

## ITS PROJECT APPLICATION FORM FY 2009-2013 TIP

**General Instructions:** This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2009-2013 MAG Transportation Improvement Program. Currently funding is available only for **FY 2013**.

Separate application forms are available for bicycle, pedestrian, air quality, and transit projects. Freeway, street and rail transit projects will be programmed in a separate process.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding. **PLEASE NOTE: Part C is only available electronically.** It is available at: <http://www.mag.maricopa.gov/project.cms?item=413>, or you can contact Leo Luo: [lluo@mag.maricopa.gov](mailto:lluo@mag.maricopa.gov), and he will send you the electronic file.

**Deadlines and Transmittal Instructions:** All sections should be completed and returned to MAG Offices by **5:00 p.m. September 7, 2007**. Please e-mail Judy Tadlock at MAG, [jtadlock@mag.maricopa.gov](mailto:jtadlock@mag.maricopa.gov) this application (Part A & B). Part C is only available electronically as noted above. Please e-mail Leo Luo the completed Part C, excel file to [lluo@mag.maricopa.gov](mailto:lluo@mag.maricopa.gov). The mailing address and FAX number for the MAG offices is:

ATTN: Judy Tadlock  
Maricopa Association of Governments  
302 North 1<sup>st</sup> Avenue, Suite 300  
Phoenix, Arizona 85003  
FAX Number: (602) 254-6490

**Electronic Download Information:** A downloadable version of these forms in Microsoft Word is available on the MAG website at <http://www.mag.maricopa.gov/project.cms?item=413>. If requested, MAG staff will also provide these forms via e-mail or FAX.

**MAG Contact Information:** If you have any questions, please contact Stephen Tate or Eileen Yazzie at (602) 254-6300 or at [state@mag.maricopa.gov](mailto:state@mag.maricopa.gov).

**Agency Contact Information:** Please complete the following contact information for each project, so that we may contact you should we need additional information.

<p>1. Name of the Agency Contact for the Project Request:</p> <p style="text-align: center;"><b>Faisal Saleem</b></p>	<p>2. Telephone:</p> <p style="text-align: center;"><b>602-506-1241</b></p>
<p>3. E-mail</p> <p style="text-align: center;"><b>faisalsaleem@mail.maricopa.gov</b></p>	<p>4. Date:</p> <p style="text-align: center;"><b>9/7/2007</b></p>

## ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP

### Part A: Project TIP Listing Information and Description

**Section One:** TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

**Maricopa County Department of Transportation**

2. Year (Please check box):

FY 2013

3. Project Location (The project limits if applicable):

**DMS installations in the EB and WB direction at each of the following intersections:**

- **McDowell Road and Avondale Boulevard**
- **McDowell Road and Estrella Parkway**
- **MC85 and Avondale Boulevard**
- **MC85 and Estrella Parkway**

4. Type of Work (Description of the work to be performed):

**Install Arterial DMS and associated conduit, pull boxes, fiber optic cable, communication equipment and electrical service equipment.**

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

**\$700,000**

6. Type of Federal Funds Requested (Please check box.):

MAG STP

CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

**\$300,000**

**Local match sharing:**

**MCDOT - \$100,000**

**City of Goodyear - \$100,000**

**City of Avondale - \$100,000**

8. Type of Local Funds to be Used: (Please check only one box.):

HURF

Impact Fees

General Fund

Bond Proceeds

Sales Tax

Private

Property Tax

Other, Please specify: \_\_\_\_\_

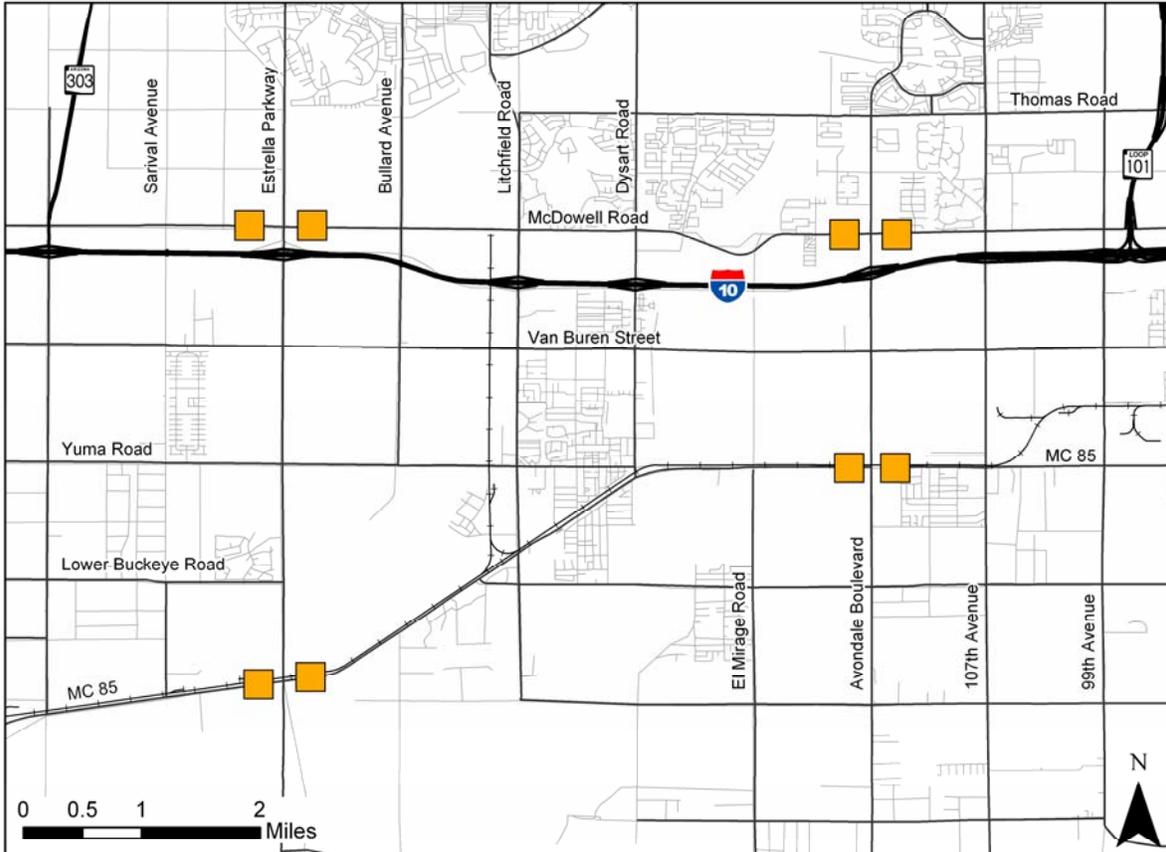
9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

**\$1,000,000**

# ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP

## Part A: Project TIP Listing Information and Description

10. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.



## ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP

### Part B: CMS and CMAQ Data

**General Instructions:** In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

#### Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

<p>1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type:</p> <p><b>Avg 8k on McDowell at Estrella Parkway</b></p> <p><b>Avg 20k on McDowell at Avondale Boulevard</b></p> <p><b>Avg 13k on MC 85 at Estrella Parkway</b></p> <p><b>Avg 22k on MC 85 at Avondale Boulevard</b></p>	<p>2. Name of the Roadway Section Used for the ADT Estimate:</p> <p><b>McDowell between Sarival and Bullard</b></p> <p><b>McDowell between Dysart and 107<sup>th</sup> Ave</b></p> <p><b>MC 85 between Sarival and Bullard</b></p> <p><b>MC 85 between El Mirage and 107<sup>th</sup> Ave</b></p>	<p>3. Type of Facility to be Improved (Check only <u>one</u> box):</p> <p><input type="checkbox"/> Arterial &gt; 4 legs (e.g. Grand)</p> <p><input checked="" type="checkbox"/> Arterial Street</p> <p><input type="checkbox"/> Collector Street</p> <p><input type="checkbox"/> Other</p>
<p>4. Number of <b>Through</b> Lanes Currently on the Facility Prior to Project Completion (Do <u>not</u> include right, left or center turn lanes):</p> <p><b>2 lanes on McDowell near Estrella Parkway</b></p> <p><b>2 lanes on MC 85 west of Estrella Parkway, 4 lanes east of Estrella Parkway</b></p> <p><b>4 lanes on McDowell and MC 85 near Avondale Boulevard</b></p>	<p>5. Number of <b>Through</b> Lanes on the Facility After the Project is Completed (Do <u>not</u> include auxiliary lanes):</p> <p><b>2 lanes on McDowell near Estrella Parkway</b></p> <p><b>2 lanes on MC 85 west of Estrella Parkway, 4 lanes east of Estrella Parkway</b></p> <p><b>4 lanes on McDowell and MC 85 near Avondale Boulevard</b></p>	<p>6. Length of the Facility (in miles):</p> <p style="text-align: center;"><b>N/A</b></p>
<p>7. Township Coordinate of the Midpoint of the Facility: <b>T1N</b></p>	<p>8. Range Coordinate of the Midpoint of the Facility: <b>R1W</b></p>	<p>9. Section Coordinate of the Midpoint of the Facility: <b>Multiple Sections</b></p>

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### Part B: CMS and CMAQ Data

10. If the project improves traffic signal coordination, please do the following: **N/A**

- a. Enter the pre-improvement (current) traffic speed of the traffic corridor:
- b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
<input type="checkbox"/> Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
<input type="checkbox"/> Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
<input type="checkbox"/> Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
<input type="checkbox"/> Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
<input type="checkbox"/> Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
<input type="checkbox"/> Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

11. Other Project Information: (Check as many as are applicable):

- Includes Traffic Signal Improvements for a Single Agency
- Includes Traffic Signal Improvements that Apply to More than One Agency
- Includes FMS Improvements
- The Project Conforms to Local Land Use Plans
- The facility is on the adopted MAG Roads of Regional Significance Network
- Adds Traffic Signals that increase pedestrian crossing time for seniors

12. Management System (Please check only one box)

- Congestion Management System (CMS)
- Bridge Management System (BMS)
- Pavement Management System (PMS)
- Public Transportation Management System (PTMS)
- Safety Management System (SMS)
- Intermodal Management System (IMS)
- Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

**MCDOT Priority #2**

## Part C: MAG Technical Committee Additional Information

This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding. **Part C is only available electronically. It is available at: <http://www.mag.maricopa.gov/project.cms?item=413>, or you can contact Leo Luo: [llo@mag.maricopa.gov](mailto:llo@mag.maricopa.gov), and he will send you the electronic file.**

### Contact Information

Please contact Sarath Joshua or Leo Luo at (602) 254-6300 or [sjoshua@mag.maricopa.gov](mailto:sjoshua@mag.maricopa.gov), [llo@mag.maricopa.gov](mailto:llo@mag.maricopa.gov) for additional information or questions.

**FY 2009 - 2013 TIP - Programming 2013  
MAG ITS Project Data Form**

Please enter project data **ONLY** in highlighted cells, save the file with the lead agency name in it - ie. Mesa ITS Projects.xls

Submit this Excel workbook to MAG via email to: [LLUO@MAG.MARICOPA.GOV](mailto:LLUO@MAG.MARICOPA.GOV)

Please use one worksheet per project, with the tab at the bottom indicating agency priority

Links to various websites are provided for additional information and help

The worksheet titled "Example" shows an example on how to enter Data in the highlighted areas. If errors are detected alerts will pop-up in **red text**.

The worksheet titled "HELP" shows how to figure out your project's ITS Subsystems & Architecture Flows

*Please enter required information in highlighted cells*

**A. Project Title & Sponsor**

<b>Lead Agency</b>	Maricopa County Department of Transportation
<b>Other Partnering Agencies</b>	City of Avondale and City of Goodyear
<b>ITS Project Title:</b>	West Valley Arterial Dynamic Message Sign Installations

**B. Project Goals & Objectives**

**Project Goals:**

The purpose of this project will be to install eight (8) arterial DMS at key locations on MC 85 and McDowell Road. These will be utilized to provide special event information, warn of incidents, provide alternate route information and notify motorists of other impacts in the corridor and the nearby highway corridors of Loop 101, Loop 303 and I-10

**Objectives:**

The objective of these installations are to aid in managing traffic conditions during events at PIR or in the city centers of Goodyear and Avondale, and to warn motorists of conditions on the arterial and other roadways in the vicinity. In addition, these roadways (MC 85 and McDowell Road) traverse



**Communications:**

Required communications medium for data sharing with other agencies: (if applicable)

From agency	To agency	data flow	Medium	Existing?	Future (year) mm/yyyy	Check Date with

<b><u>Arterial ITS applications</u></b>	<b>Relevant Applications (ENTER: Yes or No)</b>	<b><u>Applicable ITS User Services Addressed</u></b> <a href="http://www.iteris.com/itsarch/html/user/userserv.htm">http://www.iteris.com/itsarch/html/user/userserv.htm</a>	<b><u>Applicable ITS Market Packages</u></b> <a href="http://www.iteris.com/itsarch/html/mp/mpindex.htm">http://www.iteris.com/itsarch/html/mp/mpindex.htm</a>
<b>1. Traffic Management</b>	Yes	1.2, 1.7, 8.1	ATMS06, ATMS07, ATMS08, MC08
<b>2. Transit Operations Support</b>	No		
<b>3. Interagency Data Sharing and Control</b>	Yes	1.2, 1.6, 1.7	ATMS07, ATMS08
<b>4. Integrated Traveler Information</b>	Yes	1.2	ATMS06
<b>5. Archived Data Management</b>	No		
<b>6. Incident Management</b>	Yes	1.2, 5.3	ATMS08, EM06, EM10
<b>7. Freeway-Arterial</b>	Yes	1.2	ATMS07, ATMS08

**D. Project Budget**

(1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed \$1 million per program year per agency.

(2) Joint projects that involve 3 or more agencies may exceed \$1m in federal cost. Federal cost of each agency's component will not be counted against the \$1m limit.

(3) There is no limit on the number of projects that may be submitted by an agency, but each project requires the 30 percent local cost match

(4) For multijurisdictional projects, the federal and local shares of each partnering agency must be shown below.

	Federal Cost	Local Match (min 30%)	Total Cost
<b>Lead Agency</b>	\$233,334.00	\$100,001.00	<b>\$333,335.00</b>
<b>Partnering Agency#1</b>	\$233,333.00	\$100,000.00	<b>\$333,333.00</b>
<b>Partnering Agency#2</b>	\$233,333.00	\$100,000.00	<b>\$333,333.00</b>
<b>Partnering Agency#3</b>			<b>\$0.00</b>
<b>Total</b>	\$700,000.00	\$300,001.00	\$1,000,001.00
<b>Cost percentage</b>	<b>70.0%</b>	<b>30.0%</b>	

**Local match will be shared by MCDOT and the Cities of Avondale and Goodyear**

Note: Each participating agency should provide at least 30% local match for its share of the total cost

### E. Project Schedule

The following project milestones and schedules are based on a typical project procurement process. Please select applicable milestones. Some ITS projects may follow an abbreviated process. ENTER estimated time for such a process

Standard Project Milestones	Default Schedule for Process	Applicable Milestones (ENTER - Yes OR No)	Estimated Time to Milestone (ENTER #Months)	Estimated Date (Enter> mm/yyyy)
Apply for ADOT project number				Aug-2011
Receipt of ADOT project number	Oct-2011	Yes	2	Oct-2011
Initial DCR	Nov-2011	Yes	4	Nov-2011
Final DCR	Dec-2011	Yes	5	Dec-2011
30% Preliminary Plans, Cost Estimate and Report	Feb-2012	Yes	5	Jan-2012

60% Preliminary Plans, Cost Estimate and Report	Apr-2012	Yes	9	Apr-2012
Final Preliminary Plans, Cost Estimate and Report	Jun-2012	Yes	12	Aug-2012
Environmental Clearance	Apr-2012	Yes	9	May-2012
Utility Clearance	May-2012	Yes	10	Jun-2012
Right-of-Way Clearance	Feb-2012	Yes	10	Jun-2012
Approval of IGA	Aug-2012	Yes	14	Oct-2012
Obligation authority of Federal funds	Sep-2012	Yes	15	Oct-2012
Advertised Date	Nov-2012	Yes	18	Jan-2013
Final Deployment	May-2013	Yes	24	Jul-2013

**F. System Maintenance and Operations**

<b>Current staff resources available for ITS operations at the local agency (FTEs)</b>	7
<b>Additional staff resources required for fully utilizing features added by project (FTEs)</b>	None
<b>Estimated current annual ITS operations &amp; maintenance budget</b>	\$1,200,000
<b>Estimated additional annual operations &amp; maintenance funds required for features added by project</b>	\$25,000
<b>Estimated DATE from when required additional O&amp;M funds will be available</b>	Jul-2013

**Other comments:**

Information provided is for MCDOT only. Additional annual operations & maintenance funds shall be agreed upon by partner agencies. A multi-agency operations plan for joint use and operations of these DMS will be developed among the partners. It will include standard DMS messages, message development guidelines, and operational requirements and parameters.

## **G. Systems Engineering Analysis Requirement**

### **Commitment to address the federal requirement for Systems Engineering Analysis:**

Agency's intent to follow the process described in the 'V' diagram (See Appendix A of Arterial ITS Plan) during the project development process

Maricopa County DOT and its City partner agencies will incorporate a Systems Engineering Analysis in the scope of work for the project. The Systems Engineering Analysis will include but not be limited to the following:

1. Interface with the Regional ITS Architecture – Develop clear statement about project goals and objectives, and description of relevant subsystems, user services, and information transfer that satisfy the Regional ITS Architecture requirement.
2. Project Plan – Develop a plan that includes the responsibility of the partner stakeholders, project tasks and interdependencies, schedule and timeframe, including key milestones, and project budget.
3. Concept of Operations – Define a clear vision of how the project will meet the needs of stakeholders and how the system will operate under various scenarios. The Concept of Operations will be among the initial tasks, and will be developed in conjunction with the public partners and contractors. Final sign locations will be established during the Concept of Operations.
4. System Requirements – Develop requirements, including user requirements and functional requirements. These will guide system design and implementation, and will be developed with stakeholders, in conjunction with the Concept of Operations. Goals and objectives will also be established.
5. Requirements Review – Develop plan for design reviews to ensure the design meets the proposed requirements and stakeholder needs and expectations. This will include a review of system interface requirements.
6. System Design – Develop 30%, 60%, 90% and final design plans that include sign locations and required power and communications.
7. System Implementation – Implement arterial DMS in accordance with the Concept of Operations and design. This will include DMS software implementation, as well as capability for shared control and monitoring.
8. System Verification - Develop procedures to test field hardware and system software to ensure the system is functioning as planned.
9. System Operation and Maintenance – Develop an Operations and Maintenance Plan to include maintenance resources, responsibilities, and system operations and maintenance procedures.
10. System Update – Develop a plan for future updates, enhancements, and monitoring, including responsible entities and anticipated timeframe.