

September 19, 2012

Teri Kennedy, TIP Manager  
MAG  
302 N 1<sup>st</sup> Avenue, Suite 300  
Phoenix AZ 85003

Re: ITS Avondale McDowell Road – Avondale to Dysart

Dear Ms. Kennedy,

Thank you for the opportunity to submit a project under the Intelligent Transportation Systems (ITS) Program with the Maricopa Association of Governments (MAG). The City of Avondale is requesting funding for an Avondale McDowell Road – Avondale to Dysart project.

The project will connect two existing signals and two future signals to increase traffic flow and increase efficiencies in signal coordination and fault diagnosis including public safety communications. This project supports regional traffic initiatives including Integrated Corridor Managements Systems (ICMS) along I-10 West.

We hope that you find this application worthy of funding. If you have questions or require further clarification, please contact Janice Simpson at 623-333-1025 or [jsimpson@avondale.org](mailto:jsimpson@avondale.org). We look forward to hearing from you.

Sincerely,  
City of Avondale

A handwritten signature in black ink, appearing to be "JS", is written over the name "Janice Simpson".

Janice Simpson  
Grants Administrator

## INTELLIGENT TRANSPORTATION APPLICATION

### General Instructions:

This Excel form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments (MAG) for Bicycle Projects to be included in the FY2014-FY 2018 MAG Transportation Improvement Program. Funding is available for Federal Fiscal Year (FFY) 2015, 2016 and 2017.

This application form includes:

- Part A - Contact and Project Description,
- PART B - ITS TIP Listing and CMAQ Score Data,
- PART C - ITS project Description,
- Part D - Checklist and Signature Page, and Transmittal Instructions and Schedule.

Each part is a separate tab of this excel file. Please complete Parts A - D. Alternative application forms are available upon request.

### Deadlines and Transmittal Instructions:

Two copies of a printed, complete and signed application must be received in the MAG offices by **10:00 a.m. Wednesday, September 19, 2012**. The application is to be submitted electronically and should include ArcGIS shape files depicting the project location if they are available.

**Detailed transmittal instructions are located in a separate tab** in this excel sheet. Late applications **will not be accepted**.

If member agencies need additional information or have questions, they should contact Teri Kennedy or Stephen Tate at (602) 254-6300 or contact them by e-mail at the following addresses:

<mailto:state@azmag.gov>  
<mailto:tkennedy@azmag.gov>  
<mailto:LLuo@azmag.gov>

**All information is required, unless noted by the word - Optional.**

### PART A - CONTACT AND PROJECT DESCRIPTION

Contact Information	
1. Sponsoring Agency	City of Avondale
2. Contact Name	Margaret Boone, PE
3. Phone	623-333-4217
4. E-Mail Address	mboone@avondale.org
5. Mailing Address	11465 W. Civic Center Drive, Suite 120 Avondale, Arizona 85323

(OPTIONAL)

If the applicant will be providing a GIS coverage (shapefile or geodatabase), please see the tab labeled "GIS Transmittal Instructions)

[GIS Submittal Instructions](#)

ITS Application from City of Avondale for 'McDowell Road - Avondale to Dysart'

**PART B-ITS TIP Listing and CMAQ Score Data**

This part of the form identifies data to calculate an CMAQ Score and provide the minimum data needed for a listing of the project in the Transportation Improvement Program

**Federal Funding Eligibility**

All ITS projects to be funded with Federal CMAQ funds must be in the 8-Hour Ozone Nonattainment Area. Please use the following link to verify that the map is located in the nonattainment area:

[Link to an 8-Hr Ozone Nonattainment Map on the MAG Website](#)

**1. Traffic Estimate and Roadway Characteristics**

a. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type:

b. Please Describe how the ADT was estimated:

c. When was the ADT estimate developed:

d. Name of the Roadway Section Used for the ADT Estimate:

e. Starting Limit of the Roadway Section:

f. Ending Limit of the Roadway Section:

g. Length (Miles)

h. Total Number of Through Lanes on the Roadway Section:

i. Federal Functional Classification of the Roadway Section:

[Link to Functional Classification Map on the MAG Website](#)

**2. Traffic Coordination Improvements. If the project improves traffic signal coordination, please do the following:**

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
	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
X	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
	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
	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

**3. Other Improvements. Check all that apply:**

- 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
- Adds Traffic Signals that increase pedestrian crossing time for seniors

**4. Traffic Speed Impacts of the Project (Not required for Traffic Coordination Improvements)**

- a. Enter the pre-improvement (current) traffic speed of the traffic corridor:
- b. Enter the post-improvement (current) traffic speed of the traffic corridor:

ITS Application from City of Avondale for 'McDowell Road - Avondale to Dysart'

### PART C -ITS project Description

Please enter project data ONLY in highlighted cells, save the file with the lead agency name in it - ie. City 0 ITS Projects.xls  
 Submit this Excel workbook to MAG via email to: lluo@azmag.gov  
 Please use one worksheet per project, with the tab at the bottom indicating agency priority -- Mesa1, Mesa2,.. etc.  
 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

Please enter required information in highlighted cells

#### A. Project Title & Sponsor

Lead Agency	City of Avondale
Other Partnering Agencies	
ITS Project Title:	McDowell Road - Avondale to Dysart
Project Category:	Integrated Corridor Managt

#### B. Project Goals & Objectives

**Project Goals:**  
 Connect two existing signals and two future signals to increase traffic flow, streamlined and more efficient signal coordination and fault diagnosis for transportation applications, including public safety communications. Support Regional traffic initiatives including Integrated Corridor Management Systems (ICMS) along I-10 West.

**Objectives:**  
 Provide and install fiber communications backbone on McDowell Road east of Dysart Road, one of the City's highest volume corridors. It will be cost effective and very beneficial to include McDowell Road to the City's traffic signal communications. This project will allow City of Avondale to view CCTV Cameras and respond to irregular traffic conditions such as incidents on the surrounding arterial system by adjusting signal timings and coordinating traffic management strategies as well as reduce non-planned maintenance call response times allowing mitigation from a central location at the Avondale interim TOC. This corridor has high commercial land uses to be developed in the future. In addition, it continually serves as a corridor used to divert traffic during non-recurring incidents on the I-10.

#### C. Project Information

**Project Location:**  
 McDowell Rd from Dysart Road to Avondale Boulevard.

**Scope of the project:**  
 The proposed alignment will be consistent with the City's Fiber Backbone Plan and ITS strategic Plan. Assumed directional boring the entire length of backbone east and west of the Agua Fria Bridge, Flood Control District coordination and permits to install conduit on the bridge, and trenching connections to signal cabinets. Two new ASC 3 controllers installed to replace existing to provide compatible ITS applications. One CCTV camera will be included for the Friendship Park egress intersections. The fiber backbone will be installed in Avondale roadway right-of-way. There is a current CMAQ project installing conduit, fiber, and associated equipment for nine (9) existing and future traffic signals on McDowell Road east of Avondale Boulevard. The 2011 TOC project installed fiber and equipment connecting the Avondale and McDowell intersection.

#### D. Identify Components in MAG Regional ITS Architecture

ITS applications	Relevant Applications (ENTER: Yes or No)	Applicable ITS Market Packages <a href="http://www.azmag.gov/ITS/">http://www.azmag.gov/ITS/</a>	Note: Please attach the Architecture Flow Diagram in the application
1. Traffic Management	Yes	ATMS03, ATMS07, ATMS08	
2. Transit Operations Support			
3. Communications	Yes		
4. Traveler Information			
5. Archived Data Management			
6. ITS for Safety			
7. ITS Plans			
8. Freeway-Arterial Operations	Yes	ATMS01	

**E. Program Year Preference**

First Choice           ● FY2015   ● FY2016   ● FY2017  
 Second Choice       ● FY2015   ● FY2016   ● FY2017  
 Third Choice         ● FY2015   ● FY2016   ● FY2017

**F. Project Budget**

	Federal Cost	Local Match (min 5.7%)	Total Cost
<b>Amount</b>	\$424,498.00	\$101,610.00	\$526,108.00
<b>Cost percentage</b>	80.7%	19.3%	

**G. Project Schedule**

The table below is provided as a tool to assist local agencies develop a project planning schedule. Column A shows standard project milestones and Column B shows the schedule based on a typical project procurement process. To generate a custom Project Schedule:(1) select applicable milestones in Column C;(2) Enter estimated time to complete milestone measured in months from project development start date in Column D; **NOTE: The project obligation date generated in cell E111 MUST occur before Sept 15th of the programmed fiscal year.** Determine the appropriate **Project Activity Start Date** (by trial-and-error) in order to obligate the project on time.

Standard Project Milestones	Default Schedule for Process	Applicable Milestones (ENTER - Yes OR No)	Estimated Time to Milestone (ENTER #Months)	Estimated Date
Apply for ADOT project number				Feb-2015
Receipt of ADOT project number	Apr-2015	yes	0	Feb-2015
Initial DCR	May-2015	no		NA
Final DCR	Jun-2015	no		NA
30% Preliminary Plans, Cost Estimate and Report	Aug-2015	no		NA
60% Preliminary Plans, Cost Estimate and Report	Oct-2015	yes	8	Oct-2015
Final Preliminary Plans, Cost Estimate and Report	Dec-2015	yes	16	Jun-2016
Environmental Clearance	Oct-2015	yes	11	Jan-2016
Utility Clearance	Nov-2015	yes	11	Jan-2016
Right-of-Way Clearance	Aug-2015	yes	11	Jan-2016
Approval of IGA	Feb-2016	yes	11	Jan-2016
Obligation authority of Federal funds	Mar-2016	yes	11	Jan-2016
Advertised Date	May-2016	yes	1	Feb-2016
Final Deployment	Nov-2016	yes	12	Feb-2017

< ENTER mm/yyyy -- Project Activity S

**H. System Maintenance and Operations**

Current staff resources available for ITS operations at the local agency (FTEs)	3
Additional staff resources required for fully utilizing features added by project	0
Estimated current annual ITS operations & maintenance budget	\$0
Estimated additional annual operations & maintenance funds required for	\$125,000
Estimated DATE from when required additional O&M funds will be available	Jul-2016

Other comments:

**I. 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 during the project development process

The City of Avondale intends to incorporate the Systems Engineering Analysis in the scope of work for the projects Project Assessment report. Details on the ADOT Systems Engineering Checklist can be found at :  
<http://www.azdot.gov/Highways/TTG/PDF/SystemsEngineeringChecklist.pdf>

**PART D - SIGNATURE AND CHECKLIST**

As the jurisdiction's manager/administrator or designated representative, I certify that this application is accurate and complete and that the project will be included in the sponsoring MAG member agency's local CIP/TIP if the project is selected for federal funding.

Signature:



Name: Charlie McClendon

Title: City Manager

Date: 9/19/2012

**WILL FILL OUT AFTER QUESTIONS APPROVED.**

**Checklist - OPTIONAL**

This check list is optional, but is included to facilitate applicant review and verification that all required fields in the form have been completed.

<b>PART A - Contacts and Project Description Fields</b>	<b>Complete?</b>
Contact Information, fields 1 – 5 are complete	Yes
<b>PART B - TIP Listing and CMAQ Score Data</b>	<b>Complete?</b>
1. Traffic Estimate and Roadway Characteristics - Fields a - I are complete	
2. Traffic Coordination Improvements - as applicable table is complete	Yes
3. Other Improvements - As applicable all fields are completed	Yes
<b>PART C - Total Project Schedule and Budget Including All Segment Fields</b>	<b>Complete?</b>
Section A is Complete	Yes
Section B is Complete	Yes
Section C is Complete	Yes
Section D is Complete	Yes
Section E is Complete	Yes
Section F is Complete	Yes
Section G is Complete	Yes
Section H is Complete	Yes
Section I is Complete	Yes
<b>PART D - Signature Page Fields</b>	<b>Complete?</b>
Form is signed	No
Name, title and date fields are completed.	Yes

ITS Application from City of Avondale for 'McDowell Road - Avondale to Dysart'

## MAG CMAQ Project

### Intelligent Transportation Systems Project

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
------------------	------	--------	-------------	-------	--------------------

**A. SCOPING** (15% Preliminary Engineering Design)  
(Non-infrastructure projects: Only #2 applies).

1. SITE TOPOGRAPHIC SURVEY	LS	1	\$10,110.00	\$10,110.00	No
2. PROJECT ASSESSMENT REPORT or DETAILED WORKPLAN	LS	1	\$7,000.00	\$7,000.00	No
3. SYSTEMS ENGINEERING ANALYSIS (must address FHWA requirements)	LS	1	\$5,000.00	\$5,000.00	No
4. ENVIRONMENTAL DETERMINATION (Infrastructure projects, including technical supporting documents)	LS	1	\$8,500.00	\$8,500.00	No
5. HAZMAT ASSESSMENT	LS	1		\$0.00	No
<b>SUBTOTAL – PROJECT SCOPING COSTS</b>				<b>\$30,610.00</b>	<b>\$0</b>

**B. FINAL PRELIMINARY ENGINEERING DESIGN - Stages II, III, IV and PS&E**  
(Not applicable to non-infrastructure projects)

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
1. Right-of-Way Acquisition	LS	1	\$11,500.00	\$11,500.00	No
2. Plans, Special Provisions or Bid Manual, Cost Estimate & Schedules.	LS	1	\$40,000.00	\$40,000.00	No
3. GEOTECHNICAL INVESTIGATION and Materials & Pavement Design Report	LS	1	\$4,500.00	\$4,500.00	No
4. DRAINAGE REPORT	LS	1		\$0.00	No
5. Storm Water Pollution Prevention Plan (SWPPP)	LS	1		\$0.00	No
<b>SUBTOTAL – PROJECT DESIGN COSTS</b>				<b>\$56,000.00</b>	<b>\$0</b>

**C. CONSTRUCTION OR IMPLEMENTATION**

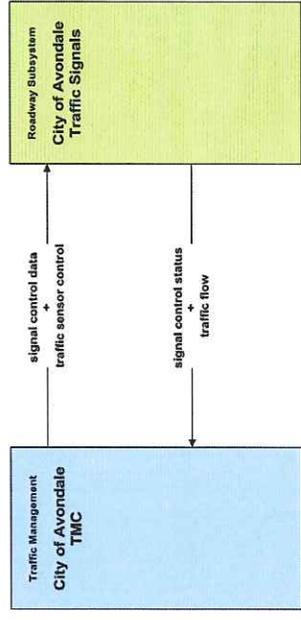
**For non-infrastructure projects (no ground disturbing activities), address only parts 2, 3 and D.**





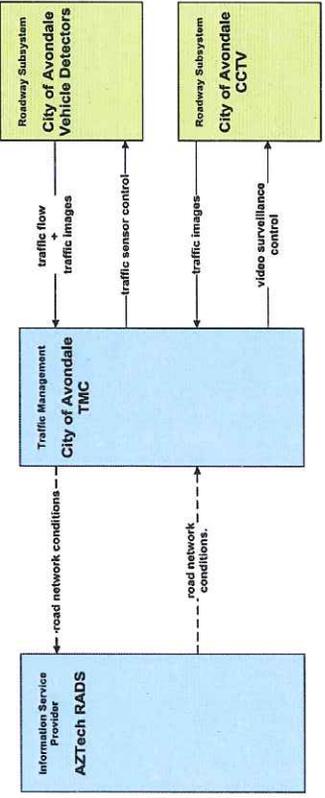
Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
<b>D. ADOT Fee for PE Reviews and Staff Charges</b>	LS	1	\$15,000	\$15,000	No
<b>TOTAL ADOT Fee COST</b>				\$15,000	\$0
<b>E. TOTAL PROJECT COST</b> (All <u>subtotals</u> + ADOT local projects review fee)				\$526,108	\$424,498
<b>F. SUMMARY OF FEDERAL AND NON-FEDERAL FUNDS</b>					
<b>TOTAL COST FOR PROJECT CONSTRUCTION/IMPLEMENTATION</b>					\$526,108
<b>TOTAL COST FOR PROJECT ELIGIBLE FOR FEDERAL REIMBURSEMENT</b>					<b>\$424,498</b>
<b>TOTAL FEDERAL FUNDS @ 94.3% (.943 x Total Eligible Cost shown highlighted above)</b>					\$400,302
<b>LOCAL AGENCY MATCHING FUNDS (.057 x Total Cost shown highlighted above)</b>					\$24,196
<b>LOCAL AGENCY FUNDS <u>NOT</u> ELIGIBLE FOR FEDERAL REIMBURSEMENT</b>					\$101,610

**ATMS03 - Surface Street Control**  
City of Avondale



**LEGEND**  
 planned and future flow  
 existing flow  
 user defined flow

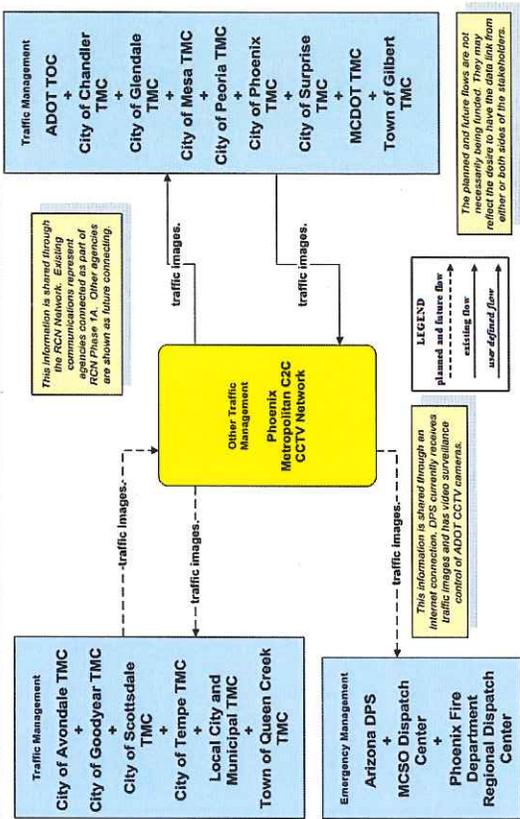
**ATMS01 - Network Surveillance**  
City of Avondale



The planned and future flows are not reflect the desire to have the data link from either or both sides of the stakeholders.

**LEGEND**  
 planned and future flow  
 existing flow  
 user defined flow

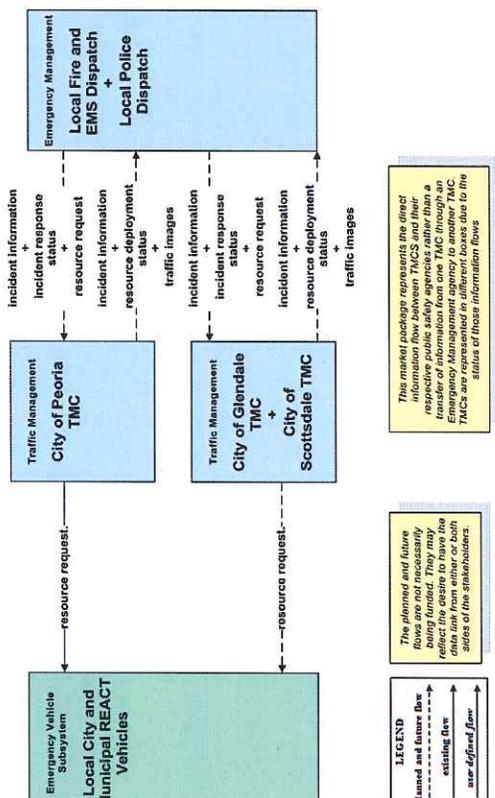
**ATMS07 - Regional Traffic Management**  
Phoenix Metropolitan CZC CCTV Network



The planned and future flows are not necessarily being formed. They may reflect the desire to have the data link from either or both sides of the stakeholders.

**LEGEND**  
 planned and future flow  
 existing flow  
 user defined flow

**ATMS08 - Incident Management**  
Local Cities and Municipalities (TM to EM)



The market package represents the direct information flow between TMCs and that a transfer of information from one TMC through an Emergency Management agency to another TMC is represented as a different box due to the status of those information flows.

The planned and future flows are not necessarily reflect the desire to have the data link from either or both sides of the stakeholders.

**LEGEND**  
 planned and future flow  
 existing flow  
 user defined flow

# Project Location



Avondale ITS: McDowell Road Phase 2- 2016 TIP Application