

MES-ITS-2

## 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 Mesa
2. Contact Name	Avery Rhodes
3. Phone	480.644.4960
4. E-Mail Address	avery.rhodes@mesaaz.gov
5. Mailing Address	PO Box 1466 Mesa, AZ 85211

(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 Mesa for 'East Valley Arterial Congestion Monitoring'

**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
<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

**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 Mesa for 'East Valley Arterial Congestion Monitoring'

**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 Mesa
Other Partnering Agencies	City of Chandler, City of Tempe, Town of Gilbert
ITS Project Title:	East Valley Arterial Congestion Monitoring
Project Category:	Arterial ITS

**B. Project Goals & Objectives**

**Project Goals:**  
 Implement the ability to monitor congestion across jurisdictional boundaries and provide real-time traveler information.

**Objectives:**  
 Expand the Anonymous Re-identification deployments in Mesa and Chandler with the installment of additional ARID devices; Install ARID devices in Tempe and Gilbert; Facilitate the calculation of travel times across city boundaries; Incorporate existing ADOT travel time data with arterial data; and Disseminate travel time, speed and/or congestion levels for East Valley Arterials to the public in the form of an on-line map or arterial signs.

**C. Project Information**

**Project Location:**  
 ARID devices will be installed at approximately one mile spacing along the following corridors:  
 Rio Salado, University, Apache, Broadway, Southern, Baseline, Guadalupe, Elliot, Warner, Val Vista, Lindsay, Gilbert, Cooper, McQueen, Arizona Ave, Alma School, Dobson, Price, McClintock and Rural.

**Scope of the project:**  
 Purchase and install 91 ARID devices in existing traffic signal cabinets throughout the East Valley along with central control software for each partnering agency's TMC. The data from each agency's devices will be in a format to be shared via RADS and disseminated via a web map which may graphically display speed or congestion levels. Travel times to/from various destinations will also be calculated using the shared local agency data as well as existing ADOT data. Travel times could be disseminated via the web or arterial sign.  
 This project will expand a current City of Mesa project which will deploy 80 ARID sensors.

**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	ATMS01, ATMS06, ATMS07	
2. Transit Operations Support	No		
3. Communications	No		
4. Traveler Information	Yes	ATIS01	
5. Archived Data Management	No		
6. ITS for Safety	No		
7. ITS Plans	No		
8. Freeway-Arterial Operations	No		

**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
Amount	\$655,385.00	\$39,615.00	\$695,000.00
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				Jan-2015
Receipt of ADOT project number	Mar-2015	Yes	2	Mar-2015
Initial DCR	Apr-2015	Yes	3	Apr-2015
Final DCR	May-2015	Yes	4	May-2015
30% Preliminary Plans, Cost Estimate and Report	Jul-2015	Yes	6	Jul-2015
60% Preliminary Plans, Cost Estimate and Report	Sep-2015	Yes	8	Sep-2015
Final Preliminary Plans, Cost Estimate and Report	Nov-2015	Yes	9	Oct-2015
Environmental Clearance	Sep-2015	Yes	12	Jan-2016
Utility Clearance	Oct-2015	Yes	10	Nov-2015
Right-of-Way Clearance	Jul-2015	Yes	10	Nov-2015
Approval of IGA	Jan-2016	Yes	14	Mar-2016
Obligation authority of Federal funds	Feb-2016	Yes	14	Mar-2016
Advertised Date	Apr-2016	Yes	1	Apr-2016
Final Deployment	Oct-2016	Yes	5	Sep-2016

< ENTER mm/yyyy -- Project Activity S

**H. System Maintenance and Operations**

Current staff resources available for ITS operations at the local	30.5
Additional staff resources required for fully utilizing features added by	0
Estimated current annual ITS operations & maintenance budget	\$5,678,393
Estimated additional annual operations & maintenance funds required	\$40,000
Estimated DATE from when required additional O&M funds will be	Jul-2018

check project schedule

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 Mesa intends to incorporate the Systems Engineering Analysis in the scope of work for the project's Design Concept Report.  
<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: *DK Cleavenger*  
 Name: DANIEL K. CLEAVENGER  
 Title: TRANSPORTATION DEPARTMENT DIRECTOR (CITY OF MESA)  
 Date: 9/18/12

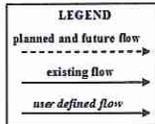
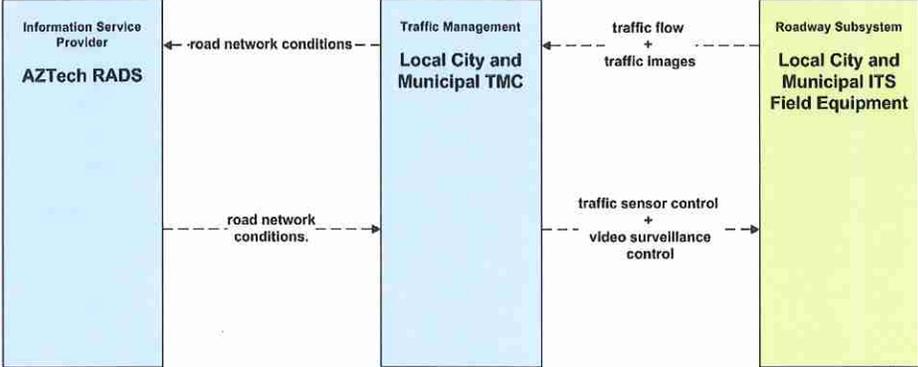
**WILL FILL OUT AFTER QUESTIONS APPROVED.**

**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.

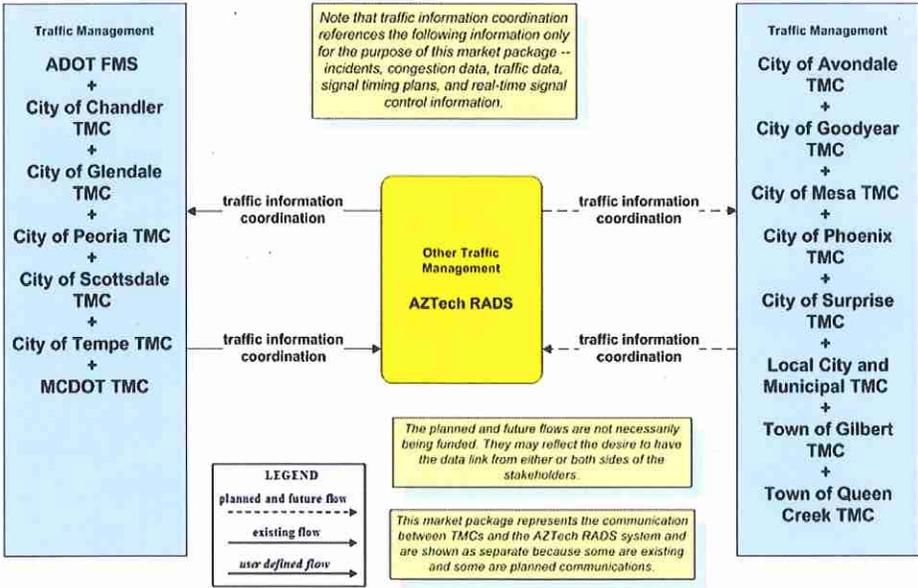
<b>PART A - Contacts and Project Description Fields</b>	<b>Complete?</b>
Contact Information, fields 1 – 5 are complete	
<b>PART B - TIP Listing and CMAQ Score Data</b>	<b>Complete?</b>
1. Traffic Estimate and Roadway Characteristics - Fields a - I are complete	
2. Traffic Coordination Improvements -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

**ATMS01 - Network Surveillance  
Local Cities and Municipalities - Generic**

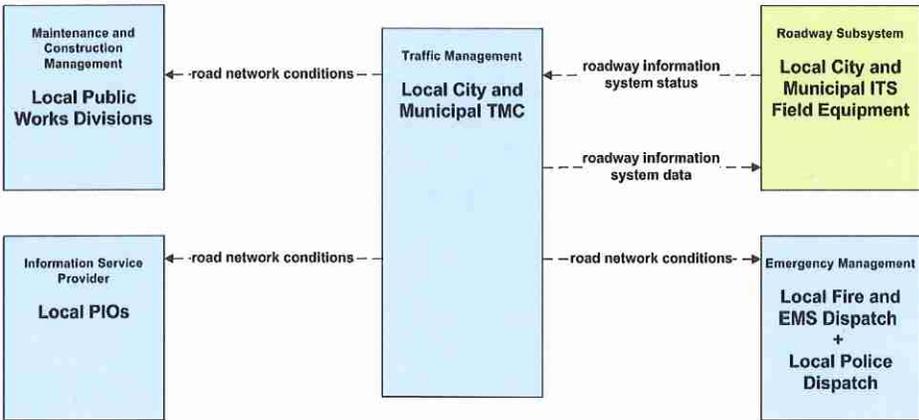


*The planned and future flows are not necessarily being funded. They may reflect the desire to have the data link from either or both sides of the stakeholders.*

**ATMS07 - Regional Traffic Management  
AZTech C2C TMS Network**



**ATMS06 - Traffic Information Dissemination  
Local Cities and Municipalities - Generic**



**LEGEND**

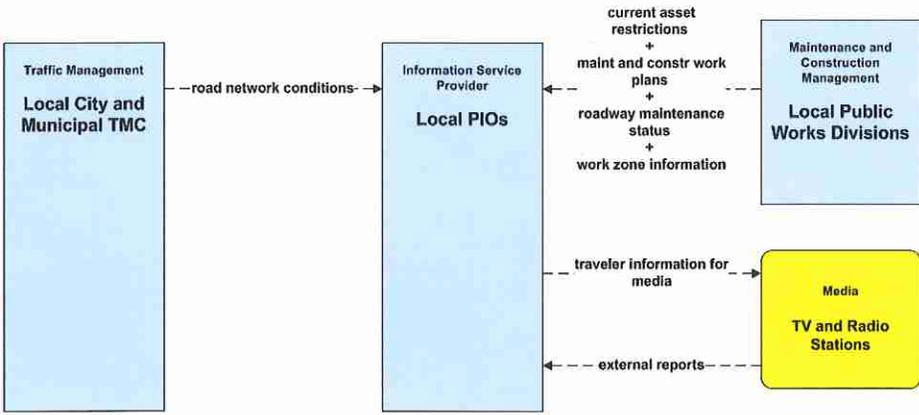
planned and future flow  
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existing flow  
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user defined flow  
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*The planned and future flows are not necessarily being funded. They may reflect the desire to have the data link from either or both sides of the stakeholders.*

**ATIS01 - Broadcast Traveler Information  
Local Cities and Municipalities - Generic**



**LEGEND**

planned and future flow  
----->

existing flow  
----->

user defined flow  
----->

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

09/17/2012

Avery Rhodes, P.E.  
ITS Engineer  
City of Mesa Transportation  
P.O. Box 1466  
Mesa, AZ 85211-1466



Dear Avery Rhodes,

As the jurisdiction's designated representative, I commit that the City of Chandler in cooperation with the City of Tempe and the Town of Gilbert will partner with City of Mesa in developing and completing an 'East Valley Arterial Congestion Monitoring' project. The goal of the project is to install Anonymous Re-Identification Devices (ARID) on major arterial roads to capture travel time information and provide real-time traffic congestion information to the public. The project includes the deployment of thirty (30) ARIDs on Dobson Road, Alma School Road, Arizona Ave, McQueen Road, Warner Road and Elliot Road within the City of Chandler. If the project is selected for federal funding, the City of Chandler agrees to provide our fair cost share of the local match per attached project cost estimate. It is my understanding that the City of Mesa will be the project lead.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel W. Cook".

Daniel W. Cook, P.E.  
Transportation Manager

*Mailing Address*  
Mail Stop 402  
PO Box 4008  
Chandler, Arizona 85244-4008

**Public Works Department**  
**Transportation**  
Telephone (480) 782-3425  
Fax (480) 782-3415  
[www.chandleraz.gov](http://www.chandleraz.gov)

*Location*  
215 East Buffalo Street  
Chandler, Arizona 85225



September 17, 2012

Avery Rhodes  
City of Mesa Transportation  
PO Box 1466  
Mesa, AZ 85211-1466

Dear Mr. Rhodes,

As the Town of Gilbert's designated representative, I certify that the Town of Gilbert is a partnering agency in the East Valley Arterial Congestion Monitoring Project. If the project is selected for CMAQ federal funding, the Town of Gilbert agrees to provide its required local match per the attached project cost estimate.

Sincerely,

A handwritten signature in blue ink, appearing to read "Edgar Medina". The signature is stylized and fluid.

Edgar Medina, P.E.  
Assistant Town Manager – Capital Projects



City's Purpose: Tempe creates outstanding value for those we serve through shared vision, superior service and sustainable practice.

Public Works Purpose: Advancing Tempe's future by providing quality, reliable and sustainable infrastructure systems

September 18, 2012

Avery Rhodes  
City of Mesa Transportation  
P.O. Box 1466  
Mesa, AZ 85211-1466

Dear Avery,

As the jurisdiction's designated representative, I certify that the City of Tempe is a partnering agency in the ITS Application for the City of Mesa's "East Valley Arterial Congestion Monitoring" project. If the project is selected for federal funding, the City of Tempe agrees to include the project in its CIP programming to provide the City's local match.

Sincerely,

A handwritten signature in black ink that reads 'Shelly Seyler'.

Shelly Seyler, P.E.  
Deputy Public Works Director  
Traffic Engineering and Operations Division

**MAG CMAQ Project**

**Intelligent Transportation Systems Project**

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
<b>A. SCOPING (15% Preliminary Engineering Design)</b> (Non-infrastructure projects: Only #2 applies).					
1. SITE TOPOGRAPHIC SURVEY	LS		\$50,000.00	\$0.00	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			\$0.00	No
<b>SUBTOTAL – PROJECT SCOPING COSTS</b>				\$45,000.00	\$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			\$0.00	No
2. Plans, Special Provisions or Bid Manual, Cost Estimate & Schedules.	LS	1	\$65,000.00	\$65,000.00	No
3. GEOTECHNICAL INVESTIGATION and Materials & Pavement Design Report	LS			\$0.00	No
4. DRAINAGE REPORT	LS			\$0.00	No
5. Storm Water Pollution Prevention Plan (SWPPP)	LS			\$0.00	No
<b>SUBTOTAL – PROJECT DESIGN COSTS</b>				\$65,000.00	\$0

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
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**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>City of Chandler Sensors</i>	EA	30	\$5,000	\$150,000	Yes
<i>City of Mesa Sensors</i>	EA	10	\$5,000	\$50,000	Yes
<i>City of Tempe Sensors</i>	EA	24	\$5,000	\$120,000	Yes
<i>Town of Gilbert Sensors</i>	EA	27	\$5,000	\$135,000	Yes
<i>Town of Gilbert Comm upgrades</i>	EA	20	\$1,500	\$30,000	Yes
				\$0	Yes
<b>SUBTOTAL - CONSTRUCTION</b>				\$485,000	\$485,000

**2. PROCUREMENT (Insert additional rows if necessary)**

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
				\$0	No
				\$0	Yes
<b>SUBTOTAL - PROCURMENT</b>				\$0	\$0

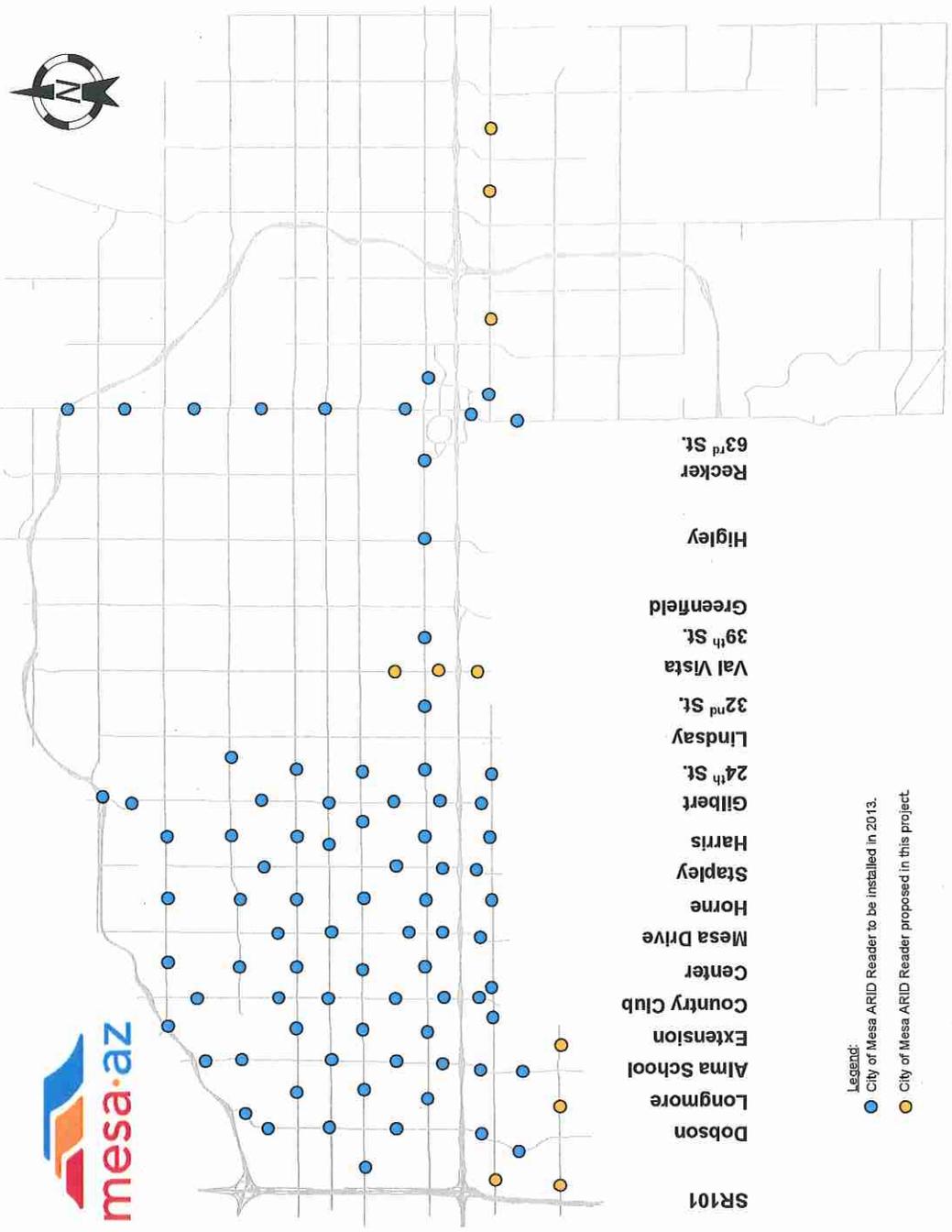
**3. OTHER ITEMS**

(Insert additional rows if necessary)

Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
<i>Central Software</i>	LS	1	\$75,000	\$75,000.00	Yes
<i>Information Dissemination</i>	LS	1	\$100,000	\$100,000.00	Yes
				\$0.00	Yes
<b>SUBTOTAL - OTHER CONSTRUCTION LINE ITEMS</b>				\$175,000.00	\$175,000

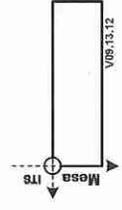


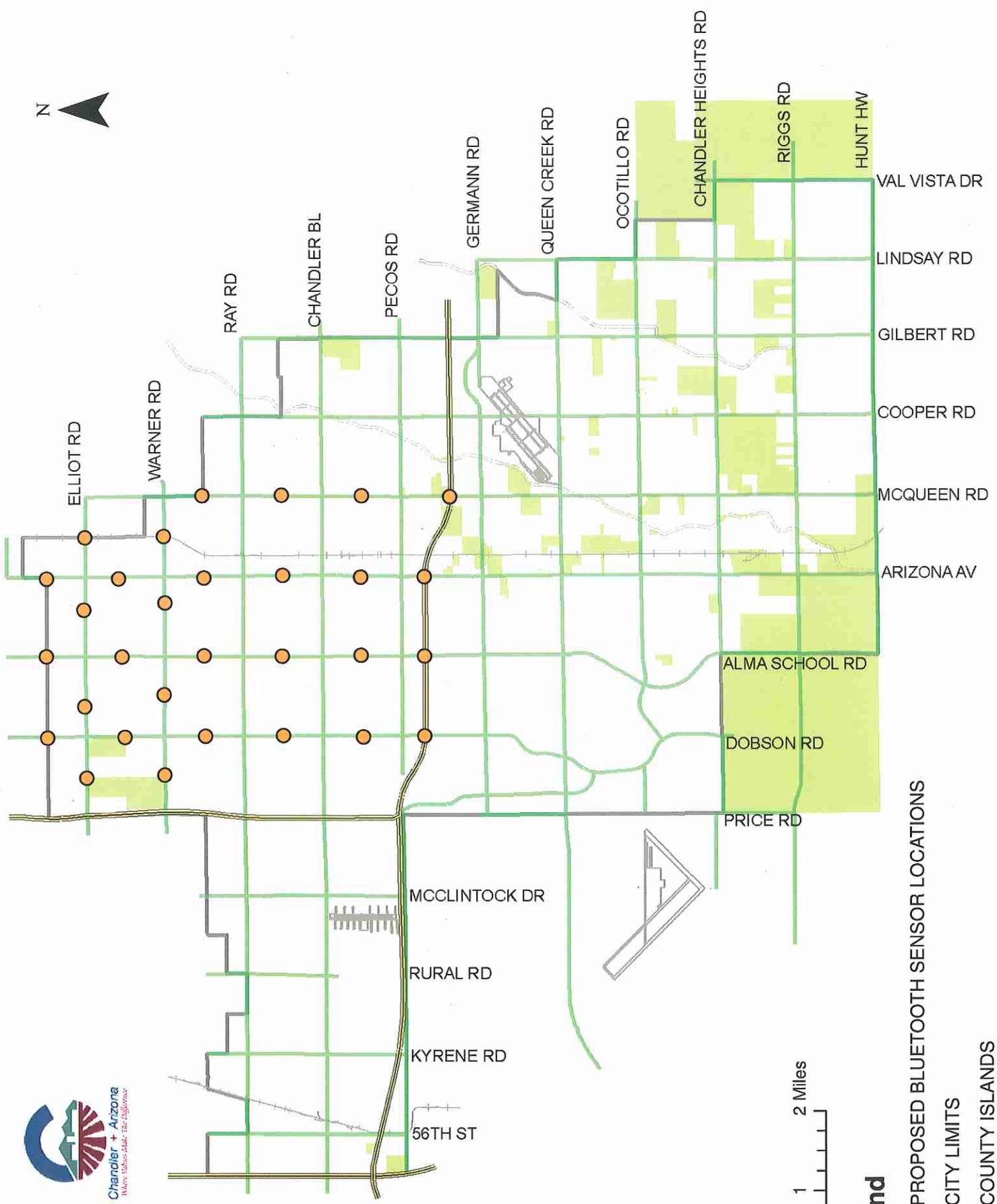
Thomas  
 McDowell  
 McKellips  
 McLellan  
 Brown  
 8<sup>th</sup> St  
 University  
 Main  
 Broadway  
 8<sup>th</sup> Ave.  
 Southern  
 Baseline  
 Guadalupe  
 Elliot  
 Warner  
 Ray  
 Williams Field  
 Pecos  
 Germann



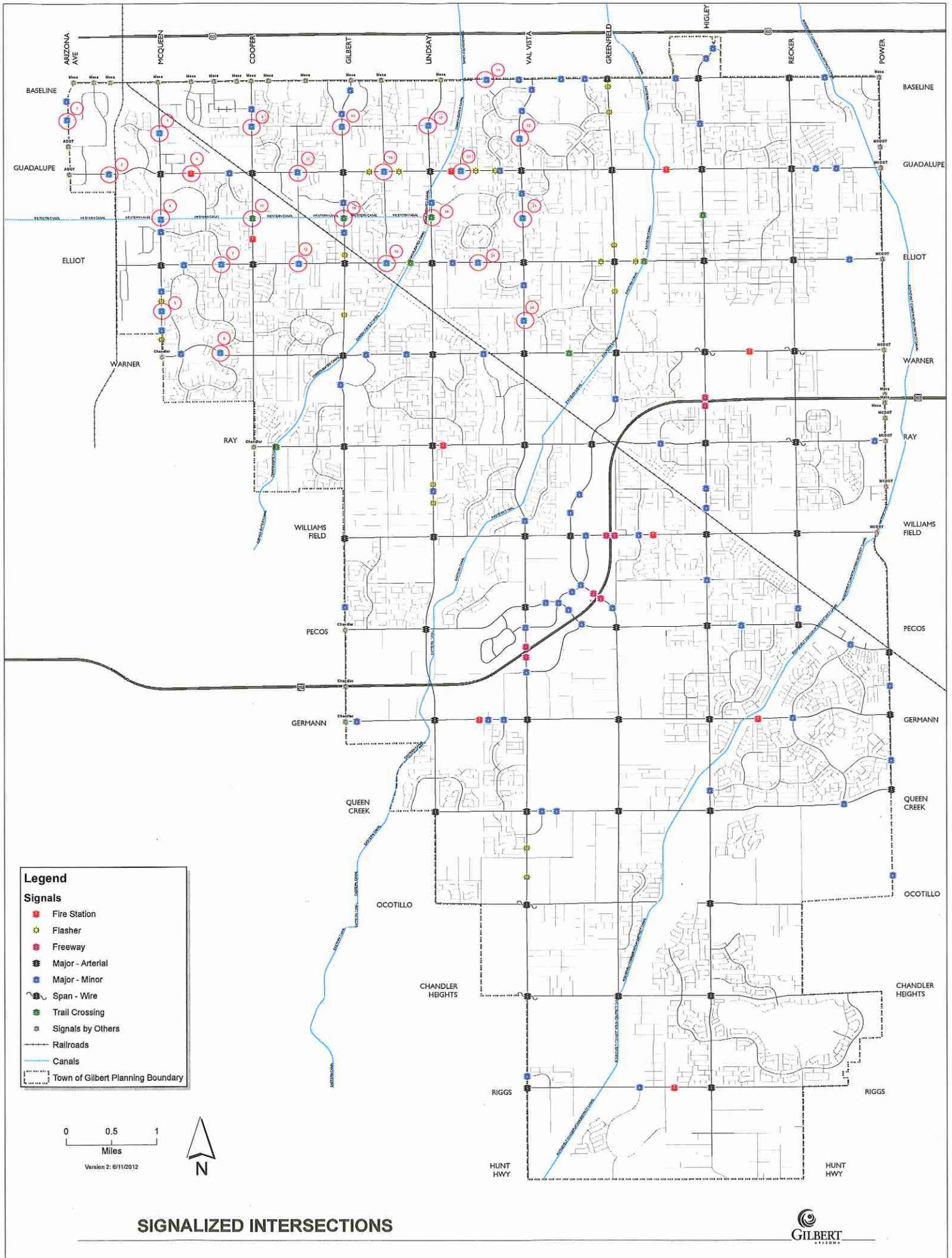
Legend:  
 ● City of Mesa ARID Reader to be installed in 2013.  
 ● City of Mesa ARID Reader proposed in this project

Meridian  
 Signal Butte  
 Crismon  
 Ellsworth  
 Hawes  
 Sossaman  
 72<sup>nd</sup> St.  
 Power





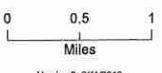
- Legend**
- PROPOSED BLUETOOTH SENSOR LOCATIONS
  - CITY LIMITS
  - COUNTY ISLANDS



**Legend**

**Signals**

- Fire Station
- ★ Flasher
- Freeway
- Major - Arterial
- Major - Minor
- Span - Wire
- Trail Crossing
- Signals by Others
- Railroads
- Canals
- - - Town of Gilbert Planning Boundary



Version 2: 8/11/2012

**SIGNALIZED INTERSECTIONS**

