



**MARICOPA  
ASSOCIATION of  
GOVERNMENTS**

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September 21, 2006

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Stephen S. Cleveland, Goodyear City Manager, Chairman

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Thursday, September 28, 2006 - 1:30 p.m.  
MAG Office, Suite 200 - Saguaro Room  
302 North 1<sup>st</sup> Avenue, Phoenix

Please park in the garage underneath the building. Bring your ticket to the meeting; parking will be validated. For those using transit, the 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.

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 Ann Wimmer at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

Members of the MAG Air Quality Technical Advisory Committee may attend in person, via videoconference or by telephone conference call. Those attending by videoconference must notify the MAG site three business days prior to the meeting. Those attending by telephone conference call are requested to call (602) 261-7510 between 1:25 p.m. and 1:30 p.m. on the date of the meeting. After the prompt, please enter the meeting ID number 27822 (on your telephone key pad) followed by the pound key. If you have a problem or require assistance, dial 0 after calling the number above.

Please be advised that under procedures approved by the MAG Regional Council, all MAG committees need to have a quorum to conduct the meeting. A quorum is a simple majority of the membership. If you are unable to attend the meeting, please make arrangements for a proxy from your entity to represent you.

A Voluntary Association of Local Governments in Maricopa County

City of Apache Junction • City of Avondale • Town of Buckeye • Town of Carefree • Town of Cave Creek • City of Chandler • City of El Mirage • Fort McDowell Yavapai Nation • Town of Fountain Hills • Town of Gila Bend  
Gila River Indian Community • Town of Gilbert • City of Glendale • City of Goodyear • Town of Guadalupe • City of Litchfield Park • Maricopa County • City of Mesa • Town of Paradise Valley • City of Peoria • City of Phoenix  
Town of Queen Creek • Salt River Pima-Maricopa Indian Community • City of Scottsdale • City of Surprise • City of Tempe • City of Tolleson • Town of Wickenburg • Town of Youngtown • Arizona Department of Transportation

## 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 Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.

3. Approval of the June 29, 2006 Meeting Minutes

4. Evaluation of Proposed CMAQ Projects for the FY 2008-2012 MAG TIP

An evaluation of proposed Congestion Mitigation and Air Quality Improvement (CMAQ) projects submitted for the FY 2008-2012 MAG Transportation Improvement Program (TIP) has been conducted. The deadline for submitting the projects was September 1, 2006. The evaluation includes emission reductions and cost-effectiveness information.

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

2. For information.

3. Review and approve the June 29, 2006 meeting minutes.

4. For information, discussion and recommendation to forward the evaluation of proposed CMAQ projects for the FY 2008-2012 MAG Transportation Improvement Program to the MAG Transportation Review Committee and modal committees for use in prioritizing projects. In addition, rank the Air Quality Projects to be forwarded to the MAG Transportation Review Committee.

5. Evaluation of Proposed PM-10 Paving Unpaved Road Projects for FY 2008 and 2009 CMAQ Funding

An evaluation of proposed PM-10 Paving Unpaved Road Projects for Federal Fiscal Year 2008 and 2009 Congestion Mitigation and Air Quality Improvement funds has been conducted. The deadline for submitting the projects was September 8, 2006.

For FY 2008 and 2009, the FY 2007-2011 MAG Transportation Improvement Program identifies \$2 million and \$3.5 million respectively in CMAQ funding for Paving Unpaved Road Projects. It is requested that the Paving Unpaved Road Projects be ranked and forwarded to the Transportation Review Committee. Please refer to the enclosed material.

6. Evaluation of Proposed PM-10 Certified Street Sweeper Projects for FY 2007 CMAQ Funding

An evaluation of proposed PM-10 Certified Street Sweeper Projects for Federal Fiscal Year 2007 Congestion Mitigation and Air Quality Improvement (CMAQ) funds has been conducted. The deadline for submitting the projects was September 8, 2006.

The FY 2007 Unified Planning Work Program and FY 2007-2011 MAG Transportation Improvement Program contains \$1,440,000 in FY 2007 CMAQ funding to encourage the purchase and utilization of PM-10 certified street sweepers. A minimum local match of 5.7 percent is required.

Twelve projects requesting federal funds were evaluated. The MAG Air Quality Technical Advisory Committee is requested to recommend a prioritized list of proposed PM-10 Certified Street Sweeper Projects for FY 2007 CMAQ funding to the MAG Management Committee. Please refer to the enclosed material.

5. For information, discussion and recommendation to rank the Proposed PM-10 Paving Unpaved Road Projects for FY 2008 and 2009 CMAQ funding and forward to the MAG Transportation Review Committee.

6. For information, discussion and recommendation of a prioritized list of proposed PM-10 Certified Street Sweeper Projects for FY 2007 CMAQ funding and to retain the prioritized list for any additional FY 2007 CMAQ funds that may become available due to year-end closeout, including any redistributed obligation authority, or additional funding received by this region.

7. Call for Future Agenda Items

The next meeting of the Committee has been tentatively scheduled for **Thursday, October 26, 2006 at 1:30 p.m.** The Chairman will invite the Committee members to suggest future agenda items.

7. For information and discussion.

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

Thursday, June 29, 2006  
MAG Office  
Phoenix, Arizona

MEMBERS PRESENT

Stephen Cleveland, City of Goodyear, Chairman  
\*Avondale: Michael Powell  
Buckeye: Michael Salisbury for Lucky Roberts  
#Chandler: Jim Weiss  
#Gilbert: Greg Svelund for Tami Ryall  
Glendale: Doug Kukino  
#Mesa: Scott Bouchie  
Phoenix: Joe Gibbs for Gaye Knight  
#Scottsdale: Larry Person  
Surprise: Antonio DeLaCruz  
\*Tempe: Oddvar Tveit  
\*Citizen Representative: Walter Bouchard  
\*American Lung Association of Arizona: Bill Pfeifer  
#Salt River Project: Sunil Varma  
Southwest Gas Corporation: Brian O'Donnell  
Arizona Public Service Company: Jim Mikula  
#Western States Petroleum Association: Gina Grey  
\*Valley Metro: Randi Alcott  
\*Arizona Motor Transport Association: Dave Berry  
\*Maricopa County Farm Bureau: Jeannette Fish  
\*Arizona Rock Products Association: Russell Bowers  
\*Greater Phoenix Chamber of Commerce: Michelle Rill

Associated General Contractors: Amanda McGennis  
\*Homebuilders Association of Central Arizona: Connie Wilhelm-Garcia  
\*American Institute of Architects - Central Arizona: Stephen J. Andros  
\*Valley Forward: Mannie Carpenter  
\*University of Arizona - Cooperative Extension: Patrick Clay  
Arizona Department of Transportation: Beverly Chenausky  
Arizona Department of Environmental Quality: Peter Hyde  
Environmental Protection Agency: Wienke Tax  
Maricopa County Air Quality Department: Jo Crumbaker  
Arizona Department of Weights and Measures: Duane Yantorno  
\*Federal Highway Administration: Ed Stillings  
\*Arizona State University: Judi Nelson  
#Salt River Pima-Maricopa Indian Community: Christella Armijo for B. Bobby Ramirez  
\*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  
Dean Giles, Maricopa Association of Governments  
Julie Hoffman, Maricopa Association of Governments

Corey Woods, American Lung Association of Arizona/New Mexico  
Bob Kard, Maricopa County Air Quality Department  
Robert St. John, City of Glendale

1. Call to Order

A meeting of the MAG Air Quality Technical Advisory Committee was conducted on June 29, 2006. Stephen Cleveland, City of Goodyear, Chairman, called the meeting to order at approximately 1:40 p.m. Larry Person, City of Scottsdale; Jim Weiss, City of Chandler; Sunil Varma, Salt River Project; Gina Grey, Western States Petroleum Association; Greg Svelund, Town of Gilbert; Scott Bouchie, City of Mesa; and Christella Armijo, Salt River Pima-Maricopa Indian Community, attended the meeting via telephone conference call.

2. Call to the Audience

Mr. Cleveland 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. Cleveland noted that no public comment cards had been received.

3. Approval of the May 23, 2006 Meeting Minutes

The Committee reviewed the minutes from the May 23, 2006 meeting. Beverly Chenausky, Arizona Department of Transportation, moved and Jo Crumbaker, Maricopa County Air Quality Department, seconded and the motion to approve the May 23, 2006 meeting minutes carried unanimously.

4. Draft 2006 MAG Conformity Analysis for the Draft FY 2007-2011 MAG Transportation Improvement Program and Draft Regional Transportation Plan - 2006 Update

Dean Giles, Maricopa Association of Governments, presented the Draft 2006 MAG Conformity Analysis for the Draft FY 2007-2011 MAG Transportation Improvement Program (TIP) and Draft Regional Transportation Plan - 2006 Update. He indicated that a finding of conformity is required prior to the approval of the TIP and Regional Transportation Plan. Mr. Giles stated that the Draft 2006 MAG Conformity Analysis concludes that the FY 2007-2011 MAG TIP and Regional Transportation Plan - 2006 Update meet all applicable federal conformity requirements and are in conformance with the applicable air quality plans.

Mr. Giles mentioned that the Clean Air Act links transportation and air quality and requires that transportation activities be consistent with or conform to air quality goals. Transportation conformity ensures that transportation activities do not cause violations of federal air quality standards. He indicated that motor vehicle emissions budgets are established in air quality plans and are used in the regional emissions analysis. Mr. Giles discussed the conformity requirements and presented the results of the following: the conformity budget test for carbon monoxide; the adjusted one-hour ozone budget test, and the no-greater-than-2002 baseline emissions test for volatile organic compounds and nitrogen oxides for eight-hour ozone; and, the conformity budget test for PM-10. Mr. Giles discussed the transportation control measure funding in the FY 2007-2011 MAG TIP and provided a conformity schedule.

Ms. Chenausky referred to the transportation control measure funding in the FY 2007-2011 MAG TIP and asked if the additional \$35.8 million programmed for paving dirt roads, street sweepers, and

other air quality projects was considered in the conformity tests. Mr. Giles replied that the chart explains the transportation control measures and other air quality measures that are included in the TIP and Regional Transportation Plan. The chart is a general funding summary of the projects. Ms. Chenausky asked if the additional \$35.8 million for paving dirt roads, street sweepers, and other air quality projects was considered in the PM-10 conformity budget test. Mr. Giles responded that there was additional emission reduction credit taken for each of the analysis years for the PM-10 efficient street sweepers.

Larry Person, City of Scottsdale, commented that the results of the PM-10 conformity budget test show PM-10 emissions increasing from 2009 to 2026. He inquired about the trend. Cathy Arthur, Maricopa Association of Governments, replied that prior conformity analyses have shown the same trend. She stated that PM-10 emissions are increasing since all the unpaved roads that have high traffic (over 120 average daily traffic) will be paved by 2026. Therefore, there is no longer the benefit. Also, the street sweeper benefits go down over time once the entire fleet becomes PM-10 efficient. Ms. Arthur stated that travel demand continues to increase and there is not as many control measures to offset the increase. She mentioned that the trend of increasing PM-10 emissions needs to be carefully monitored.

Joe Gibbs, City of Phoenix, made a motion to recommend approval of the Draft 2006 MAG Conformity Analysis for the Draft FY 2007-2011 MAG Transportation Improvement Program and Draft Regional Transportation Plan - 2006 Update. Michael Salisbury, Town of Buckeye, seconded and the motion passed unanimously.

5. Update on CMAQ Projects for the Federal FY 2006 Interim Year End Closeout

Mr. Giles provided an update on the Congestion Mitigation and Air Quality Improvement (CMAQ) projects for the Federal FY 2006 Interim Year End Closeout. He stated that on May 23, 2006, the MAG Air Quality Technical Advisory Committee made a recommendation to forward an evaluation of proposed CMAQ projects submitted for Federal FY 2006 Interim Year End Closeout to the MAG Transportation Review Committee (TRC) with a priority placed on the four projects with the highest PM-10 emission reductions. Also forwarded was a priority ranking of Air Quality Projects. Mr. Giles stated that there was a limited amount of funding available this year.

Mr. Giles mentioned that on May 25, 2006, the TRC made a slightly different recommendation than the Air Quality Technical Advisory Committee. He stated that the TRC recommendation is still very beneficial to reducing PM-10 emissions. The recommendation would result in an estimated PM-10 reduction of about 2,030 kilograms per day which is equivalent to approximately two metric tons per day. The TRC recommendation would fund five of the nine remaining PM-10 certified street sweeper projects that have been identified for FY 2006 CMAQ funding, the Fort McDowell-Yavapai Nation pave dirt road project, and the METRO transfer stations project. Mr. Giles stated that \$907,000 was recommended by the TRC for the highest five PM-10 reducing street sweeper projects. He mentioned that the street sweeper projects funded were: Arizona Department of Transportation (#2), Phoenix (#2), Tempe, Goodyear, and Tolleson. The MAG Management Committee concurred with the TRC recommendation. On June 28, 2006 the MAG Regional Council approved the Federal FY 2006 Interim Year End Closeout.

Mr. Cleveland asked if the TRC made a recommendation for the four remaining PM-10 certified street sweeper projects. Mr. Giles replied that a recommendation was not made for the remaining

four sweepers. Mr. Cleveland inquired about the process for the four PM-10 certified street sweeper projects that were not funded. Mr. Giles responded that the applicants could resubmit for FY 2007 CMAQ funding. Jim Weiss, City of Chandler, asked which sweeper projects were not funded. Mr. Giles replied that the proposed sweeper projects not funded were: Surprise (#2), Queen Creek, Cave Creek, and Chandler.

Brian O'Donnell, Southwest Gas Corporation, inquired about the members of the Transportation Review Committee and Management Committee. Mr. Giles replied that the TRC members are the public works directors or members of the streets departments, city staff. Mr. Cleveland stated that the Management Committee members are the city and county managers. He mentioned that the TRC makes a recommendation to the Management Committee and the Management Committee then makes a recommendation to the Regional Council. Mr. O'Donnell commented that the Air Quality Technical Advisory Committee includes members of the public whereas the TRC and Management Committee do not. He inquired about the rationale for changing the recommendation. Lindy Bauer, Maricopa Association of Governments, replied that members of the TRC noted that the four sweepers at the bottom of the list had very low daily emission reductions. Mr. Cleveland asked if the funds that would have been used for the four street sweeper projects were moved to other projects. Ms. Bauer replied that is correct.

Mr. Person asked if there was a negative or positive effect in the amount of particulate pollution as a result of the recommendation. Ms. Bauer responded that the recommendation was very good for PM-10. As was mentioned before, the recommendation would result in 2,030.28 kilograms per day reduction in PM-10 emissions, which equals slightly more than two metric tons per day.

#### 6. Particulate Pollution Update

Ms. Crumbaker provided an update on particulate pollution in Maricopa County. She discussed the PM-10 monitoring data, observations during high PM-10 episodes, and enforcement actions taken by Maricopa County. Ms. Crumbaker mentioned that there has been eighteen exceedance days in 2006 with the latest occurring on June 6, 2006 due to high wind. She indicated that the exceedances occurred under a mixture of conditions such as stagnant conditions, high winds, and special activity. A table of the 2006 PM-10 exceedances was distributed to the Committee.

Ms. Crumbaker provided pictures of what Maricopa County is observing during high PM-10 episodes. She indicated that some of the pictures include activity that resulted in enforcement action. She provided the direct compliant phone number as well as the general phone number for reporting a violation or air quality complaint. Ms. Crumbaker indicated that from July 1, 2005 to June 14, 2006, Maricopa County took 381 actions and the penalties were \$1,791,000. She indicated that the dust cases were 242 of the 381 total actions and \$850,000 of the \$1,791,000 total penalties. The number of permits are at 5,529. Mr. Crumbaker stated that this is a significant increase over the last couple of years.

Ms. Arthur asked if the June 6, 2006 PM-10 exceedance was at the Higley monitor. Ms. Crumbaker replied that is correct. Scott Bouchie, City of Mesa, requested a copy of the table distributed to the Committee. Mr. Cleveland responded that the table will be provided to those attending the meeting via telephone conference call promptly.

7. Call for Future Agenda Items

Mr. Cleveland announced that the next meeting of the Committee is tentatively scheduled for July 27, 2006. Mr. O'Donnell commented on public versus nonpublic committees. He stated that a public body recommendation should be forwarded to the decision-making body. He expressed concern with the TRC recommendation being different than the Air Quality Technical Advisory Committee recommendation, a public body. He requested further discussion. Mr. Cleveland suggested that the structure, current reporting system, and how they impact each other as a future agenda item.

Mr. O'Donnell asked if another committee could change a recommendation made by the Air Quality Technical Advisory Committee for an air quality measure. Ms. Bauer replied that for air quality measures, the Committee recommendations go directly to the Management Committee. The Management Committee may then make a recommendation to the Regional Council. Mr. Cleveland stated that for projects, the Air Quality Technical Advisory Committee recommendations along with multi-modal committee recommendations are advanced to the TRC and they are the recommending body.

Antonio DeLaCruz, City of Surprise, suggested the process of how projects are developed and brought forward to the Committee as a possible future agenda item.

Amanda McGennis, Associated General Contractors, stated that the AGC would like to bring photos and possibly make a presentation on two dust suppressant demonstrations at a future meeting. With no further comments, the meeting was adjourned.



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September 21, 2006

**TO:** Members of the MAG Air Quality Technical Advisory Committee

**FROM:** Dean Giles, Air Quality Planning Program Specialist

**SUBJECT:** EVALUATION OF PROPOSED CMAQ PROJECTS FOR THE  
FY 2008-2012 MAG TRANSPORTATION IMPROVEMENT PROGRAM

The Maricopa Association of Governments staff has conducted an evaluation of proposed Congestion Mitigation and Air Quality Improvement (CMAQ) projects submitted for the FY 2008-2012 MAG Transportation Improvement Program. In the attachment, Tables 1 through 5 provide the results of the project evaluation ranked by cost-effectiveness by modal category and Tables 6 through 9 breakout the ITS projects in Table 3 by fiscal year. This information is being presented to the MAG Air Quality Technical Advisory Committee for a possible recommendation to forward the CMAQ evaluation to the MAG Transportation Review Committee and modal committees for use in prioritizing projects. In addition, it is requested that the Committee rank the Air Quality Projects in Table 1, to be forwarded to the MAG Transportation Review Committee.

**BACKGROUND**

Each year, MAG programs available federal funds. Jurisdictions are requested, through the MAG Management Committee, the Transportation Review Committee, and modal committees, to submit project requests for federal funding. Based on the Regional Transportation Plan and FY 2008-2012 Transportation Improvement Program (TIP) Guidance Report approximate FY 2012 CMAQ funding levels include: Intelligent Transportation Systems projects (\$6.7 million), bicycle and pedestrian projects (\$9.0 million), and air quality projects (\$8.0 million). Also, from the Regional Transportation Plan Arterial Street Life Cycle Program, CMAQ funding in the amounts of \$2.43 million for FY 2008, \$2.49 million for FY 2009, and \$2.04 million for FY 2010 is available for the programming of ITS projects. In addition to these categories of projects, the Regional Transportation Plan allocated CMAQ funding for Freeway Management System (FMS) projects and light rail transit. Since the specific FMS project improvements to be funded for FY 2012 are currently unknown, the CMAQ project evaluation will be made as this information becomes available. The deadline for submitting requests for MAG federal funding was September 1, 2006. To obtain initial public input, an Early Phase Transportation Stakeholder meeting was conducted on August 18, 2006. Opportunities for Early Phase Input conclude on September 21, 2006.

MAG staff evaluates the projects using two systems: the Congestion Management System rating system and the CMAQ emission reduction benefit. The CMS system uses average daily traffic

counts as the predominant measure of congestion. It is anticipated that the CMS scores will be made available to members of the MAG Transportation Review Committee for their October 26, 2006 meeting.

The Methodologies for Evaluating Congestion Mitigation and Air Quality Improvement Projects, August 15, 2005, were used to estimate the emission reduction benefits of the proposed CMAQ projects. The methodologies were presented at the CMAQ workshop conducted by MAG on June 28, 2005 and revised based on input received at the CMAQ workshop. Where appropriate, the emission reduction benefits and cost-effectiveness of CMAQ eligible projects have been quantified using these methodologies.

The CMAQ methodologies involve the estimation of the total daily weighted emissions reduction of PM-10, nitrogen oxides (NO<sub>x</sub>), and total organic gases (TOG) expressed in kilograms per day, and the cost-effectiveness of each project, measured in CMAQ dollars per metric ton of total annual emissions reduced. Since there have been no violations of the carbon monoxide (CO) standard since 1996, carbon monoxide has been assigned a weight of zero and therefore no CO emissions reductions are shown. The Environmental Protection Agency MOBILE6.2 emission model was used to estimate the PM-10 tailpipe exhaust and tire wear emission factors, NO<sub>x</sub>, and TOG, for the year of project implementation. The emission factors from the Serious Area PM-10 Plan were used to estimate reentrained PM-10 emissions on paved and unpaved roads, where appropriate.

All CMAQ eligible projects were evaluated for expected emission reductions and cost-effectiveness, where appropriate. The attachment Tables 1 through 5, provide the results of the project evaluation ranked by cost-effectiveness within each modal category. Tables 6 through 9 breakout the ITS projects in Table 3 by fiscal year. It is important to note that all of the proposed projects support committed control measures contained in the MAG air quality plans. It is anticipated that these projects will be reviewed and ranked by the modal committees and then forwarded to the Transportation Review Committee.

Following review of the CMAQ evaluation by the MAG Air Quality Technical Advisory Committee, it is anticipated that the Committee may make a possible recommendation to forward the CMAQ evaluation to the MAG Transportation Review Committee and modal committees for use in prioritizing projects. In addition, it is requested that the Committee rank the Air Quality Projects in Table 1 to be forwarded to the MAG Transportation Review Committee. The Transportation Review Committee will be requested to recommend a fiscally constrained list of projects for federal funding to the MAG Management Committee for inclusion in the Draft FY 2008-2012 MAG Transportation Improvement Program.

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

Attachments

**Table 1 - Evaluation of Proposed AIR QUALITY Projects for the Federal Fiscal Year 2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)**  
Approximately \$8.0 million available for FY 2012 (RTP and TIP Guidance Report)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
MAGFED07-05	MAG	Regionwide	Pave Unpaved Roads Program <sup>1</sup>	2012	10.00	0.00	0.00	624.97	624.97	\$1,474	NS	\$5,004,000
MAGFED07-06	MAG	Regionwide	Purchase PM-10 Certified Street Sweepers <sup>2</sup>	2012		0.00	0.00	192.51	192.51	\$1,825	NS	\$900,000
MAGFED07-01	MAG-Valley Metro	Regionwide	Telework/Ozone Education Program <sup>3</sup>	2012		77.28	69.21	271.92	418.41	\$2,226	NS	\$330,000
MAGFED07-07	MAG-Maricopa County	Regionwide	Trip Reduction Program <sup>3</sup>	2012		59.67	53.44	419.94	533.05	\$4,817	NS	\$910,000
MAGFED07-02	MAG-Valley Metro	Regionwide	Regional Rideshare Program <sup>2</sup>	2012		41.61	37.27	292.84	371.72	\$5,474	NS	\$721,000
MAGFED07-03	MAG-State of Arizona	Regionwide	Travel Reduction Program <sup>2</sup>	2012		0.45	0.40	3.15	4.00	\$95,252	NS	\$135,000

**Table 2 - Evaluation of Proposed BICYCLE and PEDESTRIAN Projects for the Federal Fiscal Year 2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)**

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
MAGFED07-04	MAG	Regionwide	Bicycle Safety Education Program <sup>6</sup>	2012		2.08	1.86	14.64	18.59	\$25,052	NS	\$165,000
GLBFED-01	Gilbert	Town of Gilbert	Design and Construct Bicycle Crossing <sup>7</sup>	2012	0.1	0.37	0.18	0.41	0.95	\$94,605	NS	\$490,000
FTHFED-01	Fountain Hills	Shea Boulevard, 142nd Street to Eagle Mountain Parkway	Construct 12-ft Multi Use Path (Scottsdale Section) and 8-ft Sidewalk (Fountain Hills Section) <sup>7,8</sup>	2012	0.5	0.17	0.08	0.18	0.43	\$116,966	NS	\$273,000
GDYFED-03	Goodyear	Yuma Road, Estrella Parkway to Litchfield Road	Construct 6-ft Bicycle Path and Signing <sup>7</sup>	2012	2	0.10	0.05	0.11	0.26	\$175,831	NS	\$251,300
CHNFED-01	Chandler	Chandler Boulevard at Price Road/ Loop 101L Interchange	Extend Bicycle Lane Through the Chandler Blvd/Loop 101 Interchange <sup>7</sup>	2012	0.5	0.37	0.18	0.41	0.95	\$181,273	NS	\$938,889
GLNFED-04	Glendale	Agua Fria Freeway (101L) at 63rd Avenue	Construct Multiuse Overpass <sup>8</sup>	2012	50	0.15	0.07	0.15	0.36	\$402,576	NS	\$1,369,200
GLNFED-01	Glendale	Grand Canal Maintenance Road: Agua Fria Freeway (101L) to New River	Construct 10-ft. wide Concrete Multi-Use Path, Including Landscaping, Lighting and Other Features <sup>7,8</sup>	2012	1.5	0.11	0.05	0.11	0.26	\$510,965	NS	\$723,800
SCTFED-02	Scottsdale	Central Arizona Project Canal, Via Linda Drive to Sweetwater Drive	Design and Construct 10-ft and 12 ft Multi-Use Path <sup>7,8</sup>	2012	1.75	0.16	0.07	0.17	0.41	\$616,812	NS	\$1,357,382
GLBFED-02	Gilbert	Gilbert Heritage District Downtown	Design and Construct 6 ft. Sidewalks and Ramps <sup>7</sup>	2012	1.69	0.07	0.02	0.05	0.14	\$645,470	NS	\$490,000
SCTFED-01	Scottsdale	Thomas Road, 64th Street to Pima Road	Improve Sidewalks and Add Bicycle Lanes <sup>7,8</sup>	2012	3	0.27	0.12	0.28	0.68	\$751,345	NS	\$2,768,016
SCTFED-03	Scottsdale	Arizona Canal, Chaparral Road to McDonald Drive	Design and Construct 10-ft to 12-ft Multi-Use Path <sup>7,8</sup>	2012	1	0.11	0.05	0.11	0.27	\$812,228	NS	\$1,208,076

Table 2 - Evaluation of Proposed BICYCLE and PEDESTRIAN Projects for the Federal Fiscal Year 2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
TMPFED-08	Tempe	Apache Boulevard, Terrace Road to Mill Avenue	Pedestrian and Bicycle Improvements <sup>8,9</sup>	2012	1.15	0.17	0.08	0.18	0.43	\$827,141	NS	\$1,938,096
MESFED-02	Mesa	1/4 Mile South of Southern Avenue from Extension to the Tempe Canal	Construct Pedestrian Refuge and Shelters for the Fiesta Pathway <sup>8</sup>	2012	2	0.10	0.03	0.06	0.19	\$986,847	NS	\$998,870
AVNFED-01	Avondale	Thomas Road Alignment, Rancho Santa Fe Blvd to 119th Avenue	Complete Shared Use Path, Bridge with Lighting and Landscaping <sup>8</sup>	2012	5	0.20	0.10	0.22	0.52	\$1,297,571	NS	\$6,300,000
TMPFED-07	Tempe	Hardy Drive, University Drive to Broadway Road	Pedestrian and Bicycle Improvements <sup>8,9</sup>	2012	1	0.09	0.04	0.09	0.21	\$1,419,255	NS	\$1,645,130
PHXFED-01	Phoenix	Hatcher Street, 3rd Street to 5th Street	Construct 8-ft Sidewalk, 3-ft Shoulder and Landscaping <sup>8</sup>	2012	0.125	0.04	0.01	0.03	0.08	\$2,034,568	NS	\$840,000
SURFED-01	Surprise	Bell Road, 141st Avenue to Loop 303L	Construct Sidewalks <sup>8</sup>	2012	5	0.04	0.01	0.03	0.08	\$2,047,637	NS	\$892,500
BKYFED-01	Buckeye	Downtown Buckeye	Construct Sidewalks, Curb and Gutter <sup>8</sup>	2012	9.5	0.01	0.00	0.00	0.01	\$2,810,420	NS	\$221,550
GDYFED-02	Goodyear	Yuma Road, Estrella Parkway to Litchfield Road	Construct 8-ft Sidewalk, Curb and Gutter <sup>8</sup>	2012	2	0.02	0.01	0.01	0.04	\$2,967,426	NS	\$593,530

Table 3 - Evaluation of Proposed ITS Projects for the Federal Fiscal Years 2008-2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
MMAFED-04	Maricopa County	Valley Wide	Upgrade Regional Archived Server (RADS) Equipment to Facilitate Arterial Data Integration and Dissemination. <sup>10</sup>	2012	2532	12.27	-0.02	0.00	12.25	\$3,334	NS	\$68,250
MMAFED-01	Maricopa County	Valley Wide	System Enhancements to Expand Arterial Traveler Information Systems, Including 511 and az511.com <sup>9,10</sup>	2008	2024	14.81	-4.69	0.00	10.12	\$22,760	NS	\$385,000
SURFED-03	Surprise	Coyote Lakes & Bell; Dysart & Bell; 134th Avenue & Bell (Bell Road Phase 1 Fiber addition)	Equipment (CCTV cameras) and installation <sup>9,10</sup>	2008	2.5	0.75	-0.53	0.00	0.22	\$54,321	NS	\$20,000
TMPFED-04	Tempe	Citywide	Purchase and Install Malfunction Management Units In All Traffic Control Cabinets <sup>9,10</sup>	2008	90	6.08	-1.77	0.00	4.31	\$105,240	NS	\$758,330
TMPFED-02	Tempe	Citywide	Install Video Detection System <sup>9,10</sup>	2009	90	5.45	-1.56	0.00	3.89	\$116,684	NS	\$758,330
TMPFED-01	Tempe	Citywide	Design and Construct Fiber Optic Cable Installations <sup>9,10</sup>	2010	90	4.93	-1.40	0.00	3.53	\$128,696	NS	\$758,330
MESFED-01	Mesa	Along Baseline Road, Southern Avenue, Dobson Road and Alma School Road	Establish Fiber Optic Link with Nearby Arterial Streets in Vicinity of US 60 <sup>9,10</sup>	2009	12.5	2.23	1.23	0.00	3.46	\$172,797	NS	\$1,000,000
SCTFED-04	Scottsdale	South Scottsdale	Replace Controllers and Cabinets <sup>9,10</sup>	2008	82	3.60	-1.05	0.00	2.56	\$175,572	NS	\$250,000
MAGFED-01	MAG	Various Locations	Traffic Signal Optimization <sup>9</sup>	2008	30	1.35	-0.39	0.00	0.96	\$187,352	NS	\$300,000
SCTFED-05	Scottsdale	South Scottsdale	Replace Controllers and Cabinets <sup>9,10</sup>	2009	82	3.23	-0.92	0.00	2.30	\$194,663	NS	\$250,000
MAGFED-02	MAG	Various Locations	Traffic Signal Optimization <sup>9</sup>	2009	50	2.02	-0.58	0.00	1.44	\$207,724	NS	\$500,000
SCTFED-07	Scottsdale	South Scottsdale	Replace Controllers and Cabinets <sup>9,10</sup>	2010	82	2.92	-0.83	0.00	2.09	\$214,704	NS	\$250,000
MAGFED-03	MAG	Various Locations	Traffic Signal Optimization <sup>9</sup>	2012	50	1.47	-0.38	0.00	1.09	\$273,555	NS	\$500,000

Table 3 - Evaluation of Proposed ITS Projects for the Federal Fiscal Years 2008-2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOX(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
MMAFED-03	Maricopa County	Glendale, Peoria and Scottsdale City Limits	Establish REACT Arterial Incident Response Teams in Glendale and Peoria <sup>10</sup>	2009	321	1.97	-0.24	0.00	1.73	\$299,549	NS	\$867,200
BCKFED-01	Buckeye	Town of Buckeye-Miller Road (N-S) from I-10 (north limit) to Hazen Road (south limit).	Implement ITS Project <sup>9,10</sup>	2009	7	0.19	0.07	0.00	0.26	\$485,320	NS	\$210,000
MESFED-05	Mesa	Mesa Drive and Main Street	Expand Fiber Optic Network and Link 11 Traffic Signals to the Mesa TMC <sup>9,10</sup>	2008	3.5	0.79	0.44	0.00	1.22	\$488,449	NS	\$1,000,000
MESFED-06	Mesa	Along Sections of Broadway Road, Dobson Road, Alma School Road and Baseline Road	Establish Fiber Optic Link on Broadway Road and Connection to West ITS Loop <sup>9,10</sup>	2009	4	0.63	0.35	0.00	0.98	\$611,040	NS	\$1,000,000
TMPFED-05	Tempe	Along Light Rail Transit Corridor in Tempe	Install CCTV Monitoring Stations at Various Locations <sup>9,10</sup>	2012	6	0.42	-0.11	0.00	0.31	\$618,978	NS	\$325,832
AVNFED-02	Avondale	Avondale City Hall	Develop strategic plan for the Avondale Traffic Management System and Design Operation Center <sup>9,10</sup>	2008	57	0.28	-0.09	0.00	0.19	\$1,090,116	NS	\$350,000
MESFED-04	Mesa	University Drive, Dobson Road to Country Club Drive; University Drive, Mesa Drive to Higley Road	Improvements to Existing Fiber Optic Communications Systems and Install Communications Network and ITS Devices <sup>9,10</sup>	2010	7	0.68	-0.20	0.00	0.48	\$1,238,152	NS	\$1,000,000
MMAFED-05	Maricopa County	Sun City West	Construct and Install New Pull Boxes, Branch Conduits, New Backbone and Branch <sup>9,10</sup>	2008	4.5	0.23	-0.07	0.00	0.16	\$1,338,609	NS	\$355,600
CHNFED-02	Chandler	Chandler Boulevard, Delaware Street to Gilbert Road	Install Fiber Optic Cable Traffic Signal Interconnection <sup>9,10</sup>	2008	2.8	0.16	-0.05	0.00	0.11	\$1,699,765		\$315,000
GDYFED-01	Goodyear	McDowell Road, Sarival Road to Litchfield Road	Design and Construct Fiber Optic Interconnection for Traffic Signals and Video <sup>9,10</sup>	2012	3	0.42	-0.28	0.00	0.15	\$2,430,808	NS	\$591,045
SURFED-02	Surprise	Bell Road, Loop 303 to Jack Rabbit Trail (195th Avenue)	Design and Connect Traffic Signals, CCTV Cameras and Changeable Message Signs <sup>9,10</sup>	2012	4	0.49	-0.20	0.00	0.29	\$2,461,816	NS	\$1,200,000
GLNFED-03	Glendale	Various Locations	Establish Fiber Optic Link With Nearby Arterial Streets in the Vicinity of US 60 <sup>9,10</sup>	2012	2	0.25	-0.10	0.00	0.15	\$3,012,197	NS	\$774,594
SCTFED-06	Scottsdale	Shea Blvd to Carefree Highway, 56th Street to 136th Street	Install Dynamic Message Signs <sup>10</sup>	2012	0.75	0.07	-0.02	0.00	0.05	\$3,075,375	NS	\$250,000
MESFED-03	Mesa	Guadalupe Rd, I01L to Extension; Dobson Rd, Lindner to Pampa; Alma School Rd, Median to Guadalupe	Improvements to Existing Fiber Optic Communications Systems and Install Communications Network and ITS Devices <sup>9,10</sup>	2012	4.5	0.29	-0.13	0.00	0.16	\$3,734,269	NS	\$1,000,000
QNCFED-02	Queen Creek	Ellsworth Road, 2.5 miles South of Ellsworth Loop to Empire Blvd/Hunt Hwy	Construct Traffic Signal/CCTV System <sup>9,10</sup>	2012	2.5	0.09	-0.06	0.00	0.04	\$4,185,805	NS	\$255,200
GLNFED-02	Glendale	Various Locations	Install CCTV Cameras <sup>9,10</sup>	2008	3	0.04	-0.01	0.00	0.03	\$4,774,509	NS	\$224,592
QNCFED-01	Queen Creek	Ritterhouse Road, 1.5 miles East of Sossaman Rd to 1/2 mile West of Ellsworth Rd	Construct Traffic Signal/CCTV System <sup>9,10</sup>	2009	1.6	0.05	-0.03	0.00	0.02	\$5,280,710	NS	\$172,700

Table 3 - Evaluation of Proposed ITS Projects for the Federal Fiscal Years 2008-2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
QNCFED-03	Queen Creek	Queen Creek Town Center	Construct ITS Infrastructure and Traffic Management System <sup>9,10</sup>	2008	2.7	0.15	-0.09	0.00	0.06	\$5,650,350	NS	\$563,600
MMAFED-06	Maricopa County	99th Avenue, Olive Avenue to Bell Road	Install Conduit and Fiber Optic Cable to Connect Existing and Planned ITS Field Devices <sup>9,10</sup>	2010	5.2	0.22	-0.20	0.00	0.01	\$33,555,267	NS	\$805,000
MMAFED-02	Maricopa County	Olive Avenue, Litchfield Road to the Agua Fria Freeway (101L)	Construct and Install New Conduit and New Fiber Optic Cable to Connect Existing Various Locations <sup>9,10</sup>	2012	5.9	0.22	-0.21	0.00	0.01	\$38,088,335	NS	\$885,500
TMPFED-03	Tempe	Citywide	Engineering Services for ITS Network Components <sup>9,10</sup>	2008		NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NS	\$135,975
TMPFED-06	Tempe	Citywide	Feasibility Study and Implementation of Program to Collect Traffic Condition Data from a Variety of Consumer Products <sup>10</sup>	2008		NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NS	\$250,000

Table 4 - Evaluation of Proposed LIGHT RAIL Project for the Federal Fiscal Year 2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
	Valley Metro Rail	Mesa to Metrocenter	Light Rail <sup>11</sup>	2012		15.41	13.80	108.42	137.62	\$167,260	NS	\$18,400,000

Table 5 - Evaluation of Proposed FMS Project for the Federal Fiscal Year 2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
	ADOT	Various Locations	Freeway Management System <sup>10</sup>	2012		NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NS	\$9,821,984

Table 6 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2008 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
MMAFED-01	Maricopa County	Valley Wide	System Enhancements to Expand Arterial Traveler Information Systems, Including 511 and az511.com <sup>9,10</sup>	2008	2024	14.81	-4.69	0.00	10.12	\$22,760	NS	\$385,000
SURFED-03	Surprise	Coyote Lakes & Bell; Dysart & Bell; 134th Avenue & Bell (Bell Road Phase 1 Fiber addition)	Equipment (CCTV cameras) and installation <sup>9,10</sup>	2008	2.5	0.75	-0.53	0.00	0.22	\$54,321	NS	\$20,000
TMPFED-04	Tempe	Citywide	Purchase and Install Malfunction Management Units In All Traffic Control Cabinets <sup>9,10</sup>	2008	90	6.08	-1.77	0.00	4.31	\$105,240	NS	\$758,330

Table 6 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2008 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
SCTFED-04	Scottsdale	South Scottsdale	Replace Controllers and Cabinets <sup>9,10</sup>	2008	82	3.60	-1.05	0.00	2.56	\$175,572	NS	\$250,000
MAGFED-01	MAG	Various Locations	Traffic Signal Optimization <sup>9</sup>	2008	30	1.35	-0.39	0.00	0.96	\$187,352	NS	\$300,000
MESFED-05	Mesa	Mesa Drive and Main Street	Expand Fiber Optic Network and Link 11 Traffic Signals to the Mesa TMC <sup>9,10</sup>	2008	3.5	0.79	0.44	0.00	1.22	\$488,449	NS	\$1,000,000
AVNFED-02	Avondale	Avondale City Hall	Develop strategic plan for the Avondale Traffic Management System and Design Operation Center <sup>9,10</sup>	2008	57	0.28	-0.09	0.00	0.19	\$1,090,116	NS	\$350,000
MMAFED-05	Maricopa County	Sun City West	Construct and Install New Pull Boxes, Branch Conduits, New Backbone and Branch <sup>9,10</sup>	2008	4.5	0.23	-0.07	0.00	0.16	\$1,338,609	NS	\$355,600
CHNFED-02	Chandler	Chandler Boulevard, Delaware Street to Gilbert Road	Install Fiber Optic Cable Traffic Signal Interconnection <sup>9,10</sup>	2008	2.8	0.16	-0.05	0.00	0.11	\$1,699,765		\$315,000
GLNFED-02	Glendale	Various Locations	Install CCTV Cameras <sup>9,10</sup>	2008	3	0.04	-0.01	0.00	0.03	\$4,774,509	NS	\$224,592
QNCFED-03	Queen Creek	Queen Creek Town Center	Construct ITS Infrastructure and Traffic Management System <sup>9,10</sup>	2008	2.7	0.15	-0.09	0.00	0.06	\$5,650,350	NS	\$563,600
TMPFED-03	Tempe	Citywide	Engineering Services for ITS Network Components <sup>9,10</sup>	2008		NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NS	\$135,975
TMPFED-06	Tempe	Citywide	Feasibility Study and Implementation of Program to Collect Traffic Condition Data from a Variety of Consumer Products <sup>10</sup>	2008		NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NQ <sup>13</sup>	NS	\$250,000

Table 7 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2009 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/met.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
TMPFED-02	Tempe	Citywide	Install Video Detection System <sup>9,10</sup>	2009	90	5.45	-1.56	0.00	3.89	\$116,684	NS	\$758,330
MESFED-01	Mesa	Along Baseline Road, Southern Avenue, Dobson Road and Alma School Road	Establish Fiber Optic Link with Nearby Arterial Streets in Vicinity of US 60 <sup>9,10</sup>	2009	12.5	2.23	1.23	0.00	3.46	\$172,797	NS	\$1,000,000
SCTFED-05	Scottsdale	South Scottsdale	Replace Controllers and Cabinets <sup>9,10</sup>	2009	82	3.23	-0.92	0.00	2.30	\$194,663	NS	\$250,000
MAGFED-02	MAG	Various Locations	Traffic Signal Optimization <sup>9</sup>	2009	50	2.02	-0.58	0.00	1.44	\$207,724	NS	\$500,000
MMAFED-03	Maricopa County	Glendale, Peoria and Scottsdale City Limits	Establish REACT Arterial Incident Response Teams in Glendale and Peoria <sup>10</sup>	2009	321	1.97	-0.24	0.00	1.73	\$299,549	NS	\$867,200
BCKFED-01	Buckeye	Town of Buckeye-Miller Road (N-S) from I-10 (north limit) to Hazen Road (south limit).	Implement ITS Project <sup>10</sup>	2009	7	0.19	0.07	0.00	0.26	\$485,320	NS	\$210,000
MESFED-06	Mesa	Along Sections of Broadway Road, Dobson Road, Alma School Road and Baseline Road	Establish Fiber Optic Link on Broadway Road and Connection to West ITS Loop <sup>9,10</sup>	2009	4	0.63	0.35	0.00	0.98	\$611,040	NS	\$1,000,000
QNCFED-01	Queen Creek	Rittenhouse Road, 1.5 miles East of Sossaman Rd to 1/2 mile West of Ellsworth Rd	Construct Traffic Signal/CCTV System <sup>9,10</sup>	2009	1.6	0.05	-0.03	0.00	0.02	\$5,280,710	NS	\$172,700

Table 8 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2010 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/mct.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
TMPPFED-01	Tempe	Citywide	Design and Construct Fiber Optic Cable Installations <sup>9,10</sup>	2010	90	4.93	-1.40	0.00	3.53	\$128,696	NS	\$758,330
SCTPFED-07	Scottsdale	South Scottsdale	Replace Controllers and Cabinets <sup>9,10</sup>	2010	82	2.92	-0.83	0.00	2.09	\$214,704	NS	\$250,000
MESFED-04	Mesa	University Drive, Dobson Road to Country Club Drive; University Drive, Mesa Drive to Higley Road	Improvements to Existing Fiber Optic Communications Systems and Install Communications Network and ITS Devices <sup>9,10</sup>	2010	7	0.68	-0.20	0.00	0.48	\$1,238,152	NS	\$1,000,000
MMAFED-06	Maricopa County	99th Avenue, Olive Avenue to Bell Road	Install Conduit and Fiber Optic Cable to Connect Existing and Planned ITS Field Devices <sup>9,10</sup>	2010	5.2	0.22	-0.20	0.00	0.01	\$33,555,267	NS	\$805,000

Table 9 - Evaluation of Proposed ITS Projects for the Federal Fiscal Year 2012 Sorted by Cost Effectiveness (Includes Weighted Emission Reductions)

Project#	Agency	Location	Work Type	FY	Length (miles)	Emission Reduction Weighted TOG(kg/day)	Emission Reduction Weighted NOx(kg/day)	Emission Reduction Weighted PM10(kg/day)	Emission Reduction Weighted Total(kg/day)	Cost Effectiveness (\$/mct.ton)	CMS Score <sup>12</sup>	CMAQ Funds Requested
MMAFED-04	Maricopa County	Valley Wide	Upgrade Regional Archived Server (RADs) Equipment to Facilitate Arterial Data Integration and Dissemination. <sup>10</sup>	2012	2532	12.27	-0.02	0.00	12.25	\$3,334	NS	\$68,250
MAGFED-03	MAG	Various Locations	Traffic Signal Optimization <sup>9</sup>	2012	50	1.47	-0.38	0.00	1.09	\$273,555	NS	\$500,000
TMPPFED-05	Tempe	Along Light Rail Transit Corridor in Tempe	Install CCTV Monitoring Stations at Various Locations <sup>9,10</sup>	2012	6	0.42	-0.11	0.00	0.31	\$618,978	NS	\$325,832
GIDYFED-01	Goodyear	McDowell Road, Sarival Road to Litchfield Road	Design and Construct Fiber Optic Interconnection for Traffic Signals and Video <sup>9,10</sup>	2012	3	0.42	-0.28	0.00	0.15	\$2,430,808	NS	\$591,045
SURFED-02	Surprise	Bell Road, Loop 303 to Jack Rabbit Trail (195th Avenue)	Design and Connect Traffic Signals, CCTV Cameras and Changeable Message Signs <sup>9,10</sup>	2012	4	0.49	-0.20	0.00	0.29	\$2,461,816	NS	\$1,200,000
GLNFED-03	Glendale	Various Locations	Establish Fiber Optic Link With Nearby Arterial Streets in the Vicinity of US 60 <sup>9,10</sup>	2012	2	0.25	-0.10	0.00	0.15	\$3,012,197	NS	\$774,594
SCTPFED-06	Scottsdale	Shea Blvd to Carefree Highway, 56th Street to 136th Street	Install Dynamic Message Signs <sup>10</sup>	2012	0.75	0.07	-0.02	0.00	0.05	\$3,075,375	NS	\$250,000
MESFED-03	Mesa	Guadalupe Rd, 101L to Extension; Dobson Rd, Lindner to Pampa; Alma School Rd, Median to Guadalupe	Improvements to Existing Fiber Optic Communications Systems and Install Communications Network and ITS Devices <sup>9,10</sup>	2012	4.5	0.29	-0.13	0.00	0.16	\$3,734,269	NS	\$1,000,000
QNCFED-02	Queen Creek	Ellsworth Road, 2.5 miles South of Ellsworth Loop to Empire Blvd/Hunt Hwy	Construct Traffic Signal/CCTV System <sup>9,10</sup>	2012	2.5	0.09	-0.06	0.00	0.04	\$4,185,805	NS	\$255,200
MMAFED-02	Maricopa County	Olive Avenue, Litchfield Road to the Agua Fria Freeway (101L)	Construct and Install New Conduit and New Fiber Optic Cable to Connect Existing Various Locations <sup>9,10</sup>	2012	5.9	0.22	-0.21	0.00	0.01	\$38,088,335	NS	\$885,500

- <sup>1</sup>Supports the Measure in the Serious Area PM-10 Plan: "Reduce Particulate Emissions from Unpaved Roads and Alleys"
- <sup>2</sup>Supports the Measure in the Serious Area PM-10 Plan: "PM-10 Efficient Street Sweepers"
- <sup>3</sup>Supports the Transportation Control Measures (TCM) in the Serious Area PM-10 Plan and CO Maintenance Plan.<sup>4</sup> Encouragement of Telecommuting, Teleworking and Teleconferencing" and "Areawide Public Awareness Programs"
- <sup>4</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Trip Reduction Program"
- <sup>5</sup>Supports the TCMs in the Serious Area PM-10 Plan and CO Maintenance Plan: "Areawide Public Awareness Program" and "Employer Rideshare Program Incentives"
- <sup>6</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Encouragement of Bicycle Travel"
- <sup>7</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Development of Bicycle Travel Facilities"
- <sup>8</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Encouragement of Pedestrian Travel"
- <sup>9</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Coordinate Traffic Signal Systems"
- <sup>10</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Develop Intelligent Transportation Systems"
- <sup>11</sup>Supports the TCM in the Serious Area PM-10 Plan and CO Maintenance Plan: "Mass Transit Alternatives"
- <sup>12</sup>NS- No CMS Score is currently available
- <sup>13</sup>NQ- Not Quantified



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September 21, 2006

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Dean Giles, Air Quality Planning Program Specialist

SUBJECT: EVALUATION OF PROPOSED PM-10 PAVING UNPAVED ROAD PROJECTS FOR FY 2008 AND FY 2009 CMAQ FUNDING

The Maricopa Association of Governments staff has evaluated proposed PM-10 Paving Unpaved Road Projects for emission reductions and corresponding cost-effectiveness for FY 2008 and FY 2009 Congestion Mitigation and Air Quality Improvement (CMAQ) funding. For FY 2008, four projects requesting approximately \$4.0 million in federal funds were received. Also, for FY 2009 four projects requesting approximately \$4.1 million in federal funds were received. The evaluation of these projects is included in the attachment. For each fiscal year, the proposed projects have been listed in order of cost-effectiveness based on the amount of CMAQ funding requested. Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to rank the PM-10 Paving Unpaved Road Projects for FY 2008 and FY 2009 CMAQ funding to be forwarded to the MAG Transportation Review Committee.

### BACKGROUND

The Revised MAG 1999 Serious Area Particulate Plan for PM-10 contains the committed control measure "Reduce Particulate Emissions from Unpaved Roads and Alleys". The Regional Transportation Plan, adopted by the MAG Regional Council, assumes the annual paving of at least ten miles of unpaved roads to reduce fugitive dust. Paving projects may include public, or publicly maintained unpaved roads, with weekday traffic volumes of 120 or more vehicles per day. The FY 2007-2011 MAG Transportation Improvement Program identifies \$2,000,000 in FY 2008 CMAQ funding and \$3,500,000 in FY 2009 CMAQ funding for Paving Unpaved Road Projects. On August 11, 2006, MAG solicited PM-10 Paving Unpaved Road Projects from member agencies in the Maricopa County PM-10 Nonattainment Area. Project requests were due by September 8, 2006.

### EVALUATION AND PROJECT RANKING

MAG staff estimated the emission reductions and cost-effectiveness using CMAQ funding requested, based on the methodology contained in the Methodologies for Evaluating Congestion Mitigation and Air Quality Improvement Projects, August 15, 2005. Federal CMAQ guidance

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requires that the estimated emission reductions for each project submitted for CMAQ funding be considered during project selection.

The evaluation of the proposed FY 2008 and FY 2009 PM-10 Paving Unpaved Road Projects is included in the attachment. The proposed projects have been listed in ascending order of cost-effectiveness based on the amount of CMAQ funding requested.

Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to rank the proposed PM-10 Paving Unpaved Road Projects for FY 2008 and FY 2009 CMAQ funding to be forwarded to the MAG Transportation Review Committee. The MAG Transportation Review Committee may make a recommendation for a TIP amendment for Paving Unpaved Road Projects on October 26, 2006. The recommendation may be considered by the MAG Management Committee on November 8, 2006, the Transportation Policy Committee on November 15, 2006, and the MAG Regional Council on December 13, 2006.

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

Attachment

**Proposed PM-10 Paving Unpaved Road Projects for FY 2008 CMAQ Funding**

\$2.0 million available in FY 2008 of the FY 2007-2011 MAG Transportation Improvement Program

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction TOG (kg/day)	Emission Reduction NOx (kg/day)	Emission Reduction PM-10 (kg/day)	Emission Reduction Total (kg/day)	Cost Effectiveness (CMAQ funds /metric ton)	CMAQ Funds Requested	Total Cost
Litchfield Park	Paving of alleys in older portions of Litchfield Park	Pave unpaved alleys	2008	1.6	0	0	125	125	\$78	\$53,079	\$758,541
Surprise	Roads in Saguaro View	Pave unpaved roads	2008	4.25	0	0	266	266	\$1,444	\$2,082,500	\$2,975,000
Phoenix	Roads within City of Phoenix	Pave unpaved roads	2008	3.0	0	0	78	78	\$2,200	\$933,333	\$1,333,333
El Mirage	Desert Cove Road (Dysart Rd. - El Mirage Rd.)	Pave unpaved roads	2008	1.0	0	0	67	67	\$2,740	\$933,154	\$1,418,792
										\$4,002,066	\$6,485,666

**Proposed PM-10 Paving Unpaved Road Projects for FY 2009 CMAQ Funding**

\$3.5 million available in FY 2009 of the FY 2007-2011 MAG Transportation Improvement Program

Agency	Location	Work Type	FY	Length (miles)	Emission Reduction TOG (kg/day)	Emission Reduction NOx (kg/day)	Emission Reduction PM-10 (kg/day)	Emission Reduction Total (kg/day)	Cost Effectiveness (CMAQ funds /metric ton)	CMAQ Funds Requested	Total Cost
Phoenix	Alleys within City of Phoenix	Pave unpaved alleys	2009	18.0	0	0	469	469	\$183	\$466,667	\$666,667
Surprise	Roads located west of 219 <sup>th</sup> Ave	Pave unpaved roads	2009	3.27	0	0	204	204	\$1,444	\$1,602,302	\$2,289,002
Phoenix	Roads within City of Phoenix	Pave unpaved roads	2009	3.0	0	0	78	78	\$2,475	\$1,050,000	\$1,500,000
El Mirage	125 <sup>th</sup> Ave and 127 <sup>th</sup> Ave (Varney Rd. - Peoria Ave)	Pave unpaved roads	2009	1.0	0	0	63	63	\$2,942	\$1,000,000	\$1,483,283
										\$4,118,969	\$5,938,952



**MARICOPA  
ASSOCIATION of  
GOVERNMENTS**

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September 21, 2006

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Dean Giles, Air Quality Planning Program Specialist

SUBJECT: EVALUATION OF PROPOSED PM-10 CERTIFIED STREET SWEEPER  
PROJECTS FOR FY 2007 CMAQ FUNDING

The Maricopa Association of Governments staff has evaluated proposed PM-10 Certified Street Sweeper Projects for emission reductions and corresponding cost-effectiveness for FY 2007 Congestion Mitigation and Air Quality Improvement (CMAQ) funding. Twelve projects requesting approximately \$1.95 million in federal funds were received. The evaluation of these projects and supplemental information are included in the attachment. The proposed projects have been listed in order of cost-effectiveness based on the amount of CMAQ funding requested. Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to recommend a prioritized list of PM-10 Certified Street Sweeper Projects for FY 2007 CMAQ funding and to retain the prioritized list for any additional FY 2007 CMAQ funds that may become available due to year-end closeout, including any redistributed obligation authority, or additional funding received by this region.

BACKGROUND

The Revised MAG 1999 Serious Area Particulate Plan for PM-10 contains the committed control measure "PM-10 Efficient Street Sweepers" to reduce particulates that become airborne from vehicle travel on paved roads. The FY 2007 Unified Planning Work Program and FY 2007-2011 MAG Transportation Improvement Program contain \$1,440,000 in FY 2007 CMAQ funding to encourage the purchase and utilization of PM-10 certified street sweepers. The purpose of the CMAQ program is to fund projects and programs in nonattainment and maintenance areas that assist in achieving air quality standards. On August 11, 2006, MAG solicited PM-10 certified street sweeper projects from member agencies in the Maricopa County PM-10 Nonattainment Area. Eligible street sweepers are defined as those which have been certified by the South Coast Air Quality Management District as meeting that agency's Rule 1186 certification standards. Projects requests were due by September 8, 2006.

EVALUATION AND PROJECT RANKING

MAG staff estimated the emission reductions and cost-effectiveness using CMAQ funding requested, based on the methodology contained in the Methodologies for Evaluating Congestion

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Mitigation and Air Quality Improvement Projects, August 15, 2005. Federal CMAQ guidance requires that the estimated emission reductions for each project submitted for CMAQ funding be considered during project selection. The FY 2007 PM-10 Certified Street Sweeper Project requests, evaluation, and supplemental information are provided in the attachment. The proposed projects have been listed in ascending order of cost-effectiveness based on the amount of CMAQ funding requested. In addition, proposed projects that will be sweeping within one-half mile of a PM-10 monitor are shaded in the attachment.

Following consideration of this information, the MAG Air Quality Technical Advisory Committee will be requested to make a recommendation on a prioritized list of proposed projects for FY 2007 CMAQ funding to the MAG Management Committee. After the MAG Regional Council approval of projects for funding, MAG will issue a formal notification to proceed with the purchase of the proposed street sweepers in a letter to the project sponsor. It is important to note that the project ranking will be retained for any additional FY 2007 CMAQ funds that may become available due to year-end closeout, including any redistributed obligation authority or additional funding received by this region.

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

Attachment

# List of Proposed PM-10 Certified Street Sweeper Projects for FY 2007 CMAQ Funding

\$1,440,000 available in FY 2007 of the FY 2007-2011 MAG Transportation Improvement Program

Supplemental Information													
Agency	Federal Cost	Local Cost	Total Cost	Daily Emission Reduction (Kilograms/day)	Cost-Effectiveness (CMAQ dollar cost per annual metric ton reduced)	The requested certified street sweeper will:			If project is to expand or increase sweeping frequency, have additional local resources been committed for staff or equipment to support the project?		Please indicate in what geographical area(s) the requested certified street sweeper will operate	Number of certified street sweepers your agency has already purchased.	Does the requested sweeper satisfy a commitment by your agency in the SIP?
						Replace	Expand	Increase Frequency	Yes	No			
Gilbert (#1)	\$172,627	\$10,435	\$183,062	324	\$208	✓			✓	No	Area of Elliot Rd., Val Vista Rd., Williams Field Rd., and western city limits.	7	No
Gilbert (#2)	\$172,627	\$10,435	\$183,062	325	\$208	✓			✓		Area of Baseline Rd., Higley Rd., Williams Field Rd., and Val Vista Rd.	7	No
Queen Creek	\$129,789	\$7,845	\$137,634	169	\$300		✓		✓		Town limits.	2	No
Cave Creek	\$132,310	\$44,103	\$176,413	80	\$647		✓		✓		Central area of Town including two major intersections.	0	Yes
Fountain Hills	\$180,000	\$20,000	\$200,000	106	\$662	✓			✓		Town limits.	1	Yes
Surprise	\$166,628	\$10,072	\$176,700	26	\$2,496	✓			✓		Citywide.	6	Yes
Chandler	\$164,464	\$9,941	\$174,405	17	\$3,699		✓		✓		Area generally of Germann Rd., McQueen Rd., Val Vista Rd., and Hunt Hwy.	8	Yes
Buckeye	\$169,001	\$12,813	\$181,815	15	\$4,303		✓		✓		Area of McDowell Rd. (Jackrabbit Trail to Sun Valley Pkwy) and Sun Valley Pkwy. (McDowell Rd. to 211 <sup>th</sup> Ave.)	2	Yes
<b>Subtotal</b>	<b>\$1,287,446</b>												
Litchfield Park	\$163,707	\$9,895	\$173,602	11	\$5,843		✓		✓		Area of 150 <sup>th</sup> Ave to Dysart Rd., Missouri Ave. to Indian School Rd.	1	Yes
Mesa -Falcon Field	\$141,450	\$8,550	\$150,000	6	\$9,948			✓		✓	Public roadways within McKellips Rd., Greenfield Rd., McDowell Rd., and Higley Rd.	0	Yes
Goodyear	\$164,782	\$9,960	\$174,743	5	\$13,824					✓	City boundaries from Dysart Rd. to Perryville Rd. and Camelback Rd. to Patterson Rd.	2	Yes
Mesa +	\$169,724	\$11,468	\$201,192	1	\$56,482				✓		Area of Price Rd. to Mesa Drive and north city limits to south city limits.	6	Yes
<b>Total</b>	<b>\$1,947,109</b>												

+ Proposed sweeper project for Mesa indicates sweeping within 1/2 mile of PM-10 monitor.