADEQ
William Wiley, Maricopa County