

July 28, 2015

TO: Members of the MAG Intelligent Transportation Systems Committee

FROM: Marshall Riegel, City of Phoenix, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday, August 5, 2015- **10:00 a.m.**  
MAG Office Building, 2<sup>nd</sup> Floor, Ironwood Room  
302 North First Avenue, Phoenix

The ITS Committee has been scheduled at the time and place noted above. Committee members or their proxies may attend **in person or by video conference or by telephone conference call**. Those attending by telephone conference call please contact MAG offices for conference call instructions.

Please park in the garage under the MAG building, bring your ticket, parking will be validated. For those using transit, Valley Metro/RPTA will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

In 1996, the Regional Council approved a simple majority quorum for all MAG advisory committees. If the ITS Committee does not meet the quorum requirement, members who have arrived at the meeting will be instructed a legal meeting cannot occur and subsequently be dismissed. Your attendance at the meeting is strongly encouraged.

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

If you have any questions regarding the meeting, please contact Sarath Joshua at (602) 254-6300.

## TENTATIVE AGENDA

	<u>COMMITTEE ACTION REQUESTED</u>
<p>1. <u>Call to Order</u></p> <p>For the August 5, 2015 meeting, the quorum requirement is 10 committee members.</p>	
<p>2. <u>Approval of the June 3, 2015 ITS Committee Meeting Minutes</u></p>	<p>2. Review and approve minutes of the meeting held on June 3, 2015.</p>
<p>3. <u>Call to Audience</u></p> <p>An opportunity will be provided to members of the public to address the ITS 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 ITS Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity when the item is heard.</p>	<p>3. For information and discussion.</p>
<p>4. <u>Program Managers Report</u></p> <p>The following items will be discussed:</p> <ul style="list-style-type: none"><li>• Status of TSOP Projects</li><li>• Update on the Emergency Vehicle Pre-emption (EVP) Study</li><li>• Status Report on the RCN</li></ul>	<p>4. For information and discussion.</p>
<p>5. <u>Project Initiation Pool</u></p> <p>MAG has initiated a small three-year pilot program to help encourage member agencies to start early on the project development process with ADOT, for projects already programmed in the TIP. Eligible projects would receive \$2,829 in Federal funds with a \$171 local match. These funds provided to ADOT would allow ADOT staff to begin project review, assign project numbers, hold a kickoff meeting etc.</p>	<p>5. For information and discussion.</p>

The need for an earlier start is highlighted by the fact that project submission deadlines have been moved up by ADOT. An earlier start would enable projects to be reviewed and any issues resolved, allowing agency staff time to assist in developing the IGA through ADOT. This would help the region ensure that all programmed federal funds are obligated each year for an efficient closeout process. An overview of the pilot program will be provided by MAG staff.

6. TIP Call for Projects, Review of Project Application Form and Project Evaluation Process

A MAG call for projects is anticipated in early August, to program new projects in the FY2016-2020 TIP. A total of \$3.68million in CMAQ funds is available for qualifying ITS projects in FY2018 and FY2019. The TIP Project Application Form and Project Evaluation Process have been updated in preparation for this call for projects. Staff will provide a review of the revised TIP application form for ITS projects and the planned project evaluation process. As discussed at the June 2015 meeting, the revised application will include the Working Group recommendations for incorporating safety considerations in future ITS projects. committee. An overview of the project evaluation process and planned timeline will also be provided.

7. Update on the I-10/I-17 Spine Project Concept of Operations

An update will be provided on the Concept of Operations that is being developed for the I-10/I-17 Spine project's first phase of Active Traffic Management implementation on the 14-mile stretch of I-17 from the I-10 Stack interchange to SR101L North Stack interchange. This phase of the ATM project will be limited to the implementation of Variable Speed Limits (VSL), lane control signs and wrong-way ramp entry detection.

6. For information and discussion.

7. For information and discussion.

8. Reports by Committee Members

Members will be provided an opportunity to share information related to ongoing ITS activities in their jurisdictions.

9. Request for Future Agenda Items

Topics or issues of interest that members of the committee would like to have considered for discussion at a future meeting will be requested.

10. Next Meeting Date and Place

The next meeting is scheduled to be held at 10:00 a.m. on Wednesday, September 2, 2015. It will be held in the Ironwood Room on the 2<sup>nd</sup> Floor of the MAG office building.

Adjournment

8. For information and discussion.

9. For information and discussion.

10. For information.

**DRAFT MINUTES OF THE  
MARICOPA ASSOCIATION OF GOVERNMENTS  
INTELLIGENT TRANSPORTATION SYSTEMS COMMITTEE**

June 3, 2015

MAG Ironwood Room, 2nd Floor  
302 North First Avenue  
Phoenix, Arizona

MEMBERS ATTENDING

- |   |   |
|---|---|
| * Reza Karimvand, ADOT<br>Yingyan Lou, ASU<br>Chris Hamilton, City of Avondale  | # Hugh Bigalk for Luke Albert, City of<br>Goodyear<br>Clem Ligocki for Nicolaas Swart,<br>Maricopa County<br>Avery Rhodes, City of Mesa   |
| * Chris Lemka, City of Buckeye<br>Mike Mah, City of Chandler<br>Captain Burley Copeland, DPS<br>Bryce Christo, City of El Mirage      | # Ron Amaya, City of Peoria<br>Marshall Riegel, City of Phoenix<br>Steve Ramsey, City of Scottsdale<br>Albert Garcia, City of Surprise<br>Catherine Hollow, City of Tempe<br>Amanda Luecker, Valley Metro |
| # Jennifer Brown for Toni Whitfield,<br>FHWA<br>Leslie Bubke, Town of Gilbert<br>Allan Galicia for Debbie Albert, City of<br>Glendale |   |

OTHERS PRESENT

- |   |  |
|---|--|
| David Lucas, City of Tempe<br>Raquel Shatz, City of Apache Junction<br>Jeff Jenq, OZ Engineering<br>Srini Goundla, PB<br>Jim Schoen, Kittelson<br>Paul Porell, RTE<br>Don Wiltshire, YSMA<br>Doug McCants, Horrocks | Don Tappendorf, TEC<br>Dan Hartig, Ayres<br>Tim Wolfe, Dibble<br>Arnab Gupta, AECOM<br>Margaret Boone, MAG<br>Ryan Gish, MAG<br>Micah Henry, MAG<br>Eric Nava, MAG |
|---|--|

- \* Not present or represented by proxy
- # Participated by teleconference
- + Participated by videoconference

1. Call to Order  
Chair Catherine Hollow called the meeting to order at 10:00 a.m.
  
2. Approval of the May 6, 2015 ITS Meeting Minutes  
Chair Hollow requested approval of the meeting minutes from the May 6<sup>th</sup> ITS Committee meeting. **Albert Garcia from City of Surprise moved, Leslie Bubke from Town of Gilbert seconded and it was unanimously carried to approve the minutes of the meeting held on May 6, 2015.**

3. Call to Audience

Chair Hollow made a call to the audience providing an opportunity for any members of the public to address the ITS Committee. No comments were received.

4. Program Manager's Report

Chair Hollow invited Margaret Boone from MAG to present the Program Manager's Report. Representing MAG in place of Sarath Joshua, Ms. Boone addressed the following items in his report:

➤ Current Status of TSOP Projects:

For Fiscal Year 2014, of a total of 11 TSOP projects at a contracted cost of \$338,000, nine have been completed and two projects are on-going. The two ICM projects on I-10 in Phoenix are in the final stages and scheduled to be completed by end of June 2015. This will conclude the efforts on all 2014 projects. The FY2015 TSOP projects include 11 projects for a total cost of \$302,227. All projects are under way and near completion with the exception of the I-10 Integrated Corridor Management (ICM) project for I-10 from 35<sup>th</sup> Avenue to 83<sup>rd</sup> Avenue which has been delayed until completion of the current FY2014 I-10 ICM projects. The SYNCHRO training workshop is scheduled for June 9<sup>th</sup> through June 11<sup>th</sup> from 8:30 AM to 5:00 PM at the MCDOT Training Facility and all available seats have been reserved.

➤ There was no update on the RCN.

➤ Vice Chair Nominations

Chair Hollow's term concludes at the end of June 2015. Current Vice-Chair Marshall Riegel will become Chair, vacating the Vice-Chair position. MAG solicited letters of interest for the Vice-Chair position and received one nomination for Chris Hamilton with City of Avondale. The nomination will go before the Regional Council Executive Committee on June 15, 2015. The new Chair and Vice Chair will begin duties as of the July ITS Committee meeting.

5. I-17 Active Traffic Management Project

Chair Hollow invited Bob Hazlett from MAG to present the update on the I-17 Active Traffic Management Project. The update was on the grant proposal, submitted by MAG, for a Round 7 USDOT TIGER Grant. The ITS component of the proposed grant funded project would include Active Traffic Management (ATM). This information has also been presented to the Regional Council and Management Committee.

Mr. Hazlett explained that staff at MAG, ADOT and a few member agencies had recently participated in a presentation by VicRoads representatives on the deployment of Active Transportation and Demand Management (ATDM) strategies in Melbourne, Australia. The VicRoads team displayed a very impressive array of technology applications as part of their ATDM deployment in Melbourne, including corridor ramp metering, Variable Speed Limits (VSL), DMSs that display color coded travel times. A crucial governing criteria referred to by the VicRoads representatives was that freeway operations was considered their highest priority. Therefore, the system is managed at all times to provide the highest level of performance on the freeways.

Mr. Hazlett explained that since 1985 more than \$11B has been invested in the Valley's freeway infrastructure producing nearly \$66B of economic benefits. MAG plans to implement ATM components identified in the TIGER grant application to improve efficiency of the freeway corridor. ADOT has proposed Near Term Improvement Strategies for the I-17 segment of the I-10/I-17 Spine Corridor. The proposed ATM System seeks to reduce potential crashes when speed and conditions change, reduces congestion with variable speed limits (VSL), lane controls, improve reliability and provide enhanced information to motorists, provide meaningful traffic flow benefits at a relatively low cost, and coordinate with local communities. The VSL signs would replace static speed limit signs.

The goal of the I-17/I-10 near Term Improvement Strategy is to improve traffic flow on the freeway through ATM to increase the flow beyond the current 1400 vphpl flow rate. In increasing the flow rate the capacity of the freeway would improve without construction of additional lanes and ROW takes. Additional freeway capacity would also improve adjacent arterial operations by returning demand to the freeway network. The ATM strategies will improve the flow rate and achieve these desirable improvements.

The improvements in safety would also be a benefit of ATM deployment. The VicRoads team reported that crashes were reduced by 30 percent. The Australian system has deployed messages on DMS saying, "Slowing down does not kill you." Their system is experiencing good compliance rates by freeway drivers.

The TIGER grant proposal consisted of several components. The ATM development that is focused on providing for VSL. The ATM deployment will require around 60 new gantries along the freeway corridor with VSL and lane control. The second component is for wrong-way driver detection infrastructure for I-17 between the I-10 Stack and Loop 101 North Stack traffic interchanges. Supplemental DMS will convey information to motorists describing reasons for changes and alerts. Another part of the proposal is to provide for the development of a bus ramp between I-10/Papago and Van Buren Street in the Stack interchange to improve travel times. The ultimate alignment would accommodate the Light Rail expansion.

The TIGER grant must be obligated by June 2017. The grant application is due Friday, June 5<sup>th</sup>. The consultant HDR is working with MAG and Valley Metro to develop the grant application. The TIGER award announcements will be in the fall. As the funds have already been set aside for VSL and wrong-way detection, additional funding through a successful TIGER grant application would release funds for other projects in the program. If the grant is successful the project would advance two years in the program, with potential operations by 2019.

6. Air Quality Overview of the Evaluation Process for Congestion Mitigation and Air Quality Improvement (CMAQ) Program, ITS Applications

Chair Hollow invited Teri Kennedy and Dean Giles with MAG to discuss the development of the schedule and application process leading up to the Call for Projects anticipated this August. Air quality is going to play a vital role in the evaluation & score for the prioritization of CMAQ funded projects. The schedule will be announced in August, including the Call for Projects, deadline for applications, evaluation process, and selection, with final approval from Regional Council. The years under consideration include 2018, 2019, and 2020 for ITS projects.

The CMAQ Program has been reauthorized as part of Moving Ahead for Progress in the 21st Century (MAP 21) Act. The purpose is to fund transportation projects and programs that will contribute to attainment or maintenance of the federal air quality standards for ozone, carbon monoxide, and particulate matter (PM-10, PM-2.5). MAP-21 continues the requirement for MPOs to give priority to cost-effective projects.

FHWA published Interim Program Guidance in 2013. For ITS projects, eligible activities include: traditional traffic flow improvements and ITS projects such as traffic signal synchronization, intersection improvements, traffic management, traveler information systems, and freeway management systems. To be identified in the project application, proposals for CMAQ funding should include a precise description of the project (e.g. information on its size, scope, location, and timetable). Assessment of the project's expected emission reduction benefits and cost-effectiveness should be completed prior to project selection to better inform the selection of CMAQ projects.

MAG first developed the CMAQ Methodologies in 1999 and updated it in 2011, including methodologies for ITS projects. The methodology quantifies proposed project emission reductions in kilograms per day and identifies cost-effectiveness for projects in dollars per metric ton of emissions reduced annually.

The emissions benefit calculations provide reductions in carbon monoxide (CO), total organic gases (TOG), nitrogen oxides (NO<sub>x</sub>), and particulate matter (PM) emissions in kilograms per day. MAG applies the EPA-approved emissions model MOVES2014 to obtain emission rates. Emission rates are calculated for the first year that the project is implemented. These calculations include seasonal adjustments and priority weights.

Following the calculation of emission reductions and application of seasonal factors and weights, the methodology then converts emission reductions to metric tons per year, amortizes CMAQ cost over the life of the project, divides the annualized CMAQ cost by the annual emissions reduction to obtain cost-effectiveness (in dollars per metric ton).

Emission benefits from Traffic Signal Optimization Projects include the reduction in vehicle delay and increase in speeds. The project application provides inputs to the emission reduction calculation, where the application will identify the CMAQ funding requested, length of project in miles, average weekday traffic, pre-project speed, and post-project speed from Table 6 in MAG CMAQ Methodologies.

ITS components are typically implemented over a period of years in the TIP as funding becomes available. MAG ITS Program staff will assign ITS components to the appropriate project group based on the common geographic area (corridor, city-wide, or regionally). The components are analyzed as one project such that emissions benefits from the components with the maximum benefit within the project will be allocated to components in the same project group based on vehicle miles of travel.

The Freeway Management System projects improve traffic flow and reduces congestion and vehicle idling. The project application provides inputs to the emission reduction and cost-effectiveness calculation. For these types of projects it will be necessary to identify CMAQ funding being requested, length of project in miles, and whether the project includes ramp metering.

Calculation of emission reductions associated with FMS projects will be based on the estimated vehicle miles of travel, the assumption of weekday and weekend speeds from MAG 2011 Speed Study and 2011 MAG Non-Recurring Congestion Study, MOVES2014 emission rates for freeways, the sum of emissions reductions associated with the project for peak and off-peak periods for recurring, non-recurring, and weekend congestion, and the Calculate Capital Recovery Factor and Cost-Effectiveness.

7. Incorporation of Safety Considerations in ITS Project Evaluation

Chair Hollow invited Margaret Boone with MAG to discuss the inclusion of safety considerations in the ITS project evaluation. MAG has started an effort to incorporate safety considerations in all projects programmed in the TIP. For the next TIP programming cycle that will begin in August, for projects in FY2018 and FY2019, safety needs to be added as an evaluation factor. A working group made up of agency staff and MAG staff is leading the effort with a focus on developing safety criteria. This effort is being coordinated with various technical committees and the Transportation Safety Committee.

The ITS Working Group met on May 28<sup>th</sup> and achieved the following:

- Reviewed project types from the previous CMAQ ITS cycle.
- Discussed possible safety evaluation criteria, including qualitative measures for each.
- Reviewed compliance and consistency with the MAG ITS Strategic Plan and MAG Draft Strategic Transportation Safety Plan.
- Discussed the potential point structure.
- Established the goal to provide the ITS Committee with clear safety evaluation guidance.

The Working Group established a potential methodology for identifying safety aspects for projects, including qualitative measures, percent safety related, maximum points allocated for those qualitative measures using the potential safety implication of the project identified, evaluation guidance for point allocation, and any additional resources used to document the review. The lack of data can lead to the subjective nature of assigning points to a qualitative measure, but the solution does provide direction for the project evaluation.

Mike Mah with Chandler inquired on the safety percentage relative to the other scoring elements for the ITS project, for example congestion mitigation and air quality. The Working Group has developed percentages in an initial effort to identify qualitative measures for the safety aspects of the projects. Further review and discussion are necessary for refining those percentages. Each of the scoring components will be weighted in some manner; this will be addressed at the next ITS Committee meeting during the CMP discussion. It will be necessary to develop a balance between the scoring components.

Clem Ligocki with Maricopa County inquired on the Working Group's definition of safety benefits. Defining safety benefits is a challenge for ITS projects; some ITS applications result in clearly accessible data related to safety while others result in more intangible safety benefits. For some ITS projects, the safety benefits will be subjective due to the lack of explicit data. This is the challenge that the Working Group will have in establishing safety criteria for ITS projects. As of the current effort the safety

percentages are working values and feedback from committee members is desired.

The methodology being developed by the Working Group is the first effort at MAG to allocate evaluation points to an ITS project with respect to the safety aspects, and it can still be modified. The objective of the methodology is to aggregate the safety points such that the projects contain safety aspects that sum to the 20% goal of the ITS Strategic Plan. MAG staff will provide the recommended safety matrix at the July meeting for review and comment. MAG staff is soliciting comments based on this presentation and the materials provided to the committee. Comments by Committee members should be submitted by Thursday, June 18<sup>th</sup>.

8. Reports by Committee Members

Chair Hollow called on members to report items of interest to the committee. Yingyan Lou with ASU stated that the university is working with City of Tempe and MAG to establish video feeds for the new transportation lab that is being planned and constructed for the fall. Allan Galicia stated that City of Glendale received final acceptance from ADOT for the Peoria Avenue Downtown DMS completed project. Kick-off meetings are scheduled for three of the city's design projects. Leslie Bubke with Town of Gilbert thanked Cathy Hollow for her service as Chair of the ITS Committee.

9. Request for Future Agenda Items

Chair Hollow called on members to request future agenda items. There were no requests.

10. Next Meeting Date and Place

Next meeting date was announced at 10:00 a.m. on Wednesday, July 1, 2015, in the Ironwood Room (2<sup>nd</sup> floor) at MAG.

11. Adjournment

Chair Catherine Hollow adjourned the meeting at 11:07 a.m.