

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

Thursday, February 15, 2007  
MAG Office  
Phoenix, Arizona

MEMBERS PRESENT

Stephen Cleveland, City of Goodyear, Chairman  
\*Jess Segovia, Avondale  
Michael Salisbury for Lucky Roberts, Buckeye  
#Jim Weiss, Chandler  
#Jamie McCullough, El Mirage  
Lisa Taraborelli for Tami Ryall, Gilbert  
Doug Kukino, Glendale  
Scott Bouchie, Mesa  
Gaye Knight, Phoenix  
Larry Person, Scottsdale  
Antonio DeLaCruz, Surprise  
Oddvar Tveit, Tempe  
Larry Crisafulli for Walter Bouchard, Citizen Representative  
Corey Woods, American Lung Association of Arizona  
Barbara Sprungl, Salt River Project  
Brian O'Donnell, Southwest Gas Corporation  
\*Jim Mikula, Arizona Public Service Company  
\*Gina Grey, Western States Petroleum Association  
\*Randi Alcott, Valley Metro  
\*Dave Berry, Arizona Motor Transport Association  
Jeannette Fish, Maricopa County Farm Bureau  
Russell Bowers, Arizona Rock Products Association  
\*Michelle Rill, Greater Phoenix Chamber of Commerce

Amanda McGennis, Associated General Contractors  
Bert Acken for Connie Wilhelm-Garcia, Homebuilders Association of Central Arizona  
\*Stephen J. Andros, American Institute of Architects - Central Arizona  
#Mannie Carpenter, Valley Forward  
Kai Umeda for Patrick Clay, University of Arizona Cooperative Extension  
Beverly Chenausky, Arizona Department of Transportation  
Peter Hyde, Arizona Department of Environmental Quality  
Wienke Tax, Environmental Protection Agency  
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  
#Angela Cruz for B. Bobby Ramirez, Salt River Pima-Maricopa Indian Community  
\*David Rueckert, Citizen Representative

\*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  
Cathy Arthur, Maricopa Association of Governments  
Taejoo Shin, Maricopa Association of Governments  
Dean Giles, Maricopa Association of Governments  
Julie Hoffman, Maricopa Association of Governments  
Nagesh Krishnarajanagar, Maricopa Association of Governments  
Ieesuck Jung, Maricopa Association of Governments  
Patrisia Navarro, Maricopa Association of Governments  
Diane Arnst, Arizona Department of Environmental Quality  
David Lillie, Arizona Department of Environmental Quality  
Robert St. John, City of Glendale

Johanna Kuspert, Maricopa County Air Quality Department  
Hazel Chandler, Maricopa County Asthma Coalition  
Steve Egge, J&D Excavators  
Barb Sylvester, Brown & Caldwell Consultants  
Merry Ellen Boom, Converse Consultants  
Scott Di Biase, Pinal County Air Quality  
Don Gabrielson, Pinal County Air Quality  
Steve Trussell, Arizona Rock Products Association  
Bob Dulla, Sierra Research  
Nick Simonetta, Jennings, Strouss & Salmon, PLC  
Cameron Flower, Kitchell Environmental Services  
#Ruth Garcia, Town of Buckeye

1. Call to Order

A meeting of the MAG Air Quality Technical Advisory Committee was conducted on February 15, 2007. Larry Person, City of Scottsdale, Acting Chair, called the meeting to order at approximately 1:35 p.m. Mannie Carpenter, Valley Forward; Jamie McCullough, City of El Mirage; Ruth Garcia, Town of Buckeye; Angela Cruz, Salt River Pima-Maricopa Indian Community; and Jim Weiss, City of Chandler, attended the meeting via telephone conference call.

2. Call to the Audience

Mr. Person 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 table adjacent to the doorway inside the meeting room. Citizens are asked not to exceed a three minute time period for their comments. Public comment is provided at the beginning of the meeting for nonagenda items and nonaction agenda items. Mr. Person noted that no public comment cards had been received.

3. Approval of the February 1, 2007 Meeting Minutes

The Committee reviewed the minutes from the February 1, 2007 meeting. Amanda McGennis, Associated General Contractors, referred to the two last paragraphs on page four of the minutes. She inquired about preliminary draft measures two and three having different control efficiencies. Bob Dulla, Sierra Research, discussed preliminary draft measure two, extensive dust control training program. He stated that the goal is to adopt a Clark County (Las Vegas, Nevada) type program where all on-site supervisors and foreman are required to have a dust card. It was assumed that the control efficiency would increase from 50 to 70 percent due to the increase in watering. Mr. Dulla indicated that in Clark County, approximately 20,000 people had gone through the training since it began in 1999. The idea was that everyone on the construction site was familiar with the requirements of the program; therefore, a big increase in efficiency can be assumed. Mr. Dulla stated that for preliminary draft measure three, core dust control training program with video distribution (train the trainer concept) the control was assumed to be less since the outreach would not be as extensive. Therefore, the benefits would be lower.

Jeannette Fish, Maricopa Farm Bureau, indicated that there was a typographical error on page eleven of the February 1, 2007 meeting minutes. Russell Bowers, Arizona Rock Products Association, moved and Corey Woods, American Lung Association of Arizona, seconded and the motion to approve the February 1, 2007 meeting minutes as corrected carried unanimously.

4. Description of the Preliminary Draft Comprehensive List of Measures to Reduce PM-10 Particulate Matter

Lindy Bauer, Maricopa Association of Governments, reminded the Committee that a workshop is scheduled for Friday, February 16, 2007 at 9:00 a.m. at the MAG office to provide an opportunity to ask the consultants questions on the MAG PM-10 Source Attribution and Deposition Study and descriptive information presented for the Preliminary Draft Comprehensive List of Measures to Reduce PM-10 Particulate Matter. She indicated that at this meeting, Mr. Dulla will continue to describe the measures.

Mr. Dulla presented the analysis for the remaining 28 preliminary draft measures. The analysis for the other 18 preliminary draft measures was presented at the February 1, 2007 meeting. A total of

46 measures were evaluated. Mr. Dulla mentioned that there are two issues when reviewing the measures: descriptions/assumptions and comparing measures based on cost effectiveness. He indicated that he will also be at the workshop to answer questions. Mr. Dulla requested any additional information from the Committee that may be helpful in making the assumptions as accurate as possible.

Mr. Dulla discussed preliminary draft measure number seven, increase fines for dust control. The goal is to increase compliance by levying higher penalties. He noted that the current ceiling of \$10,000 per day per violation is set in statute; therefore, a change in statute would be required for this measure. Mr. Dulla discussed the enforcement history. He stated that the average penalty has increased approximately \$5,000 per violation since the Enforcement Division assumed settlement authority in July 2005. Mr. Dulla mentioned the factors that can affect fine level and the response to increased fines. He noted that behavior change is typically a lagged response. The rule effectiveness for Rule 310 in the Draft 2005 PM-10 Emissions Inventory is approximately 49 percent. Mr. Dulla indicated that he believes that is actually higher since there has been less than a year between the time when the Enforcement Division assumed settlement authority and when the rule effectiveness study was completed. Therefore, there was less than a year to achieve the reduction in the backlog or increase in fines.

Mr. Dulla stated that it is not possible to quantify the cost effectiveness for measure seven. He indicated that the goal is to make noncompliance unprofitable and can that be achieved by increased inspections, Notices of Violation (NOVs), and fines per year; increased fines; or a combination of the two. He stated that on an annual basis, the cost of noncompliance will increase much more through additional inspections than through raising fines. Mr. Dulla indicated that he believes the measure is more effectively achieved by increasing inspections.

Ms. McGennis asked if Clark County was contacted regarding measure seven. Mr. Dulla replied that Clark County was not contacted to discuss this measure. Ms. McGennis commented that everyone in Clark County is typically fined the same. She noted that Clark County found no effectiveness in increasing fines. Ms. McGennis suggested contacting Clark County.

Brian O'Donnell, Southwest Gas Corporation, inquired if the fine structure accounts for the number of projects for a specific industry in relation to the number of violations. Jo Crumbaker, Maricopa County Air Quality Department, responded that the fine structure does have a component for the size and severity of the site and party that violated. Ms. McGennis commented that Clark County does not discriminate by the size of the party or project. Ms. Crumbaker replied that size refers to the extent of noncompliance not the size of the project. She stated that there is a component of environmental and public harm in the penalty. Ms. McGennis commented that there has been a difference in fines depending on the size of the contractor.

Mr. Bowers inquired about how the Committee should comment on the preliminary draft measures. Mr. Dulla replied that he will be available at the workshop to answer more detailed questions. Mr. Bowers commented that the Committee needs an opportunity to vet the measures and that there does not appear to be enough time in this meeting. Stephen Cleveland, City of Goodyear, Chair, stated that the intent is to provide the Committee with the big picture at this meeting and more details can be given at the workshop. He inquired about the length of the workshop. Ms. Bauer responded that the workshop will begin at 9:00 a.m. and will continue as long as needed.

Mr. Dulla discussed preliminary draft measure number eight, establish a certification program for dust free developments to serve as an industry standard. The goal is to create a program that provides publicity value to contractors for minimizing construction emissions. He indicated that the measure has a fundamentally different approach to dust control (carrot instead of a stick). Mr. Dulla mentioned the criteria that needs to be established that minimizes construction emissions. He stated that the certification process and Public Awareness Program would need to also be established for this measure. Mr. Dulla mentioned the cost elements and benefits of the measure. He noted that the participation rate and cost effectiveness may not be real accurate. The assumption was that the difference between the current levels and the 80 percent goal represented the benefit that could be achieved from the program. He stated that the cost effectiveness of achieving 80 percent emission reduction is estimated to be \$10,752 per ton of PM-10 reduced. He noted that Maricopa County administrative costs of the program were not included.

Mr. Dulla discussed preliminary draft measure number ten, just in time grading. The goal is to eliminate fugitive dust from cleared land waiting for construction activity. He stated that this measure is based on a measure included in the Bullhead City State Implementation Plan. Mr. Dulla stated that the measure is focused on high wind events. He mentioned that there are two categories of disturbed land emissions: vehicle operation and wind blown dust. Mr. Dulla indicated that there is no benefit for vehicle operation emissions. He noted that the emissions will occur regardless of whether the land has been stabilized. Mr. Dulla stated that there is no estimate of high wind emissions or cost effectiveness.

Mr. Bowers commented on concerns from the Homebuilders Association of Central Arizona on this measure. He indicated that equipment is brought onto the property to do the entire subdivision. To divide the subdivision into increments would require the equipment to be brought on and off the property several times. Mr. Dulla stated that Maricopa County and ENVIRON have prepared estimates of emissions from high wind events. He indicated that he will breakout the categories that the measures address. Mr. Dulla stated that the information still needs to be included in this measure and vacant land related measures. At that time, the cost effectiveness will decrease making the measure more attractive.

Diane Arnst, Arizona Department of Environmental Quality, commented on the Clark County Rules, Section 94, that include just in time grading. Mr. Dulla responded that Clark County is primarily focused on high wind events, which would be consistent with Bullhead City. Ms. Arnst mentioned Clark County and Bullhead City. Mr. Cleveland requested that Mr. Dulla look at the data.

Mr. Dulla discussed preliminary draft measure number eleven, establish continuous monitoring requirements for permitted sources greater than 50 acres. The goal is to measure on-site concentrations so data is available to determine when dust control is needed and project emissions are minimized. He mentioned that the measure has been implemented in California. Mr. Dulla noted that there are practical problems in locating monitors for comparison of up wind and down wind values. He indicated that this measure was considered and rejected by the San Joaquin Valley since it was too expensive. Mr. Dulla stated that the two elements of cost are monitoring and watering. Assuming a baseline rule effectiveness of 50 percent, and full-time use of one additional watering truck, the cost effectiveness is \$21,530 per ton of PM-10 reduced. He noted that the annual benefits and cost effectiveness of this measure depends on the baseline level of control assumed and percent of time watering that is required. Mr. Bowers inquired if a cost effectiveness analysis was

conducted on this measure in San Joaquin. Mr. Dulla replied that he will look at the San Joaquin study.

Mr. Dulla discussed preliminary draft measure number twelve, conduct mobile monitoring to measure PM-10 and issue NOVs. The goal is to instrument a vehicle with equipment to measure PM-10 concentrations at property lines. He stated that Maricopa County has received approval to construct a multipurpose monitoring vehicle. The vehicle will be used to respond to complaints. Mr. Dulla noted that the cost effectiveness is not likely to be as attractive as having a monitor used specifically for dust control. He indicated that it is not possible to determine cost associated with PM measurement capabilities of the County vehicle. Mr. Dulla discussed the basis of the cost effectiveness that is \$54,000 per ton of PM-10 reduced. He stated that an alternate approach would be designing a vehicle that was specifically focused on dust control, which may be more attractive.

Mr. Dulla discussed preliminary draft measure number 13, cease dust generation activities during stagnant conditions. The goal is to eliminate early morning emissions on winter inversion days when exceedances are imminent. He indicated that ADEQ meteorological data from November 1<sup>st</sup> through February 15<sup>th</sup> for the past three years was reviewed. The frequency of operations being affected was approximately eight to ten days during the period. Mr. Cleveland asked if the numbers provided for High Pollution Advisory days, stagnation days, and exceedances overlap. Mr. Dulla responded that is correct. Wienke Tax, Environmental Protection Agency, asked if the annual averages are provided. Mr. Dulla replied that the numbers are per season over three years. Ms. Fish commented on the long period of time without rain last year.

Gaye Knight, City of Phoenix, inquired about the worst case scenario. Mr. Dulla responded that he will report back on the question. He noted that this measure would cease activity; however, there is another measure to shift activity. He mentioned feasibility and indicated that shifting activity does not eliminate the emissions. Mr. Cleveland stated that if the goal is to eliminate early morning emissions, industry could start operations at 10:00 a.m. instead of 7:00 a.m. Mr. Dulla discussed the need to identify potential participants.

Beverly Chenausky, Arizona Department of Transportation, suggested a change in the title since not all stagnant conditions will be high PM days. She mentioned looking at just high PM stagnant conditions, which would reduce the number of days required to cease operations. Mr. Dulla responded that the title can be changed. He noted that the average of stagnation days was lower than the number of exceedance days. Mr. Dulla discussed investigating options to offset costs of measure number 13. He mentioned that there is limited annual emission reduction and the cost effectiveness is unknown.

Mr. Dulla discussed preliminary draft measure number 14, establish maintenance requirements for paved roads and parking lots. The goal is to ensure silt levels on private roads/parking lots are maintained to limit potential for trackout and fugitive dust. He mentioned the requirements in Rules 310 and 310.01 to establish control and stabilization for unpaved surfaces. However, once an unpaved surface is paved, no subsequent maintenance requirements apply. Mr. Dulla mentioned silt loadings that build-up on the facilities and the control being degraded. He noted that the draft 2005 inventory does not include emissions from paved parking lots. Mr. Dulla stated that emissions from these sources are not eliminated unless the paved surface is maintained. He indicated that the analysis examined benefits of sweeping a parking lot once every two weeks. Mr. Dulla mentioned

that the cost effectiveness is estimated to be \$356,350 per ton of PM-10 removed. He noted that the benefits are highly dependent on baseline silt assumptions.

Ms. Knight commented that she thought the measure referred to maintaining gravel if used for stabilization. She stated that is more feasible than having the cities or Maricopa County adopting a code to sweep a parking lot every two weeks. Mr. Dulla referred to the MAG PM-10 Source Attribution and Deposition Study where a parking lot with a packed aggregate surface was observed as having dust plumes coming off the property next to a monitor. Ms. Knight encouraged the Committee to think about the measure as maintaining surfaces such as gravel versus having the cities adopt a code requiring the parking lots be swept every two weeks. Mr. Dulla mentioned observations of parking lots next to unpaved areas where there was a lot of trackout onto the parking lot, which had little control.

Mr. Dulla discussed preliminary draft measure number 15, conduct nighttime inspections. The goal is to reduce emissions from uncontrolled operations conducted at night. He indicated that current nighttime enforcement is limited. Mr. Dulla stated that recent field study and analysis of monitoring data confirm the importance of PM-10 emitted in predawn hours to exceedances in winter months. He noted that opacity measurements are difficult/impossible to conduct in the dark. The primary alternative is to use a mobile monitor at the property line in the dark. Mr. Dulla indicated that industry response is assumed to be increased watering of two additional trucks/drivers per facility and a baseline rule effectiveness of 50 percent. He stated that the cost elements include monitoring (one percent) and watering (99 percent). Mr. Dulla mentioned that the cost effectiveness is estimated to be \$10,752 per ton of PM-10 removed.

Mr. Dulla discussed preliminary draft measure number 16, increase inspection frequency for permitted facilities. The goal is to increase compliance from permitted facilities through increased inspections. He noted that in discussions with Maricopa County, they indicated that additional staff are required to improve Rule 310 compliance. The current shortfall in the rule effectiveness goal of 80 percent is 31 percent, based on the draft 2005 inventory. He mentioned that the rule effectiveness is probably higher due to a lagged response from increased settlement fines. Mr. Dulla stated that increased inspection frequency is not expected to achieve the gap between current levels and the 80 percent target. He indicated that a combination of measures, education, enforcement, etcetera will be needed to fill the gap. The analysis assumed that increased watering would be used to achieve 80 percent rule effectiveness. The cost effectiveness is estimated to be \$65,765 per ton of PM-10 reduced.

Bert Acken, Lewis and Roca, indicated that he concurred with the statement that a combination of measures will be needed to fill the gap. He stated that from an industry standpoint, there has been a focus on enforcement. Mr. Acken stated that industry has advocated for education and that it is good to see education as an important component.

Mr. Dulla discussed preliminary draft measure number 17, increase number of proactive inspections in areas of highest emission densities. The goal is to increase compliance from facilities located in areas with highest emission density. He stated that the analysis assumed target facilities are inspected twice per day. Mr. Dulla indicated that compliance response would be an increase in haul road watering from once every two hours to once every hour. He mentioned that the cost components include inspection (five percent) and increased watering (95 percent). The cost

effectiveness is estimated to be \$65,900 per ton of PM-10 removed. Mr. Dulla noted that this measure has an extra element of cost due to training. However, measures 16 and 17 are very similar.

Mr. O'Donnell commented on the increased inspections around the monitors and inquired about the cost per ton of PM-10 removed. Mr. Dulla replied that the focus is on industry around two monitors. He stated that haul roads were originally being watered every four hours. In 2006, the haul roads were watered every two hours. If there is still excess emissions, watering would occur every hour. The benefit is measuring the increase in watering in response to increased scrutiny. It does not involve attainment at a particular monitor. Mr. Cleveland asked if there is a point where it would be cheaper to lay asphalt on the haul road. Mr. Dulla responded that multiple methods can be used. Mr. O'Donnell commented that in the area of the monitors there would be enough inspections to prevent exceedances. He indicated that he expected the cost per ton of PM-10 removed would be less in areas where there is increased inspections. Mr. Dulla replied that the tonnage reduction is needed to get the monitors into compliance.

Mr. Dulla discussed preliminary draft measure number 18, notify violators more rapidly to promote immediate compliance. The goal is to reduce time allowed for compliance during November-February. He stated that he looked at the impact on owners of vacant lots and unpaved lots. Mr. Bowers commented on receiving a NOV nine months after the infraction. He mentioned that it would be helpful to industry to be notified immediately so they could cease the activity. Mr. Bowers stated that if a NOV is going to be issued, drive onto the property and ask for the dust compliance officer. Mr. Dulla stated that the impact on attainment will be small in terms of five percent reductions; however, it will be much more important for impact at the monitors. Mr. Cleveland commented on the immediacy of the notification given the time period of November-February.

Ms. McGennis commented that Clark County has immediate notification and remediation within 24 hours, which is highly effective. Mr. Dulla responded that the analysis was completed on vacant lots which have a mandatory 60 day notification period. Ms. Crumbaker stated that there is typically nobody present on vacant lots; therefore, research of ownership is required. She stated that the compliance practices have been switched. The direction to the inspector is that as long as someone is working on the site and a violation is observed, the inspector will advise the person on the site of the observation. The exception is that some of the trackout follow-ups are completed after the activity ceases for the day. The inspectors do not go on-site since trackout can be observed on the road. Those contacts are made later since nobody is on-site at the time.

Mr. Cleveland inquired about the standard time frame for notices. Ms. Crumbaker responded that recent changes have occurred in terms of who is responsible for certain inspections to address the issue of delayed notices. She stated that the current guideline is if a violation is observed and someone is on-site to advise them of the violation. Ms. Crumbaker stated that the inspector will generally return to the office and notify the corporate office as well. Mr. Bowers commented on taking credit. Mr. Cleveland stated that the measure addresses vacant lots and the discussion has been regarding operational lots. He indicated that another measure may be needed. Barbara Sprungl, Salt River Project, commented that she agrees with adding another measure.

Mr. Dulla stated that the maximum annual benefits from immediate compliance represents 750 tons (November-February) or less than one percent. He indicated that the actual benefit will be less, compliance is unclear and is assumed at 25 percent. Mr. Dulla commented on linking the measures and looking at the economic efficiency of putting the measures in place versus the potential benefit.

Mr. Cleveland asked if there was a difference between the 60 days to stabilize requirement in Rule 310 versus 15 days to stabilize. Mr. Dulla responded that there was not an estimate of emissions that occurred. He indicated that the cost effectiveness is based on estimates computed for unpaved parking - \$6,000 per ton of PM-10 removed (minimum) and vacant lots - \$239,050 per ton of PM-10 removed (maximum).

Mr. Dulla discussed preliminary draft measure number 19, fully implement Rule 316. The goal is to implement fugitive dust revisions adopted in June 2005. He stated that prior to the 2005 Revision, Rule 316 contained only emission limitations not fugitive dust control measures. Mr. Dulla indicated that facilities subject to Rule 316 were required to comply with Rule 310. He discussed the revisions adopted. Mr. Dulla provided the cost effectiveness (per rulemaking pursuant to A.R.S. 49-112): large-sized facility, \$4,802-\$5,501; medium-sized facility #1, \$6,417-\$7,437; medium-sized facility #2, \$9,126-\$10,678; and small-sized facility, \$30,087-\$59,750. He indicated that the analysis was not updated. It is being reported for a comparison of the cost effectiveness of the other measures.

Mr. Dulla discussed preliminary draft measure number 20, require private companies to use PM-10 certified street sweepers. The goal is to reduce silt levels on paved surfaces through increased sweeping. He stated that this measure is similar to measure 14. Mr. Dulla indicated that the measures have the same cost effectiveness of \$356,350 per ton of PM-10 reduced. He noted that the benefits are highly dependent on baseline silt assumptions, which will be discussed at the workshop.

Mr. Dulla discussed preliminary draft measure number 21, shift hours of operation during stagnant conditions in November through February. The goal is to eliminate early morning emissions on winter inversion days when exceedances are imminent. He stated that this measure is similar to measure 13. The primary difference is that this measure does not reduce emissions. Mr. Dulla indicated that the measure would provide substantial aid to demonstrating attainment at the monitors and the cost to industry will need to be investigated.

Mr. Dulla discussed preliminary draft measure number 22, model cumulative impacts for newer modified stationary sources. The goal is to place a cap on growth in PM-10 emission density. He indicated that this measure would require modeling for new/modified facilities to account for emissions from adjacent facilities. Emissions that cause concentrations to exceed a threshold would need to be offset. Mr. Dulla stated that there is currently no market in Maricopa County for offsets. He mentioned that the costs of offsets would encompass a range of measures examined. Mr. Dulla indicated that San Joaquin Valley has a well developed market system with costs ranging from \$20,000 to \$40,000 per ton of PM-10 removed. He noted that there is a cost curve and the lowest cost control for industry is \$109 per ton of PM-10 removed for paving unpaved roads. The cost would rise depending on market activity.

Mr. Dulla discussed preliminary draft measure number 23, conduct nighttime and weekend inspections. The goal is to reduce emissions from uncontrolled operations conducted at night and on weekends. He stated that this measure is the same as measure 15, but includes weekends. The analysis is basically the same. Since monitoring is only one percent of overall cost, there is no difference in cost effectiveness between night and weekend inspections. The cost effectiveness is estimated to be \$10,752 per ton of PM-10 removed.

Mr. Dulla discussed preliminary draft measure number 26, reduce off-road vehicle use in areas with high off-road vehicle activity. The goal is to expand the City of Goodyear all-terrain vehicle (ATV)

and off-highway vehicle (OHV) restrictions to the PM-10 nonattainment area. The Goodyear ordinance does not allow ATVs and OHVs to operate on unimproved property without written permission of the property owner. Mr. Dulla discussed the requirements of written permission. He mentioned the enforcement, benefits, and cost of the ordinance. He indicated that the cost effectiveness of the measure is estimated to be \$230 per ton of PM-10 removed. Mr. Dulla stated that most of the activity in Goodyear ceased within a week and no arrests have been made. He noted that the activity likely moved elsewhere. Ms. Fish commented that the ATV and OHV riders are still within the PM-10 nonattainment area.

Mr. Acken commented on ATVs and OHVs being a source in the draft 2005 inventory. He mentioned the cost effectiveness and indicated that he hopes other communities consider a similar ordinance. Mr. Dulla stated that it is his understanding that enforcement in the Salt River Area has had a similar effectiveness. Ms. Knight indicated that the City of Phoenix conducted extensive enforcement in the Salt River Area as well as installing guard rails, barriers, etc. She stated that Phoenix does not have the same ordinance as Goodyear, but aggressive enforcement. Ms. Knight indicated that a lot of the problems occur on state land. Mr. Cleveland commented on identifying the State as a partner in reducing the activity and also the Bureau of Land Management.

Mr. Dulla indicated that there were four measures addressing vacant lots and open land is separate. He mentioned the Goodyear ordinance and stated that there were no fixed costs to amortize. Ms. Fish commented on a change in the way Maricopa County can regulate and enforce this type of ordinance. She mentioned that the issue also occurs in unincorporated areas of the County. Ms. Fish noted that private land owners have installed signs/barriers and called the police; however, the problem still exists. Mr. Person commented that the cost effectiveness applies to three percent of the draft 2005 inventory. Mr. Dulla responded that is correct.

Mr. Dulla discussed preliminary draft measure number 29, sweep streets with PM-10 certified street sweepers. The goal is to ensure that all cities and towns use PM-10 certified street sweepers. He stated that some communities are still using noncertified sweepers. Mr. Dulla mentioned that PM-10 certified sweepers are 50 percent more efficient than noncertified sweepers. He indicated that the marginal cost of certified sweepers is approximately \$3,500 per vehicle. The cost effectiveness is estimated to be \$302 per ton of PM-10 removed, assuming only paying for the increment of the sweeper. If a community is buying a sweeper for the first time and it is not part of the normal cycle, the cost effectiveness will be very different.

Mr. Dulla discussed preliminary draft measure number 31, repave or overlay paved roads with rubberized asphalt. The goal is to reduce PM-10 emitted from tire wear by paving roads with rubberized asphalt. He mentioned a study conducted by the Arizona Department of Transportation (ADOT) that found tire wear emissions are 30 to 50 percent lower on rubberized asphalt than on Portland Concrete Cement (PCC). He noted that this is a small category of emissions. Mr. Dulla discussed the emission benefits and cost of rubberized asphalt. The cost effectiveness, assuming 50 percent reduction, ranges from \$631,000 to \$4,290,000 per ton. He noted that the marginal cost of rubberized asphalt versus PCC could improve cost effectiveness. Mr. Dulla indicated that cost effectiveness may not be relevant in light of Proposition 400, benefits for miles of rubberized asphalt are not included in the draft 2005 inventory, and scheduled paving will contribute to annual PM-10 reductions.

Mr. Cleveland commented on the public perception of noise reduction. Ms. Knight stated that Phoenix overlays asphalt with rubberized asphalt. She mentioned this as a commitment where credit could be taken. Mr. Dulla replied that the inventory and vehicle miles traveled on those roads would be needed to estimate a benefit.

Mr. Bowers commented on Proposition 400 and a mandatory use of rubberized asphalt. Ms. Chenausky referred to the ADOT study. She stated that this is geared toward freeway use, which would show a greater benefit. Ms. McGennis indicated that she can provide a study that compares asphalt to asphalt. Ms. Chenausky provided information on studies looking at various pavement structures and surfaces. Ms. McGennis commented that credit should also be taken for using concrete. She suggested not limiting the measure to rubberized asphalt. Mr. Dulla asked if the National Cooperative Highway Research Program studies measured the reduction in tire-wear. Ms. McGennis replied that is correct.

Mr. Dulla discussed preliminary draft measures number 38, strengthen and increase enforcement of Rule 310.01 for vacant lots; 39, restrict vehicular use and parking on vacant lots; 40, enhanced enforcement of trespass ordinances and codes; and 41, vacant lots stabilized by Maricopa County if owners do not respond. He noted that the analysis is limited for these measures since he has not been able to incorporate an estimate of windblown dust for these categories of land use. Mr. Dulla indicated that the measures will be updated and provided to the Committee.

Mr. Dulla discussed preliminary draft measure number 42, schedule improvements on parallel streets to retain alternate route options along major corridors. The goal is to enhance capacity of parallel roads to improve traffic flow along key corridors, and reduce congestion and vehicle emissions. He indicated that the measure is focused on reducing exhaust emissions, which represent one percent of PM-10 emitted in the draft 2005 inventory. Mr. Dulla discussed the impact of speed on components of vehicle PM emissions. He indicated that potential benefit is extremely limited and cost effectiveness per ton of PM-10 reduced is extremely poor.

Mr. Dulla discussed preliminary draft measure number 43, build park and ride lots earlier. The goal is to reduce emissions by decreasing the number of single occupancy vehicles on the road. He mentioned that reduced vehicle miles traveled eliminates trip related exhaust and fugitive dust emissions. Mr. Dulla noted that the emission benefits only accrue to years in which the park and ride lots would not have been constructed. He stated that the use of transit has PM-10 drawbacks. Mr. Dulla indicated that a transit bus exhaust PM is almost 100 times higher than light duty vehicle PM. He discussed the PM analysis of paved road fugitive dust and indicated that park and ride lots will reduce PM-10 emissions if carpools are used and transit buses are operated at a minimum capacity of 75 percent. Mr. Dulla noted that the cost effectiveness is not attractive for PM-10 control.

Mr. Cleveland inquired about the bow wake of a bus. Mr. Dulla replied that a comparison would need to be conducted between the bow wake of a bus versus the vehicles that would have been driven. This measure addresses fugitive dust from the tires. Ms. Chenausky referred to the assumptions and commented on those who ride the bus because they have no vehicle. Mr. Dulla responded that this measure addresses park and ride lots. Ms. Chenausky commented on the analysis of full ridership. Mr. Dulla replied that the assumption was 1.2 persons per vehicle.

Mr. Dulla discussed preliminary draft measure number 44, coordinate public transit services with Pinal County. The goal is to shift single occupant commute travel into transit and reduce vehicle

miles traveled and emissions. He noted that Pinal County currently has no transit service and there are similar issues to measure 43.

Mr. Dulla discussed preliminary draft measure number 45, increase fines for open burning. The goal is to decrease emissions from uncontrolled burns by raising the cost of noncompliance. He stated that the current penalty of \$25 per occurrence is set in A.R.S. 49-501. Mr. Dulla indicated that the draft 2005 inventory does not contain any emissions from uncontrolled burns. He mentioned that there is no data on the number or size of uncontrolled burns. The only information is from complaints. Mr. Dulla noted that while the magnitude of emissions appears small, a recent field study shows that emissions and potential impacts from uncontrolled burns can be significant. The Statute would need to be revised to raise the fine.

Mr. Bowers commented on field burning and asked if there has been discussions with the tribal nations. Mr. Dulla responded that he did not find that information in the draft 2005 inventory. Ms. Sprungl commented on a video clip shown at the January 11, 2007 meeting where there was open burning near a monitor.

Mr. Dulla discussed preliminary draft measure number 46, restrict use of outdoor fireplaces, pits and ambient fireplaces in the hospitality industry. The goal is to close the loopholes in existing rates and reduce emissions from nonessential fireplace use. He mentioned the current restrictions, exemptions and fines. Mr. Dulla noted that there is no specific category in the draft 2005 inventory for outdoor fireplaces, pits and ambient heating in hospitality industry. He discussed the compliance options and indicated that the cost effectiveness depends on the approach: curtailment - \$132,000 per ton or retrofit - \$190,000 per ton. Mr. Dulla noted that since enforcement already restricts burning on High Pollution Advisory days, the marginal cost of extending those restrictions to other sources should be minimal.

Mr. Cleveland asked if an incentive retrofit conversion program was considered. Mr. Dulla responded that based on research in other areas, people are not necessarily willing to replace their wood burning stoves.

Mr. Dulla provided the 2007 MAG PM-10 control measures ranked by increasing cost effectiveness. Mr. Acken referred to measure 15 and asked if the cost effectiveness is to go from 50 percent to 80 percent. Mr. Dulla replied that is correct. Mr. Acken referred to statements made that the cost effectiveness may be higher due to a lagged response from increased settlement fines. He inquired about the cost effectiveness of going from 70 to 80 percent. Mr. Dulla responded that water is a common control in the construction industry. The question is what is the baseline, target, and cost of enforcement. He indicated that he will report back on the question.

Peter Hyde, Arizona Department of Environmental Quality, requested that the table of measures include two more columns: tons of PM-10 and percent of tons in the draft 2005 inventory. Doug Kukino, City of Glendale, requested that the degree of confidence in the ranking be provided at the workshop. Mr. Dulla replied that the information will be provided. He indicated that he has a lot of confidence about the order of magnitude.

Mr. Person commented that for a community in the desert, the measures require a lot of water as the primary strategy. He stated that water may become as expensive as other strategies. Mr. Person suggested minimizing the use of water to avoid other issues.

Ms. Tax stated that in response to a question from the last meeting, EPA is conducting a study on dust suppressants. The report will be provided to the Committee once it is available.

Mr. Bowers inquired about measure 22. Mr. Dulla responded that the measure would require modeling for new/modified facilities to account for emissions from adjacent facilities. Emissions causing concentrations to exceed a threshold would need to be offset. Mr. Bowers responded that the protocol on the modeling policy has not been made available. Mr. Dulla replied that he has not seen that information. Mr. Hyde stated that the modeling policy has been discussed with industry in recent months. He indicated that it is not final.

Ms. Sprungl inquired about submitting comments since she will not be able to attend the workshop. She also requested that materials from the workshop be provided to the Committee. Mr. Cleveland indicated that comments on the measures can be submitted to Ms. Bauer, MAG staff.

Mr. Dulla presented the 2007 MAG PM-10 control measures with unknown cost effectiveness. Mr. Cleveland requested that a table be presented at the workshop that includes all of the measures. Mr. Dulla indicated that information from this meeting and the last meeting will be compiled and provided at the workshop. He indicated that the plan is to collect additional information and revise the measures based on input. A report will then be provided.

Ms. Knight suggested starting with the measures that are the most effective at the workshop. Mr. Dulla stated that it is important to look at the economic efficiency, confidence in the numbers, and magnitude of the draft 2005 inventory impacted. Mr. Cleveland commented on the organization of the measures. Ms. Tax mentioned the importance of looking at the measures that impact emissions. Cathy Arthur, Maricopa Association of Governments, suggested adding a column to the table to show how the measures impact the Salt River Area.

Mr. Bowers asked if measures included in the Five Percent Plan for PM-10 can be removed. Ms. Tax replied that measures can be removed with difficulty and generally have to be replaced with something else. Mr. Bowers commented on being theoretical in the decisions. He mentioned that the Serious Area Plan for PM-10 has 77 measures. Mr. Bowers commented on the weaker measures being replaced. Ms. Tax responded that EPA is in the process of discussing the Five Percent Plan for PM-10. Ms. Bauer stated that the Clean Air Act does allow a committed measure to be replaced with another measure that has equal or greater impact. She noted that a demonstration and plan amendment would be required. Mr. Bowers commented on spending resources on every measure. Mr. Cleveland commented on effectively implementing the 77 measures from the Serious Area Plan. Ms. Tax stated that some of the measures presented are improvements of existing measures.

##### 5. Status Report of Agricultural Measures

Ms. Fish provided an update on the Governor's Agricultural Best Management Practices (BMPs) Committee evaluation of possible measures to reduce PM-10 emissions from agriculture. She noted that the control efficiency factors presented at the last meeting on the four new BMPs were incorrect. Ms. Fish indicated that it is not a percentage efficiency factor, it is a tons per acre reduction. She stated that since the last meeting, the technical working group has recommended to the Governor's Agricultural BMPs Committee one more BMP related to no tillage during nighttime hours on High Pollution Advisory days. Ms. Fish added that more information was requested from ADEQ and the MAG consultants on the most critical hours. She noted that the final wording of the BMP will be discussed at the next Governor's Agricultural BMPs Committee meeting. In addition, there will be

discussion on changing the program to require two BMPs per category of land on each farm. A request was presented to the technical working group by Maricopa County to consider submitting BMPs to an agency. She noted that considerable resistance was expressed. This may also be discussed at the next meeting.

Mr. Person commented that at the last meeting, the presentation indicated that one of the BMPs being considered would affect night tillage and harvest activities on stagnant air days. He asked if the BMP is now just for night tillage. Ms. Fish replied that is correct. She indicated that alfalfa must be harvested at night.

Ms. McGennis asked if more credit would be given if the BMPs are documented. Ms. Fish responded that the BMPs are required to be included in a document maintained by the farmer and provided upon request. She indicated that farmers are already implementing more than one BMP per category.

Ms. Knight commented on ADEQ having one staff person for Agricultural BMPs. She noted that there are no measures to address the issue. Ms. Fish stated that the ADEQ staff person responds to every complaint and for every complaint the farmer had BMPs in place.

6. CMAQ Annual Report

Dean Giles, Maricopa Association of Governments, gave a presentation on the 2006 Congestion Mitigation and Air Quality (CMAQ) Improvement Funds Annual Report. He indicated that in accordance with federal guidance and coordination with ADOT, MAG has completed the 2006 CMAQ Annual Report. The report includes a description of the projects that obligated in FY 2006 and the estimated emission benefits.

Mr. Hyde commented on the number of projects that have more than one ton of PM-10 reduction, based on the information provided in the third column from the right in the report. He suggested that if the Committee is serious about achieving the five percent reductions, then the funding needs to be reallocated to projects that reduce PM-10.

7. Legislative Update

Ms. Bauer provided a legislative update. She indicated that Senator Allen and Senator Huppenthal are interested in the air quality issues. At the moment S.B. 1552, is serving as a placeholder bill. The Committee will be going through a process to recommend a suggested list of measures for approval by the MAG Regional Council. She indicated that MAG is standing back because we are going through the process.

8. Call for Future Agenda Items

Mr. Cleveland announced that the next meeting of the Committee is tentatively scheduled for March 1, 2007. With no further comments, the meeting was adjourned.