

May 26, 2015

TO: Members of the MAG Intelligent Transportation Systems Committee

FROM: Catherine Hollow, City of Tempe, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday, June 3, 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>
1. <u>Call to Order</u>  For the June 3, 2015 meeting, the quorum requirement is 10 committee members.	
2. <u>Approval of the May 6, 2015 ITS Committee Meeting Minutes</u>	2. Review and approve minutes of the meeting held on May 6, 2015.
3. <u>Call to Audience</u>  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.	3. For information and discussion.
4. <u>Program Managers Report</u>  The following items will be discussed: <ul style="list-style-type: none"><li>• Status of TSOP Projects</li><li>• Status Report on the RCN</li></ul>	4. For information and discussion.
5. <u>I-17 Active Traffic Management Project</u>  A project has been initiated by ADOT and MAG to implement Active Traffic Management (ATM) strategies, along a 14-mile stretch of I-17 from the I-10 Stack interchange to SR101L North Stack interchange. This project has replaced the previously planned I-10/I-17 Corridor Near Term ITS Improvements, that was based on a recommendation by the committee in December 2013. The first phase of the ATM project will implement Variable Speed Limits (VSL), lane control signs and wrong-	5. For information and discussion.

way ramp entry detection. A brief presentation will be provided by Bob Hazlett from MAG on the I-17 ATM project.

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

The Air Quality evaluation and scores play a vital part in the overall prioritization of CMAQ funded projects. MAG is beginning development of the schedule and application process prior to issuing a Call For Projects expected this August. At the meeting Dean Giles from the MAG environmental staff will provide an overview on how air quality evaluations are completed, and the relative meaning that the scores and ranking have on air quality so that members may consider these important factors during their project application development prior to submitting applications to MAG.

7. Incorporation of Safety Considerations in ITS Project Evaluation

A number of committee members have volunteered to serve on a Working Group to help modify the current ITS project evaluation methodology by adding safety as an evaluation factor. This is part of an effort by MAG to incorporate safety considerations in all projects programmed in the TIP. A brief report will be provided by Margaret Boone from the MAG Safety staff and members of the Group on this activity.

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.

6. For information and discussion.

7. For information and discussion.

8. For information and discussion.

9. For information and discussion.

10. Next Meeting Date and Place

The next meeting is scheduled to be held at 10:00 a.m. on Wednesday, July 1, 2015. It will be held in the Ironwood Room on the 2<sup>nd</sup> Floor of the MAG office building.

Adjournment

10. For information.

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

May 6, 2015

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

**MEMBERS ATTENDING**

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

**OTHERS PRESENT**

Arthur Dock, City of Mesa	Doug McCants, Horrocks
David Lucas, City of Tempe	Don Tappendorf, TEC
Raquel Shatz, City of Apache Junction	Dan Hartig, Ayres
Jeff Jenq, OZ Engineering	Arnab Gupta, PB
Lisa Burgess, Kimley-Horn	Monique de los Rios Urban, MAG
Suzy Chambers, Dibble	Ryan Gish, MAG
Paul Porell, RTE	Micah Henry, MAG
Don Wiltshire, YSMA	Sarath Joshua, MAG
Don Tappendorf, TEC	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 April 1, 2015 ITS Meeting Minutes  
Chair Hollow requested approval of the meeting minutes from the April 1<sup>st</sup> ITS Committee meeting. Yingyan Lou with ASU identified the correction for the \$338,000 for the FY2014 TSOP task orders. **With the correction Reza Karimvand from ADOT moved, Albert Garcia from City of Surprise seconded and it was unanimously carried to approve the minutes of the meeting held on April 1, 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 Sarath Joshua from MAG to present the Program Manager's Report. Mr. Joshua 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 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. Except for one project, all are under way. The I-10 Integrated Corridor Management (ICM) project for I-10 from 35<sup>th</sup> Avenue to 83<sup>rd</sup> Avenue has been delayed until the current ICM projects are completed. 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.

➤ FHWA Grant for ICM Deployment Planning

A kickoff meeting was held with FHWA officials and local stakeholders on April 21<sup>st</sup>. The scope of work and project schedule (24 months) has been submitted to ADOT for official authorization of funds totaling \$200,000. The MAG FY2015 Work Program has been amended to add a new work item and on-call projects. The next steps for the project include receiving FHWA/ADOT authorization of grant funds and then issuing task orders to begin work.

➤ A Simulation Model for Evaluating Active Traffic Management

FHWA sponsored a research project to develop simulation tools. The Project Team is headed by Booz Allen Hamilton Inc. with ASU as a subcontractor. The ASU research team includes professors Pitu Mirchandani and Xuesong Zhou. The project involves using the Phoenix region as a basis for the network test bed. There is potential that tools developed out of this project will be available for the MAG region.

➤ Active Transportation Demand Management Workshop – April 22, 2015

MAG hosted the all-day workshop sponsored by FHWA including peers from Washington State DOT and Patrol. Nearly 40 people attended the workshop which included a focus on preparation for the upcoming I-17 ATM project. The workshop came about from the I-10 Spine project and included a focus on implementation of variable speed limits. This workshop was held to provide staff at local agencies with an opportunity to learn more about ATM. The need for this workshop was identified by FHWA due to the shift in focus of implementing ITS solutions along I-10/I-17 on the Spine project, from the list of incremental ITS improvements recommended by the committee to one single Active Traffic Management project in the I-17 corridor, from the stack to Loop 101.

➤ Letters of Interest for Vice Chair

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 is accepting letters of interest for the Vice-Chair position. Letters should be addressed to Mayor Michael LeVault, MAG Chair at MAG Office, 302 N. 1<sup>st</sup> Avenue, Suite 300, Phoenix, AZ 85003. The appointment will be made by the Regional Council Executive Committee for a 2-year term. Interested parties must submit letters of interest by June 1, 2015.

➤ Safety Factor in TIP Project Evaluation

MAG has started an effort to incorporate safety considerations in ALL projects programmed in the TIP. A working group made up of agency staff and MAG staff is leading the effort. For the next TIP programming cycle in August for projects in FY2018 and FY2019, safety needs to be added as an evaluation factor. MAG is establishing the Working Group to oversee this objective in order to develop recommendations by the end of June. MAG staff is soliciting volunteers to be members of the Working Group for up to 2 meetings. Volunteers are asked to submit inquiries by Friday, May 8<sup>th</sup>.

➤ VicRoads Presentation

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 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, VSL, DMSs that display color coded travel times. MAG will attempt to get this presentation and forward it to the ITS Committee.

➤ MAG ITS Committee Quorum Review

In response to a question raised by Vice Chair Reigel, Sarath Joshua explained that half of committee membership needs to be present in order to meet the quorum. Should a committee member be absent for 3 consecutive meetings without any representation or proxy, their requirement for quorum is deferred until the committee member resumes attending meetings.

5. EVP Study – Best Practices Review

Chair Hollow invited Micah Henry from MAG to present the update on the Emergency Vehicle Preemption Best Practices Study. The Project Team is concluding the research component of the project and has delivered Tech Memo No. 3 for review by the TAG and ITS Committee members. The Project Team is preparing the potential draft recommendations for the final report.

Jeff Jenq with OZ Engineering presented Tech Memo No. 3 – Emergency Vehicle Preemption (EVP) Best Practices. The focus was on three aspects of EVP: system compatibility, system management, and preemption treatment. For system compatibility the Project Team reviewed Chittenden County (Vermont) MPO's single system platform with encoding, FAST (Nevada) and the single system platform with encoding, and Harris County (Texas) and the alternative system implementation. For EVP system management the Project Team showcased the East Valley EVP Working Group. For preemption treatment the team reviewed Minnesota's deployment practices including confirmation lights and state MUTCD requirements.

The primary issue in regional operation is the system compatibility conflicts between adjacent agencies. With no regional agreements in place, jurisdictions over time deployed different systems. The incompatibility as it relates to encoding the preemption signals prevents responders from being able to activate EVP in some adjacent jurisdictions. The mutual aid aspect has made this issue a primary concern for the region.

In Chittenden County the MPO has established a solution of a single proprietary system through planning efforts. In 2006 they selected Tomar for the single technology platform. For the greater Las Vegas region FAST operates arterial and freeway operations. FAST also selected a single proprietary system for deployment, selecting GTT. The greater metropolitan region of Houston is governed by Harris County, who instituted GPS technologies for EVP by E-Views.

For EVP system management advanced communications systems allow for data capture and analysis based on activation history. This is facilitated through encoding. The analysis allows for review of the data logger to aid in troubleshooting and usage monitoring. The East Valley EVP Working Group was identified as the best practice. Minnesota adopted the MUTCD for state deployment to include EVP. This established EVP standards including optical emitter frequencies for high and low priorities, confirmation indicator lights, and preemption traffic signal phase and confirmatory light status for different traffic signal control scenarios.

The forthcoming Draft Report for Recommendations for Improving EVP includes an overview of the research conducted for the project, the best practices, currently deployed EVP technologies in the Valley, and proposed recommendations. The regional options will be focused on addressing the system compatibility issues and the preemption signal phase and confirmation light operations.

For system compatibility the first option includes reverting EVP operations to un-encoded preemption detection. This is the cheapest solution but not desired by member agencies. System management would be impossible and rogue emitters would be accepted creating potential signal coordination issues. The second option is to agree to select one system for regional deployment and update the existing systems to comply. This is potentially costly as it would require retrofitting many intersections, decommissioning equipment, and purchasing and installing new equipment for roughly half of the region. The third option is a hybrid solution to deploy dual emitters on emergency vehicles to be compatible with both Tomar and GTT systems and retain the encoding convention developed by the East Valley EVP Working Group. The third option is recommendation by the Project Team as an interim solution.

For the preemption signal phase and confirmation light operations, the proposed recommendation is for deployment of confirmation lights for each approach. The signal phase operation under preemption will be concurrent through phases, providing green ball indications for the approaching emergency vehicle and the opposing through movement. The approaching emergency vehicle will receive a solid confirmation light indication while the other approaches will receive a flashing confirmation light indication. The confirmation lights would reflect the preemption phase being enacted by the intersection controller, not the preemption detector. The lights would also indicate the preemption status of the controller to other preemption users. If a second emergency

vehicle was approaching an intersection from a different direction, the flashing confirmation light would indicate that the second vehicle does not have priority in the preemption operations at the intersection. This solution requires deployment of equipment and wiring to be retrofitted in existing traffic signal equipment and might be expensive to install and maintain.

Mike Mah with Chandler stated that Tomar recently released GTT-compatible devices, both emitters and detectors. This technology could influence how disparate agencies could resolve system compatibility issues. Jeff Jenq confirmed that the available technology was due to expiring patents, allowing Tomar to produce generic devices compatible with GTT systems. The new technology still requires separate systems for use and system compatibility remains an issue. As conversion costs are a major factor, this could influence the recommendations.

A study recommendation involves determining the implementation approach through a consensus-building process. Using the workshop format system users, operators and maintenance staff can come to agreement on system compatibility and preemption signal phase and confirmation light indications. Potential stakeholders include representatives of the fire department, agency traffic engineers, and signal maintenance technicians. Providing regional guidance for future deployment, the workshop can establish roles and responsibilities as well as short-term and long-term goals. The goal of the study is to develop a unified vision for EVP deployment in the region and potential solutions, both short-term and long-term, to achieve the vision.

Cathy Hollow recommended that deployment costs be included in some aspect of the study. Should solutions involve purchasing new technologies, a unit cost may help agencies identify potential costs for agency-wide deployment. It will be a challenge for agencies to maintain additional equipment at intersections.

Micah Henry invited Arthur Dock from the City of Mesa to comment on the presentation. He has requested information from the system vendors on the option of emitting multiple codes from the same device for system compatibility. Tomar technology currently allows for emitters to send GTT-system compatible codes. Tomar is also developing drop-in replacement cards for the optical-based system. Mr Dock reported that the East Valley EVP Working Group has attempted to address the issues of preemption signal phasing in the past, and the perspective has changed as preemption champions have left participating agencies. Mr. Dock recommended reviewing available safety data as well as identifying what works best for emergency vehicle preemption system users. Sarath Joshua stated that crash data were recently reviewed to specifically identify fire trucks involved in crashes. Crash data does not include any information regarding the signal phasing at the intersection at the time of the crash.

Regarding the origins of the need for the study, confirmation lights are a common-sense component absent from the region's existing operations. This seems to be a non-controversial issue that can be addressed. Although deployed in Minnesota, other regions of the United States have used similar technologies for confirmation lights including strobes and beacons.

Allan Galicia with City of Glendale proposed that the signal phasing be uniform throughout the valley. The confirmation light should also be a uniform standard, where

one approach receives the steady confirmation indication and all other approaches receive a flashing confirmation indication. Avery Rhodes with City of Mesa disagreed stating that individual agencies should maintain control of signal phasing and preemption treatments. Users should not try to predict signal phasing.

6. Request for ITS Project Change

Chair Hollow stated that this item has been removed from the agenda at the request of City of Scottsdale.

7. Status of TIP Arterial ITS Projects in FY2015 & FY2016

Chair Hollow invited Sarath Joshua with MAG to discuss FY2015 and FY2016 ITS projects. He stated that MAG requires a periodic status reports to the committee on current projects. Chair Hollow called upon member agencies to provide brief verbal reports on each project listed in Attachment Two.

The following reports were provided on FY2015 projects:

- ADOT FMS Phase 11A – this project is currently underway.
- Apache Junction ITS Strategic Plan – the JPA has been executed and the scope has been finalized. ADOT and the consultant will be signing the contract.
- Avondale Dysart Fiber Backbone – the JPA is completed and the project is in the final stages in preparation for advertisement.
- Chandler Controller Firmware Upgrade – no update.
- Goodyear TMC Monitoring Expansion – 100% plans have been received and is ready for advertisement.
- Maricopa County Bell Road Adaptive Signal Control System – final stages of the design and on schedule in submitting the obligation request
- Mesa Radio Tower Access Points Installation – ROW clearances are almost complete, specifications are underway, and the procurement process is under review.
- Phoenix 7<sup>th</sup> St. & 7<sup>th</sup> Ave. DMS Installation – project is in design and on schedule.
- Phoenix 7<sup>th</sup> St. & 7<sup>th</sup> Ave. CCTV Camera Installation – project is being deferred.
- Scottsdale HAR Installation – project was deleted.
- Tempe Communications Upgrade and CCTV Camera Installation – submitting for obligation to go into construction next Fall.
- El Mirage Traffic Signal Enhancements – project was awarded and pre-construction meeting is scheduled.
- Gilbert Fiber and ITS Installation – no update.
- Goodyear Communications and ITS Installation – 100% plans are ready and environment clearance is under review, schedule to be advertised this summer.
- Peoria Communications Infrastructure & CCTV Camera Installation – in the end of construction phase and will be completed by the beginning of this summer.
- Peoria Traffic Signal Communications Design – in the design phase, clearances have been received and IGA is established.
- Tempe Fiber and ITS Installation – ready to obligate.

Reports on projects in FY2016:

- Chandler Flashing Yellow Arrows Installation – no update.
- Gilbert Communications, Traffic Controllers and CCTV Cameras Upgrades

Segment #1 – no update.

- Gilbert Communications, Traffic Controllers and CCTV Cameras Upgrades Segment #2 – no update.
- Glendale Communication and CCTV Cameras Installation – consultants have been selected for design and kick-off has been scheduled.
- Glendale Count and Travel Time Data Collection Installation – consultants have been selected for design and kick-off has been scheduled.
- Mesa Travel Time and Speed Monitoring Device Installation – underway with ROW clearances, design plans and system engineering are on-going.
- Mesa 9-1-1 CAD and RADS Interface – Mesa Engineering Department is performing the work and is coordinating with stakeholders.
- Peoria Traffic Signal/TMC Communication Installation – IGA and ROW clearances have been established and design is on-going.
- Scottsdale Traffic Signal Cabinet Replacement – under review.
- Tempe Rural Rd. Fiber Installation – design contract to be reviewed by council on May 21<sup>st</sup> and design will begin following acceptance.
- Glendale Communications Equipment and CCTV Camera Installation – received environment clearance and 95% plans will be submitted.

8. Reports by Committee Members

Chair Hollow called on members to report items of interest to the committee. There were no reports.

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, June 3, 2015, in the Ironwood Room (2<sup>nd</sup> floor) at MAG.

11. Adjournment

Chair Catherine Hollow adjourned the meeting at 11:30 a.m.