

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	Maricopa Department of Transportation
2. Contact Name	Nicolaas Swart
3. Phone	602-506-0599
4. E-Mail Address	nicolaasswart@mail.maricopa.gov
5. Mailing Address	2901 W. Durango Street Phoenix, AZ 85009

(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 Maricopa Department of Transportation for 'Last Mile Fiber Optic Connections'

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
<input checked="" type="checkbox"/>	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 Maricopa Department of Transportation for 'Last Mile Fiber Optic Connections'

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
<input checked="" type="checkbox"/>	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 Maricopa Department of Transportation for 'Last Mile Fiber Optic Connections'

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
<input checked="" type="checkbox"/>	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	18.0 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:

40

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

40

ITS Application from Maricopa Department of Transportation for 'Last Mile Fiber Optic Connections'

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	Maricopa Department of Transportation
Other Partnering Agencies	
ITS Project Title:	Last Mile Fiber Optic Connections
Project Category:	Arterial ITS

B. Project Goals & Objectives

Project Goals:

Install new fiber and conduit infrastructure along Indian School Road, McDowell Road, and in Anthem to enable future connectivity of MCDOT traffic signals and reduce the number of leased line connections to those intersections. The project will also integrate the installed fiber with ADOT Freeway Management System backbone.

Objectives:

The connections are to be able to eliminate the need for T1-leased lines and reduce ongoing costs associated with those leased lines and enable future connectivity to other MCDOT traffic signals along those corridors. The Anthem connection in specific will also enable traffic management and re-routing for freeway/arterial coordination in the event of an incident or closure on I-17 near Anthem.

C. Project Information

Project Location:

Last-mile fiber optic connections include:

- 1) Along Indian School Road west of Loop 101 from Loop 101 to 99th Avenue.
- 2) Along McDowell from the existing MCDOT pull box at the eastside of the McDowell Road/Loop 101 interchange to the ADOT No. 9 pull box at the same interchange.
- 3) Along Daisy Mountain Drive from Gavilan Peak Parkway to I-17 Black Canyon Freeway.

Scope of the project:

Install pull boxes and fiber optic cable. Along Indian School Road, the fiber will connect traffic signals at 99th Avenue and Loop 101 with spliced branch fiber to existing traffic signal pull boxes along Indian School Road from Loop 101 to 99th Avenue. Along McDowell Road, the conduit infrastructure will tie a new MCDOT pull box at the eastside of the McDowell Road/Loop 101 interchange to an existing ADOT pull box at the McDowell Road/Loop 101 interchange. In Anthem, fiber and pull boxes will be installed along Daisy Mountain Drive from Gavilan Peak Parkway to I-17 Black Canyon Freeway to connect to MCDOT-owned pull box being installed on ADOT ROW as part of the ADOT FMS at the east corner of Daisy Mountain Drive intersection with I-17. Project will include any required RADS updates or integration needs. MCDOT will develop agreements with ADOT and City of Phoenix for the connections/permits.

D. Identify Components In MAG Regional ITS Architecture

<u>ITS applications</u>	Relevant Applications (ENTER: Yes or No)	<u>Applicable ITS Market Packages</u> http://www.azmag.gov/ITS/
1. Traffic Management	Yes	ATMS01-02, ATMS07-3
2. Transit Operations Support	No	
3. Communications	No	
4. Traveler Information	No	
5. Archived Data Management	Yes	AD1-2
6. ITS for Safety	No	
7. ITS Plans	No	
8. Freeway-Arterial Operations	No	

Note: Please attach the Architecture Flow Diagram in the application

E. Program Year Preference

First Choice	<input type="radio"/> FY2015	<input type="radio"/> FY2016	<input checked="" type="radio"/> FY2017
Second Choice	<input type="radio"/> FY2015	<input checked="" type="radio"/> FY2016	<input type="radio"/> FY2017
Third Choice	<input checked="" type="radio"/> FY2015	<input type="radio"/> FY2016	<input type="radio"/> FY2017

F. Project Budget

	Federal Cost	Local Match (min 5.7%)	Total Cost
Amount	\$429,988.00	\$25,991.00	\$455,979.00
Cost percentage	94.3%	5.7%	

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				Jul-2015
Receipt of ADOT project number	Oct-2015	Yes	1	Aug-2015
Initial DCR	Oct-2015	Yes	3	Oct-2015
Final DCR	Nov-2015	Yes	5	Dec-2015
30% Preliminary Plans, Cost Estimate and Report	Jan-2016	Yes	7	Feb-2016
60% Preliminary Plans, Cost Estimate and Report	Mar-2016	Yes	9	Apr-2016
Final Preliminary Plans, Cost Estimate and Report	May-2016	Yes	11	Jun-2016
Environmental Clearance	Mar-2016	Yes	12	Jul-2016
Utility Clearance	Apr-2016	Yes	10	May-2016
Right-of-Way Clearance	Jan-2016	Yes	7	Feb-2016
Approval of IGA	Jul-2016	Yes	12	Jul-2016
Obligation authority of Federal funds	Aug-2016	Yes	13	Aug-2016
Advertised Date	Oct-2016	Yes	2	Oct-2016
Final Deployment	Apr-2017	Yes	6	Apr-2017

< ENTER mm/yyyy – Project Activity Start Date

H. System Maintenance and Operations

Current staff resources available for ITS operations at the local	6
Additional staff resources required for fully utilizing features added by	0
Estimated current annual ITS operations & maintenance budget	\$931,000
Estimated additional annual operations & maintenance funds required	\$1,100,000
Estimated DATE from when required additional O&M funds will be	Jul-2015

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 project sponsor or lead agency intends to incorporate the Systems Engineering Analysis in the scope of work for the project's **Design Concept Report**. The Systems Engineering Analysis will be carried out based on the document Systems Engineering for ITS published by FHWA in January 2007 and the checklist developed by FHWA and ADOT.

<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: John B. Hauskins, P.E.

Title: Director, Maricopa County Department of Transportation

Date: 9/19/2012

WILL FILL OUT AFTER QUESTIONS APPROVED

Checklist - OPTIONAL

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

PART A - Contacts and Project Description Fields	Complete?
Contact information, fields 1 – 5 are complete	
PART B - TIP Listing and CMAQ Score Data	Complete?
1. Traffic Estimate and Roadway Characteristics - Fields a - I are complete	
2. Traffic Coordination Improvements - as applicable table is complete	
3. Other Improvements - As applicable all fields are completed	
PART C - Total Project Schedule and Budget including All Segment Fields	Complete?
Section A is Complete	
Section B is Complete	
Section C is Complete	
Section D is Complete	
Section E is Complete	
Section F is Complete	
Section G is Complete	
Section H is Complete	
Section I is Complete	
PART D - Signature Page Fields	Complete?
Form is signed	
Name, title and date fields are completed.	

ITS Application from Maricopa Department of Transportation for 'Last Mile Fiber Optic Connections'

TRANSMITTAL INSTRUCTIONS and SCHEDULE

The due date and time for project applications to be submitted to MAG is **Wednesday, September 19, 2012 by 10:00 a.m.**

Member agencies are to:

1) Transmit the application and all attachments electronically, and

To transmit the application electronically, please save the excel file, and then send the application and all attachments to Teri Kennedy, Transportation Programming Manager. Please send graphic attachments in PDF form. Click cell below to send e-mail.

<mailto:MAG Staff>

2) Submit two printed, signed, and complete applications to MAG.

To submit two printed, signed, and complete applications to MAG, the applicant can mail (at MAG offices by Wednesday September 19, 2012 at 10:00 a.m.) or drop off application to:

Maricopa Association of Governments
ATTN: Teri Kennedy,
302 N. 1st Avenue, Suite #300,
Phoenix, AZ 85003.

Or, the applicant can scan a printed and signed application and transmit it via e-mail or fax to: tkennedy@azmag.gov or 602.254.6300 by **Thursday September 19th @ 10:00 a.m.** If the applicant is transmitting a scanned, printed, and signed application via e-mail or fax, the applicant will mail or drop off the original printed application by **Wednesday, September 26, 2012.**

Application Workshops and Open Working Group Meeting Schedule*

Monday, August 13, 2012 from 9:00-11:00 AM	Workshop on MAG Transportation Programming and Federal Fund Project Applications
Monday, August 27, 2012 from 1:00-3:30 PM	Open Working Group - Federal Fund Project Applications
Monday, September 10, 2012 from 8:30-11:00 AM	Open Working Group - Federal Fund Project Applications

* All meetings will be held on the 2nd Floor of the MAG Offices at 302 North 1st Ave, Suite 300, Phoenix, Arizona 85003

ITS Application from Maricopa Department of Transportation for 'Last Mile Fiber Optic Connections'

Instructions for the Submittal of GIS Data for CMAQ Funding Applications

It is preferred that, when possible, member agencies submit GIS data representing the locations of projects defined in their CMAG Applications. For member agencies unable to meet this requirement, MAG staff is available to assist in this area.

Submission Requirements

GIS Data – For each geometry type (point, line, polygon), please provide a single GIS shapefile or feature class for your jurisdiction. Example: if you are submitting Project Applications that are for both linear features (bike lanes) and point features (crossings), you would submit a total of two shapefiles or geodatabase feature classes along with your Project Application.

File Formats – Agencies that are able to submit GIS data along with CMAQ Applications shall provide the data in one of three formats that are compatible with ESRI products: (1) shapefile, (2) Personal Geodatabase, or (3) File Geodatabase.

Spatial Reference – The preferred spatial reference system of submitted GIS data is State Plane Arizona Central NAD 83 HARN.

Attributes – All GIS data submitted shall, at a minimum, have the following attributes:

- **PROJECT_TITLE** – the name of the project; this should be the same as the Project Title in the Project Application
- **LOCATION** – (optional) a description of the location of the project. Linear features should be described by their start and end locations. Polygon features should be described using streets, water courses, canals, city boundaries, or other landmarks as a means of describing the location of the project.

<Provide screenshot showing graphic link between survey response in Excel and the attribute table.>

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	\$50,000.00	\$50,000.00	No
2. PROJECT ASSESSMENT REPORT or DETAILED WORKPLAN	LS	1	\$5,000.00	\$5,000.00	No
3. SYSTEMS ENGINEERING ANALYSIS (must address FHWA requirements)	LS	1	\$10,000.00	\$10,000.00	No
4. ENVIRONMENTAL DETERMINATION (Infrastructure projects, including technical supporting documents)	LS	1	\$30,000.00	\$30,000.00	No
5. HAZMAT ASSESSMENT	LS	1	\$2,000.00	\$2,000.00	No
SUBTOTAL – PROJECT SCOPING COSTS				\$97,000.00	\$0

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	\$0.00	\$0.00	No
2. Plans, Special Provisions or Bid Manual, Cost Estimate & Schedules.	LS	1	\$150,000.00	\$150,000.00	No
3. GEOTECHNICAL INVESTIGATION and Materials & Pavement Design Report	LS	1	\$0.00	\$0.00	No
4. DRAINAGE REPORT	LS	1	\$0.00	\$0.00	No
5. Storm Water Pollution Prevention Plan (SWPPP)	LS	1	\$0.00	\$0.00	No
SUBTOTAL – PROJECT DESIGN COSTS				\$150,000.00	\$0

C. CONSTRUCTION OR IMPLEMENTATION

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

1. CONSTRUCTION ELEMENTS (Insert additional rows if necessary)					
--	--	--	--	--	--

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
TOTAL ADOT Fee COST				\$15,000	\$15,000
E. TOTAL PROJECT COST (All <u>subtotals</u> + ADOT local projects review fee)				\$702,979	\$455,979
F. SUMMARY OF FEDERAL AND NON-FEDERAL FUNDS					
TOTAL COST FOR PROJECT CONSTRUCTION/IMPLEMENTATION					\$702,979
TOTAL COST FOR PROJECT ELIGIBLE FOR FEDERAL REIMBURSEMENT					\$455,979
TOTAL FEDERAL FUNDS @ 94.3% (.943 x Total Eligible Cost shown highlighted above)					\$429,988
LOCAL AGENCY MATCHING FUNDS (.057 x Total Cost shown highlighted above)					\$25,991

VICINITY MAP OF PROJECT

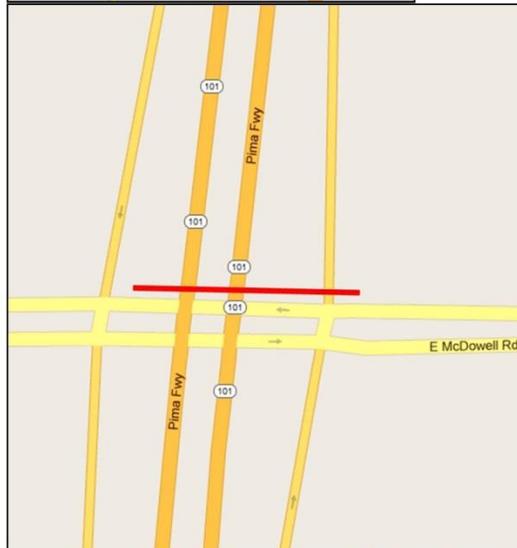
1 of 3

Indian School Road



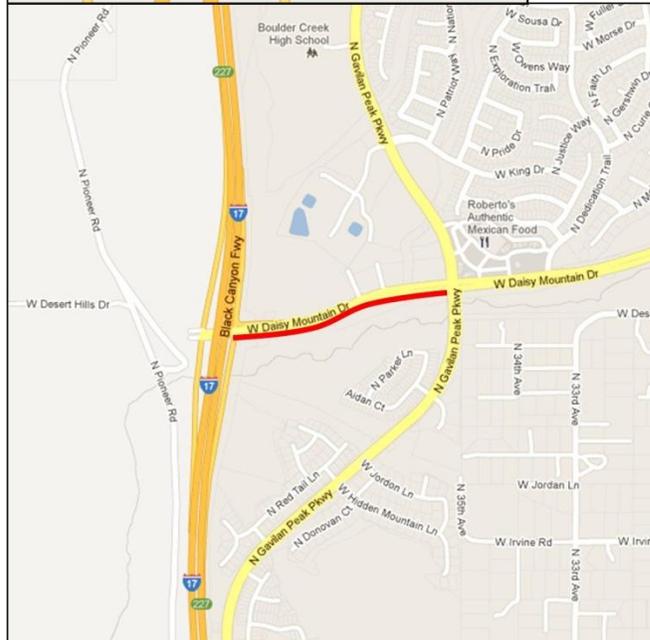
2 of 3

McDowell Road



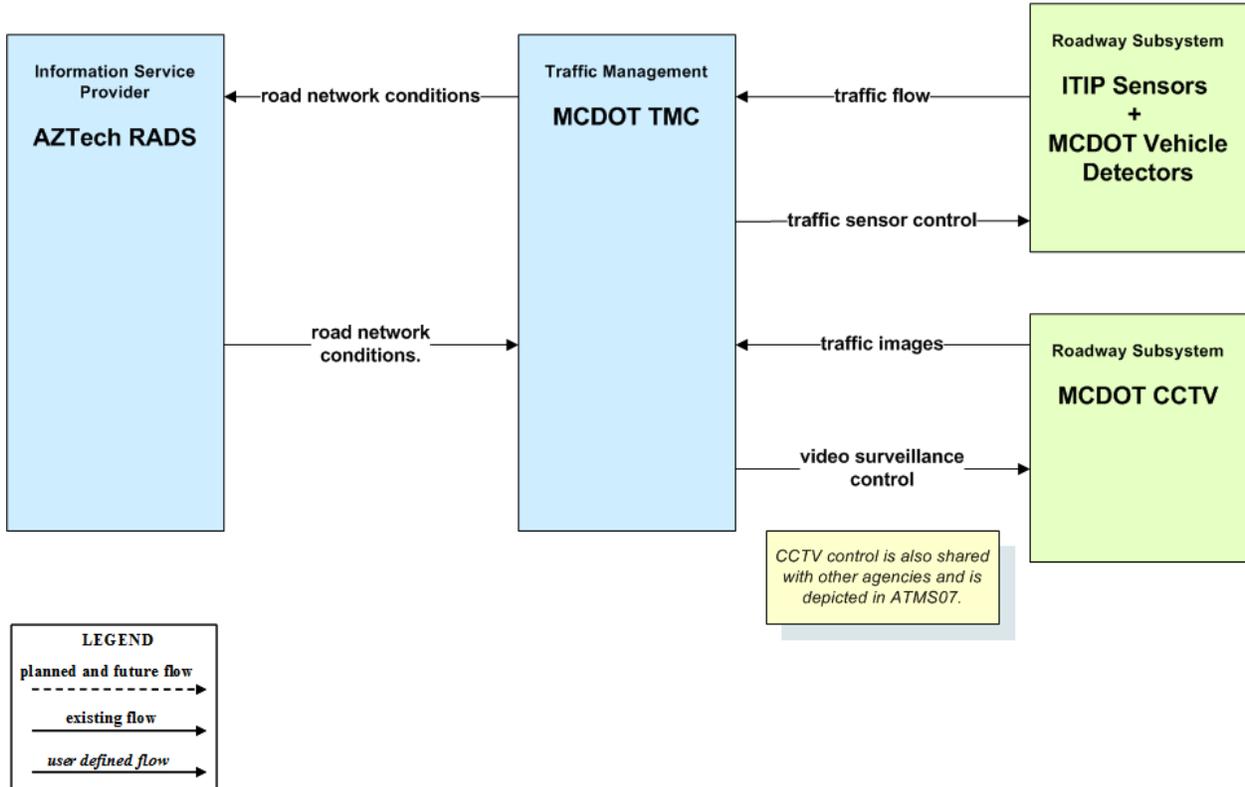
3 of 3

Daisy Mountain Drive

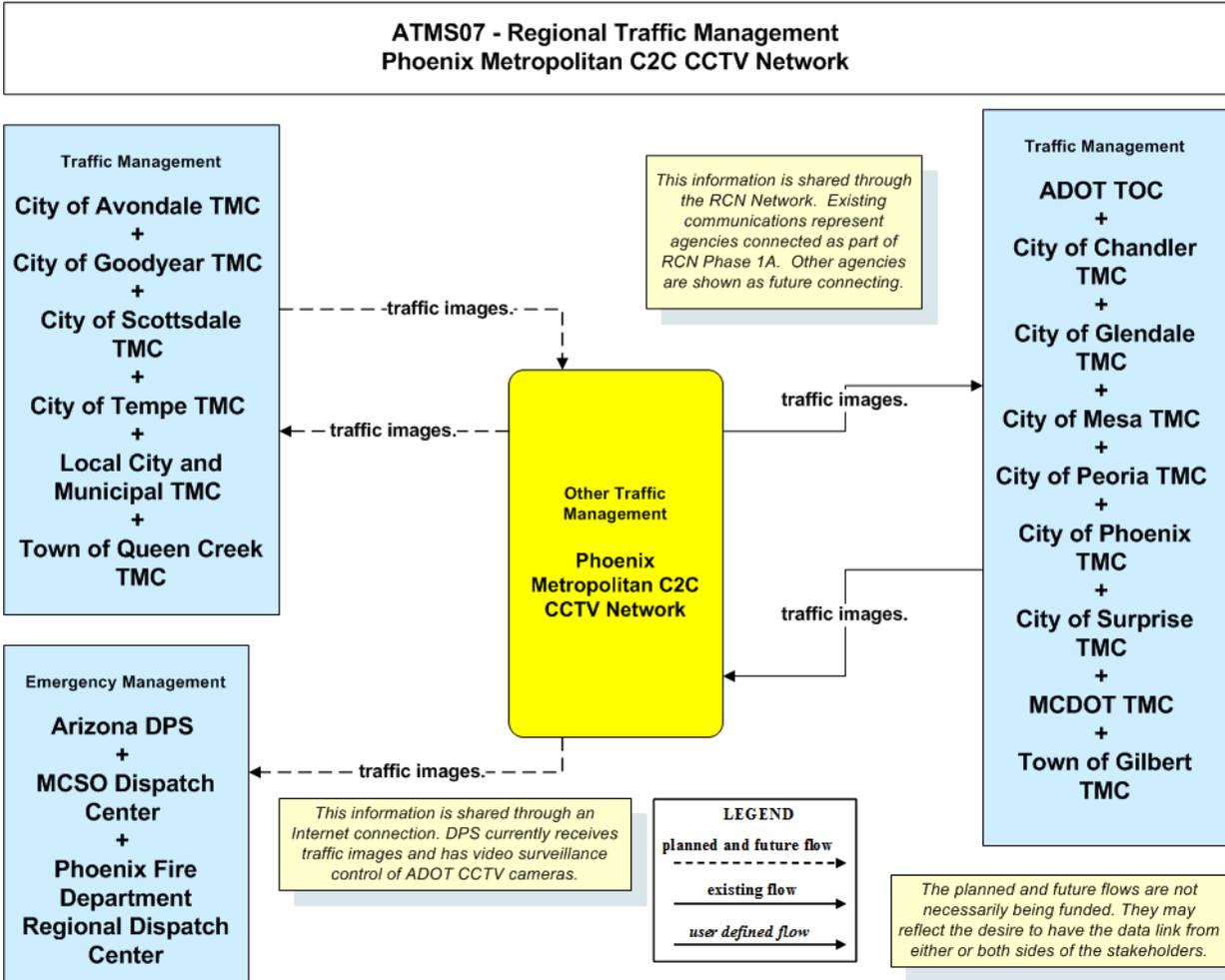


ATMS01-02

ATMS01 - Network Surveillance Maricopa County



ATMS07-3



AD1-2

AD1 - ITS Data Mart
Maricopa County

