

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 Tempe
2. Contact Name	Catherine P. Hollow
3. Phone	(480)350-8445
4. E-Mail Address	catherine_hollow@tempe.gov
5. Mailing Address	City of Tempe 200 E. Fifth St, 3rd floor, Tempe, AZ 85281

(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 Tempe for 'Rural Road Fiber Installation (north)'

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:

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 Tempe
Other Partnering Agencies	
ITS Project Title:	Rural Road Fiber Installation (north)
Project Category:	Arterial ITS

B. Project Goals & Objectives

Project Goals:

To provide the City with a reliable communications network to be able to view, monitor, and actively manage traffic conditions. The ultimate goal is to have a hybrid fiber/wireless network that will increase communications bandwidth, eliminate the need for telephone lease lines, and improve system performance.

Objectives:

To provide a fiber backbone through the middle of the City on Rural Rd, one of Tempe's major north-south arterial routes. The installation of fiber will provide a reliable and efficient communication corridor that will improve real time traffic signal operations, improve traffic flow, and decrease delay. A fiber backbone through the middle of the City will provide redundancies in the communications system and will allow additional wireless communications to be installed in the future. In addition, this project will provide the infrastructure that can be used for future transit operations, for traveler information, and for special event traffic management.

C. Project Information

Project Location:

The project is located on Rural Road in the City of Tempe. Rural Road extends the length of the City. This project provides fiber from US 60 north to the City limits, approximately 5 miles.

Scope of the project:

The project will install conduit and fiber in the Rural Rd corridor from US 60 north. Conduit location will vary along the route and could include installation under the roadway, under LRT, and on a bridge. Devices to be installed to complete the system include pull boxes, splice closures, patch panels, fiber optic jumper cables, and ethernet switches. The installation will be based on the overall design of the Rural Rd fiber corridor which will be funded locally through the City's CIP.

D. Identify Components in MAG Regional ITS Architecture

ITS applications	Relevant Applications (ENTER: Yes or No)	Applicable ITS Market Packages http://www.azmag.gov/ITS/	Note: Please attach the Architecture Flow Diagram in the application
1. Traffic Management	yes	ATMS01	
2. Transit Operations Support			
3. Communications	yes	ATMS03	
4. Traveler Information	yes	ATMS06	
5. Archived Data Management			
6. ITS for Safety			
7. ITS Plans			
8. Freeway-Arterial Operations	yes	ATMS08	

E. Program Year Preference

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

F. Project Budget

	Federal Cost	Local Match (min 5.7%)	Total Cost
Amount	\$983,625.00	\$59,456.00	\$1,043,081.00
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				Oct-2015
Receipt of ADOT project number	Dec-2015	yes	1	Nov-2015
Initial DCR	Jan-2016			NA
Final DCR	Feb-2016			NA
30% Preliminary Plans, Cost Estimate and Report	Apr-2016	yes	2	Dec-2015
60% Preliminary Plans, Cost Estimate and Report	Jun-2016	yes	3	Jan-2016
Final Preliminary Plans, Cost Estimate and Report	Aug-2016	yes	5	Mar-2016
Environmental Clearance	Jun-2016	yes	1	Nov-2015
Utility Clearance	Jul-2016	yes	1	Nov-2015
Right-of-Way Clearance	Apr-2016	yes	1	Nov-2015
Approval of IGA	Oct-2016			NA
Obligation authority of Federal funds	Nov-2016	yes	7	May-2016
Advertised Date	Jan-2017	yes	6	Nov-2016
Final Deployment	Jul-2017			NA

< ENTER mm/yyyy -- Project Activity S

H. System Maintenance and Operations

Current staff resources available for ITS operations at the local	2
Additional staff resources required for fully utilizing features added by	0
Estimated current annual ITS operations & maintenance budget	\$225,000
Estimated additional annual operations & maintenance funds required	\$5,000
Estimated DATE from when required additional O&M funds will be	Jun-2017

Other comments:

I. Systems Engineering Analysis Requirement

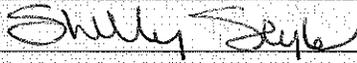
Commitment to address the federal requirement for Systems Engineering Analysis:

Agency's intent to follow the process described in the 'V' diagram during the project development process

The City of Tempe commits to completing the Systems Engineering Analysis for this project. Details on the ADOT System 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: Shelly, Seyler, P.E.

Title: Deputy Public Works Director - Traffic Engineering and Operations Division

Date: September 18, 2012

WILL FILL OUT AFTER QUESTIONS APPROVED

Checklist - OPTIONAL

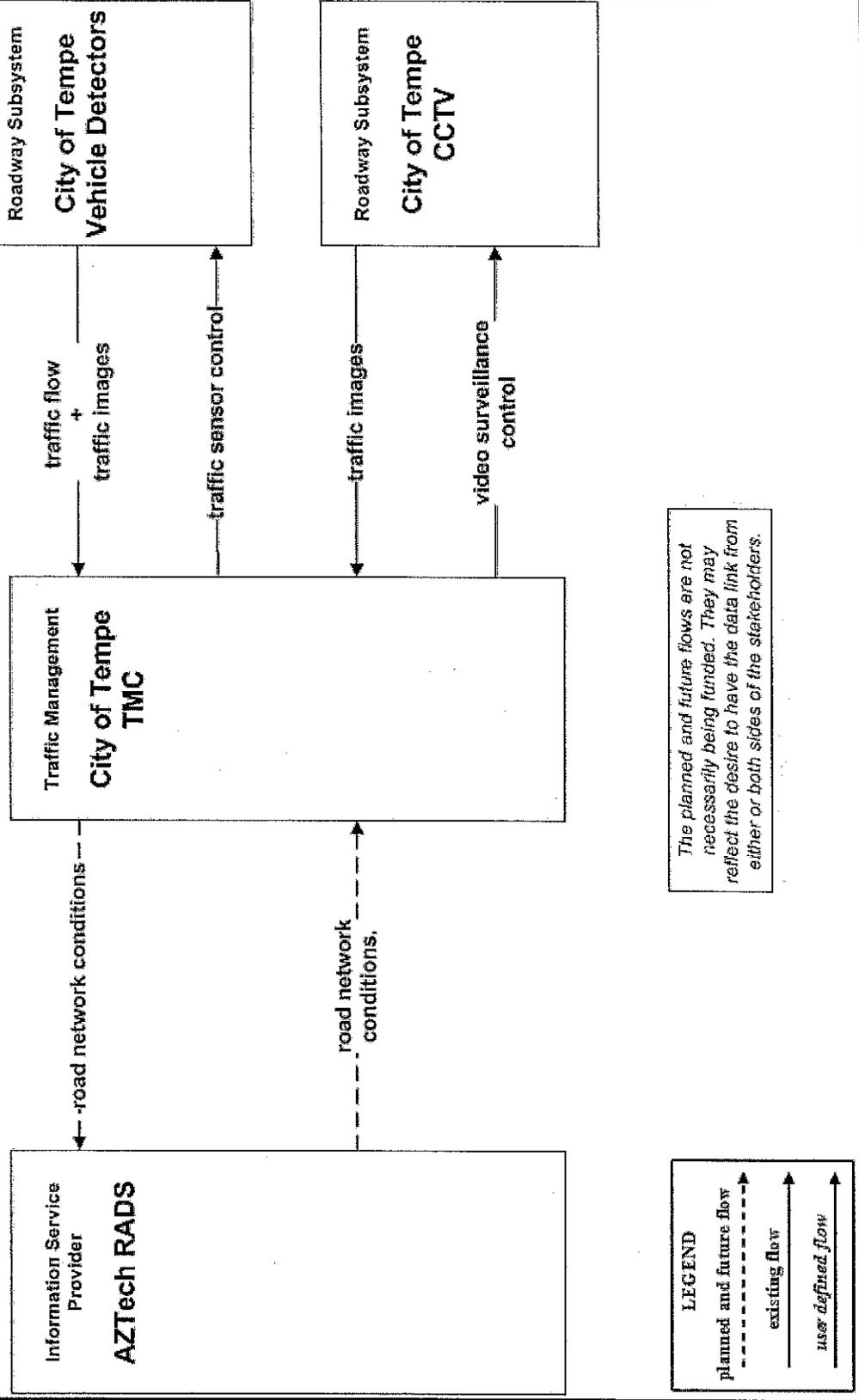
This check list is optional, but is included to facilitate applicant review and verification that all required fields in the form have been completed.

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

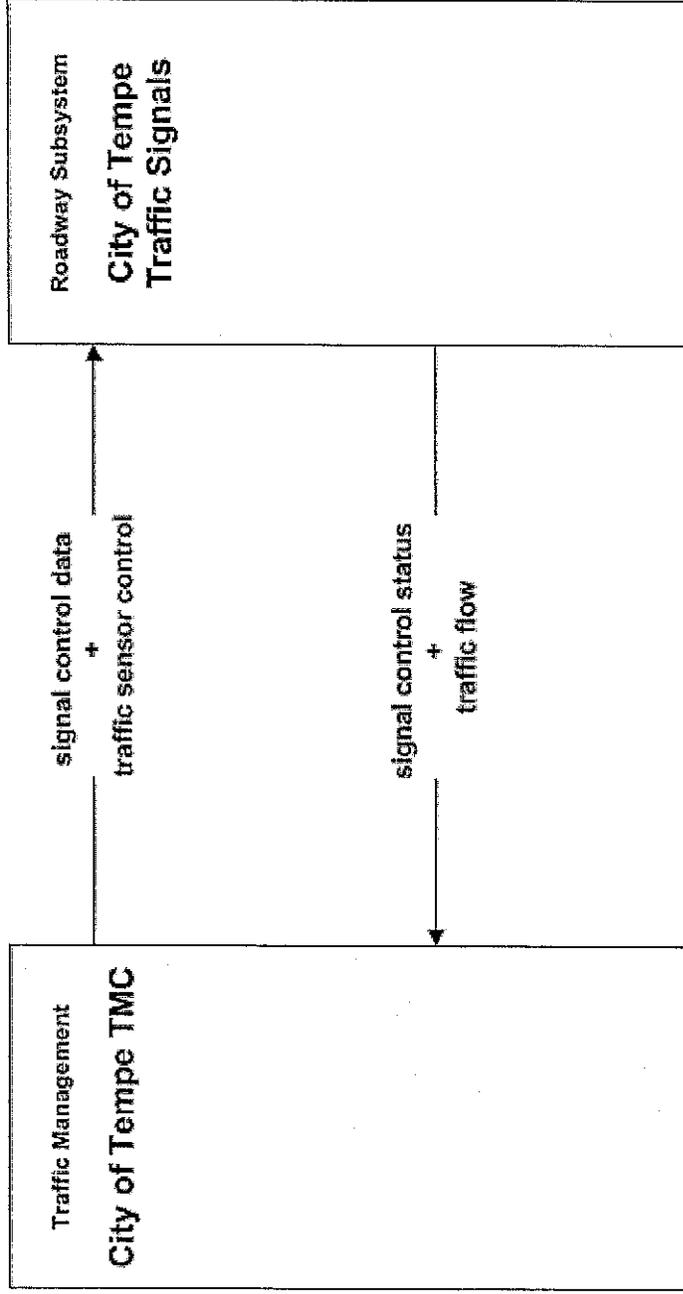
ITS Application from City of Tempe for Rural Road Fiber Installation (north)

All Market Packages Market Packages by Stakeholder Send Your Comments (ATMS01-13)

ATMS01 - Network Surveillance
City of Tempe



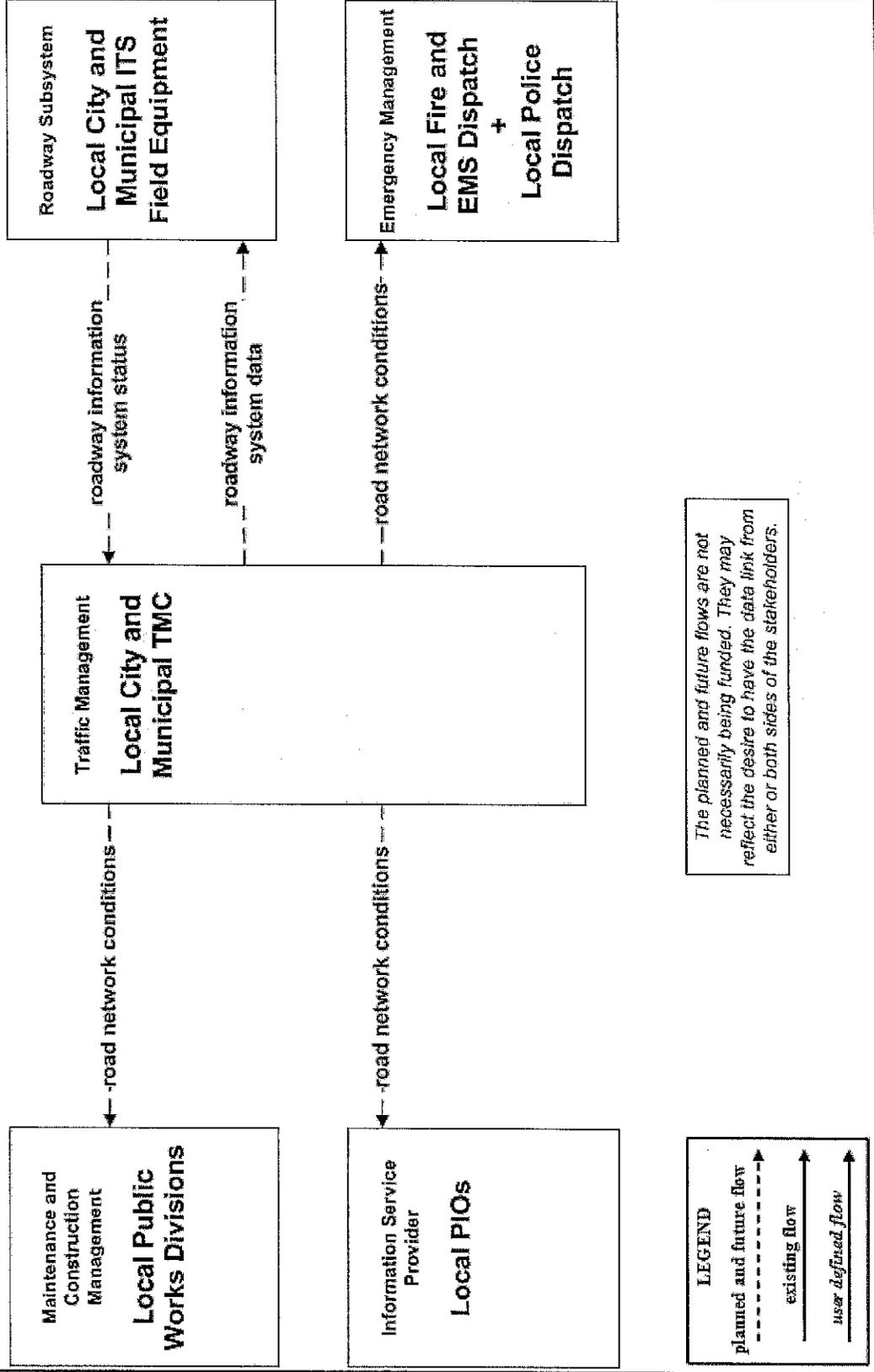
ATMS03 - Surface Street Control City of Tempe



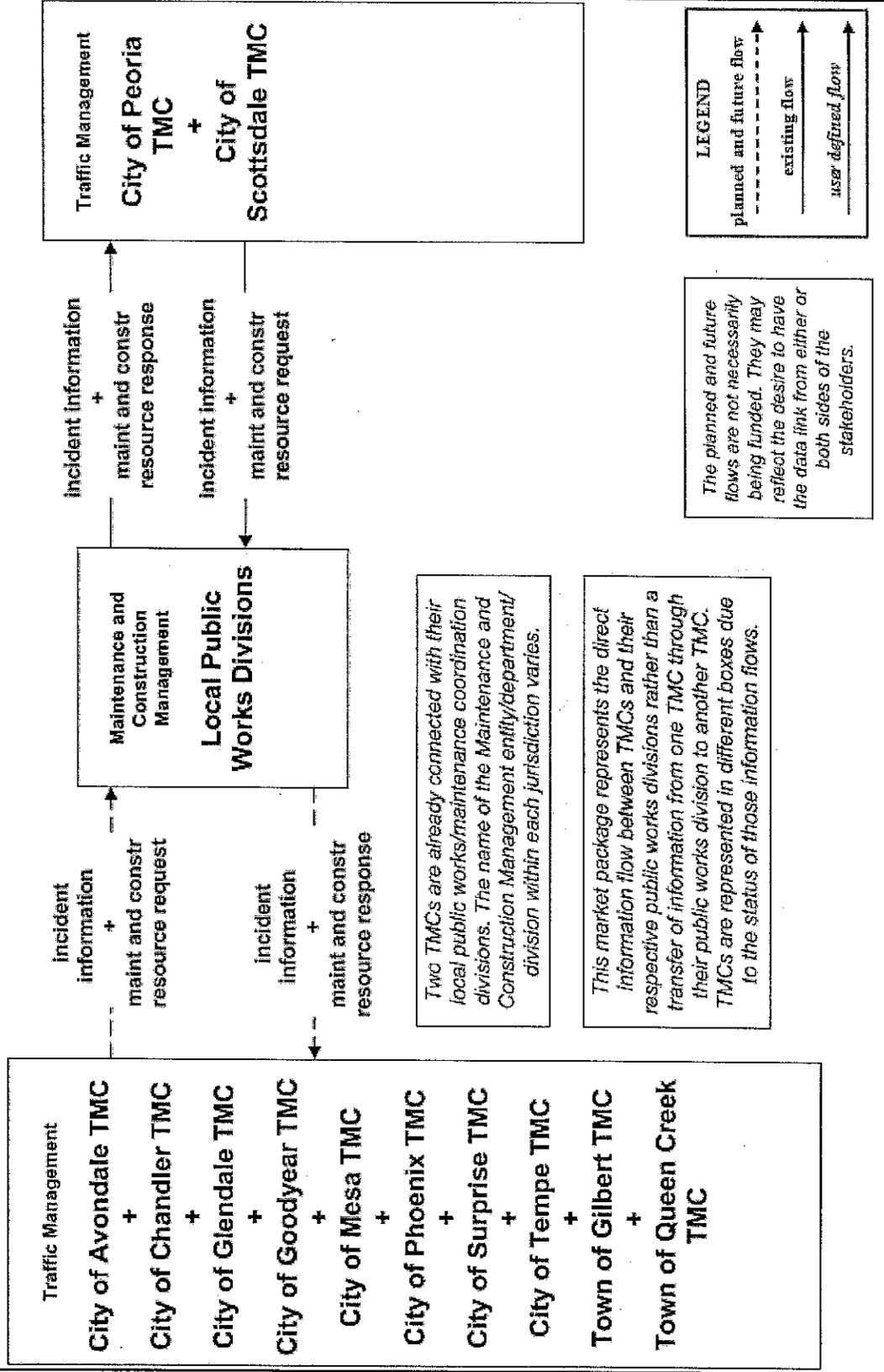
LEGEND

- planned and future flow
- existing flow
- user defined flow

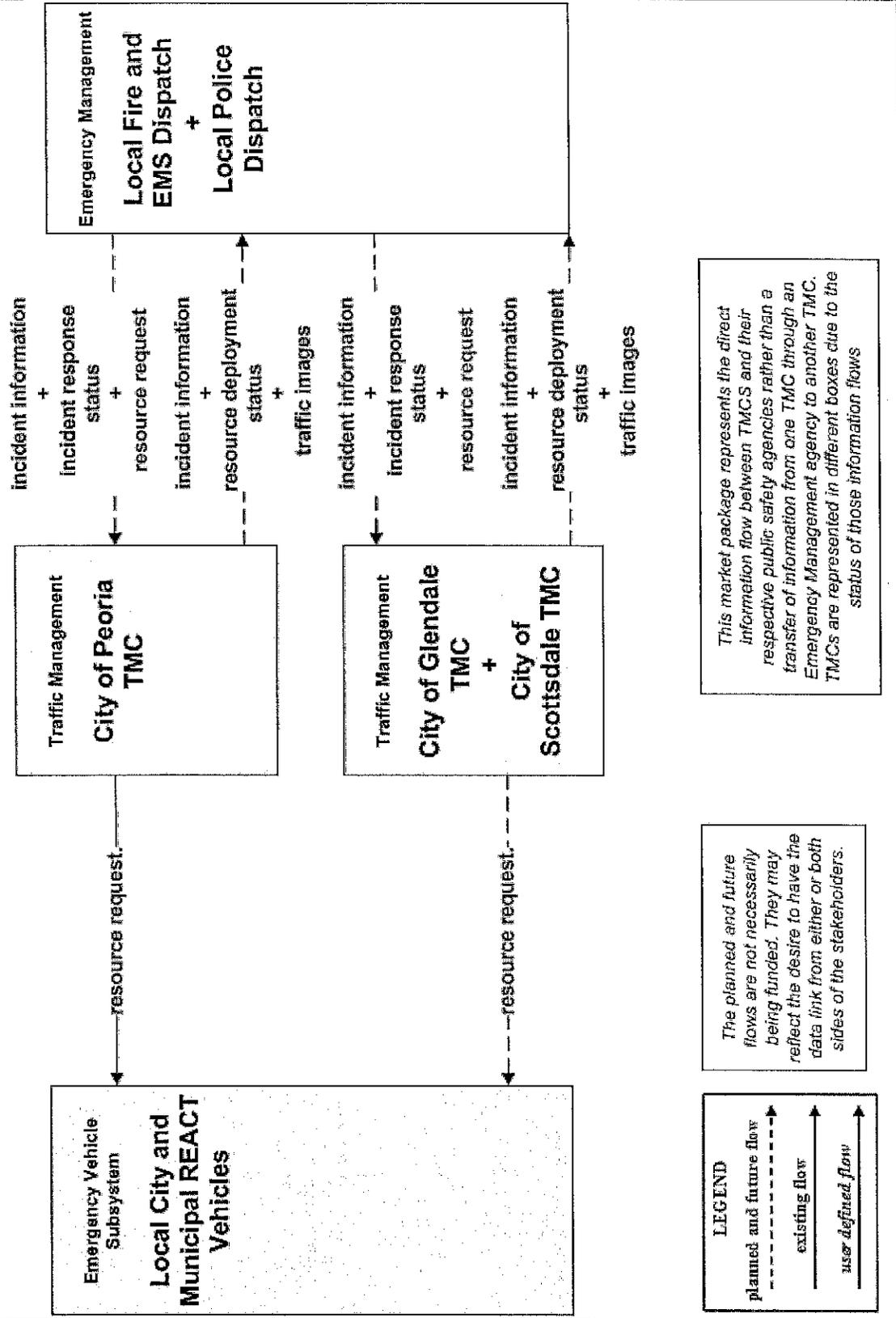
ATMS06 - Traffic Information Dissemination Local Cities and Municipalities - Generic



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



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



Proposed 2016 Project: Rural Road Fiber Installation (north)

Legend

SIGNALS

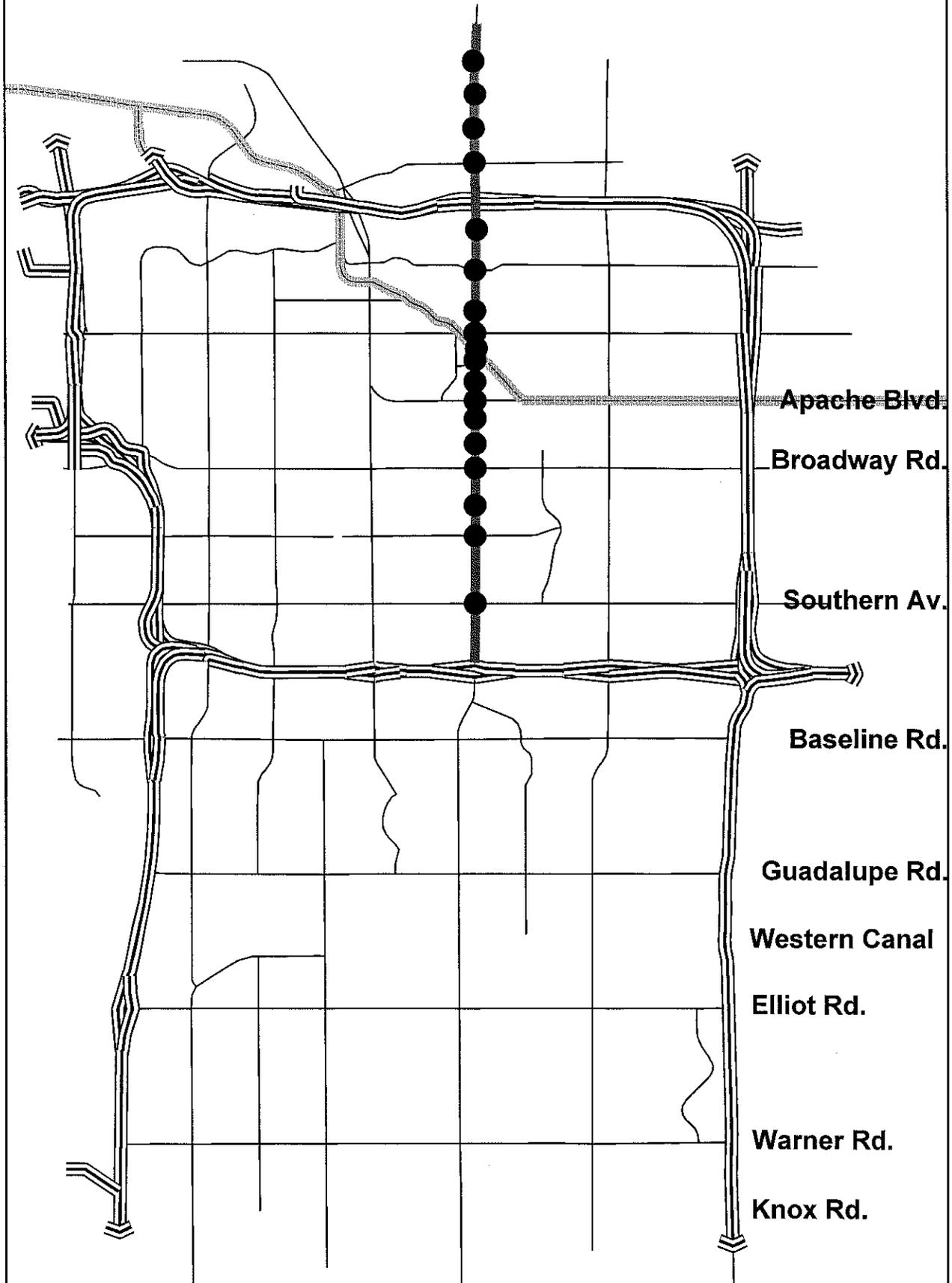
<all other values>



Rural N



Rural North of US 60 Fiber



MAG CMAQ Project

Intelligent Transportation Systems Project

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
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A. SCOPING (15% Preliminary Engineering Design)
(Non-infrastructure projects: Only #2 applies).

1. SITE TOPOGRAPHIC SURVEY	LS	1	\$30,000.00	\$30,000.00	No
2. PROJECT ASSESSMENT REPORT or DETAILED WORKPLAN	LS	1	\$0.00	\$0.00	No
3. SYSTEMS ENGINEERING ANALYSIS (must address FHWA requirements)	LS	1	\$0.00	\$0.00	No
4. ENVIRONMENTAL DETERMINATION (Infrastructure projects, including technical supporting documents)	LS	1	\$30,000.00	\$30,000.00	No
5. HAZMAT ASSESSMENT	LS	1	\$0.00	\$0.00	No
SUBTOTAL – PROJECT SCOPING COSTS				\$60,000.00	\$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	\$60,000.00	\$60,000.00	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				\$60,000.00	\$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?
<i>Pull Box</i>	<i>EA</i>	<i>15</i>	<i>\$1,800</i>	<i>\$27,000</i>	<i>Yes</i>
<i>Conduit in Dirt</i>	<i>LF</i>	<i>8,467</i>	<i>\$22</i>	<i>\$186,274</i>	<i>Yes</i>
<i>Conduit under Road</i>	<i>LF</i>	<i>6,530</i>	<i>\$32</i>	<i>\$208,960</i>	<i>Yes</i>
<i>Fiber</i>	<i>LF</i>	<i>25611</i>	<i>\$3</i>	<i>\$70,430</i>	<i>Yes</i>
				<i>\$0</i>	<i>Yes</i>
<i>Conduit on Bridge/under sidewalk</i>	<i>EA</i>	<i>7,674</i>	<i>\$38</i>	<i>\$291,612</i>	<i>Yes</i>
<i>Splice Closure Tempe</i>	<i>EA</i>	<i>18</i>	<i>\$600</i>	<i>\$10,800</i>	<i>Yes</i>
<i>Conduit under LRT</i>	<i>EA</i>	<i>100</i>	<i>\$75</i>	<i>\$7,500</i>	<i>Yes</i>
<i>Patch Panel</i>	<i>EA</i>	<i>15</i>	<i>\$1,000</i>	<i>\$15,000</i>	<i>Yes</i>
<i>Splice to Existing Patch Panel</i>	<i>EA</i>	<i>3</i>	<i>\$800</i>	<i>\$2,400</i>	<i>Yes</i>
<i>Fiber Optic Jumper Cables</i>	<i>EA</i>	<i>11</i>	<i>\$25</i>	<i>\$275</i>	<i>Yes</i>
				<i>\$0</i>	<i>Yes</i>
<i>Field Hardened Ethernet Switch - 100 MB</i>	<i>EA</i>	<i>11</i>	<i>\$1,800</i>	<i>\$19,800</i>	<i>Yes</i>
<i>CCTV</i>	<i>EA</i>	<i>1</i>	<i>\$4,000</i>	<i>\$4,000</i>	<i>Yes</i>
				<i>\$0</i>	<i>Yes</i>
<i>A/C Power Receptacle</i>	<i>EA</i>	<i>11</i>	<i>\$50.00</i>	<i>\$550</i>	<i>Yes</i>
<i>Testing/Integration</i>	<i>LS</i>	<i>1</i>	<i>\$8,450.00</i>	<i>\$8,450</i>	<i>Yes</i>
<i>Project Documentation</i>	<i>LS</i>	<i>1</i>	<i>\$4,220.00</i>	<i>\$4,220</i>	<i>Yes</i>
				<i>\$0</i>	<i>Yes</i>
SUBTOTAL - CONSTRUCTION				\$857,271	\$857,271



2. PROCUREMENT (Insert additional rows if necessary)

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
				\$0	No
SUBTOTAL - PROCURMENT				\$0	\$0



3. OTHER ITEMS
(Insert additional rows if necessary)

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
E. TOTAL PROJECT COST (All <u>subtotals</u> + ADOT local projects review fee)				\$1,184,081	\$1,043,081



F. SUMMARY OF FEDERAL AND NON-FEDERAL FUNDS

TOTAL COST FOR PROJECT CONSTRUCTION/IMPLEMENTATION	\$1,184,081
TOTAL COST FOR PROJECT ELIGIBLE FOR FEDERAL REIMBURSEMENT	\$1,043,081
TOTAL FEDERAL FUNDS @ 94.3% (.943 x Total Eligible Cost shown highlighted above)	\$983,626
LOCAL AGENCY MATCHING FUNDS (.057 x Total Cost shown highlighted above)	\$59,456