

CHN-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 Chandler
2. Contact Name	Hong Huo
3. Phone	480-782-3481
4. E-Mail Address	<a href="mailto:hong.huo@chandleraz.gov">hong.huo@chandleraz.gov</a>
5. Mailing Address	Mail Stop 402 PO Box 4008 Chandler, Arizona 85244-4008

(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 Chandler for 'Implementation of Flashing Yellow Arrows'

**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 checked="" 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 Chandler for Implementation of Flashing Yellow Arrows

## 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 Chandler
Other Partnering Agencies	None
ITS Project Title:	Implementation of Flashing Yellow Arrows
Project Category:	Arterial ITS

### B. Project Goals & Objectives

**Project Goals:**  
 To improve traffic safety, signal operations and reduce delays by implementing a Flashing Yellow Arrow operation at protected/permmissive and protected-only left turn signals in the City.

**Objectives:**  
 City of Chandler is planning to add four-section Flashing Yellow Arrows to signalized intersections with protected-only and protected/permmissive left turn signals. This will improve traffic safety and signal efficiency by providing the flexibility to restrict left turns by time-of-day.

### C. Project Information

**Project Location:**  
 114 signalized intersections with protected-only or protected/permmissive left turn arrows in City of Chandler.

**Scope of the project:**  
 Purchase and install 652 four-section flashing yellow arrow signal heads at 114 signalized intersections in City of Chandler. The field installation and rewiring will be done by a contractor and the labor is counted as part of the project cost.

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

<u>ITS applications</u>	<u>Relevant Applications (ENTER: Yes or No)</u>	<u>Applicable ITS Market Packages</u> <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	ATMS03-04	
2. Transit Operations Support	No		
3. Communications	No		
4. Traveler Information	No		

<b>5. Archived Data Management</b>	No	
<b>6. ITS for Safety</b>	Yes	
<b>7. ITS Plans</b>	No	
<b>8. Freeway-Arterial Operations</b>	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	\$633,281.00	\$38,279.00	\$671,560.00
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	1	Feb-2015
Initial DCR	Apr-2015	No		NA
Final DCR	May-2015	No		NA
30% Preliminary Plans, Cost Estimate and Report	Jul-2015	No		NA
60% Preliminary Plans, Cost Estimate and Report	Sep-2015	No		NA
Final Preliminary Plans, Cost Estimate and Report	Nov-2015	No		NA
Environmental Clearance	Sep-2015	Yes	9	Oct-2015
Utility Clearance	Oct-2015	Yes	9	Oct-2015
Right-of-Way Clearance	Jul-2015	Yes	9	Oct-2015
Approval of IGA	Jan-2016	No		NA
Obligation authority of Federal funds	Feb-2016	Yes		Oct-2015
Advertised Date	Apr-2016	Yes	1	Nov-2015
Final Deployment	Oct-2016	Yes	3	Feb-2016

< ENTER mm/yyyy

**H. System Maintenance and Operations**

Current staff resources available for ITS operations at the local  
 Additional staff resources required for fully utilizing features added by  
 Estimated current annual ITS operations & maintenance budget  
 Estimated additional annual operations & maintenance funds required  
 Estimated DATE from when required additional O&M funds will be

10
0
\$1.5 Million
\$0
N/A

check project schedule

**Other comments:**

This project is contingent on the approval of the Traffic Signal Controller Upgrade project being submitted to MAG for approval in 2015.

**I. Systems Engineering Analysis Requirement**

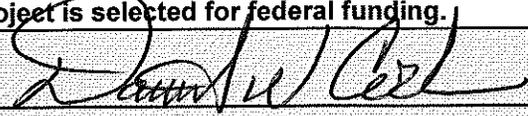
**Commitment to address the federal requirement for Systems Engineering Analysis:**

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

City of Chandler intends to incorporate the Systems Engineering Analysis in the project development process. Details on the ADOT System Engineering Checklist can be found at:  
<http://www.azdot.gov/Highways/ITG/PDF/SystemsEngineeringChecklist.pdf>

**PART B - 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: Daniel W. Cook, P.E.

Title: Transportation Manager

Date: 9-17-12

**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	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	Yes
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	Yes
Name, title and date fields are completed.	Yes

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**MAG CMAQ Project**

**Intelligent Transportation Systems Project**

**C. CONSTRUCTION OR IMPLEMENTATION**

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

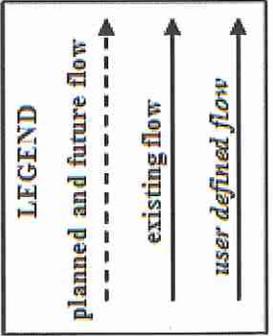
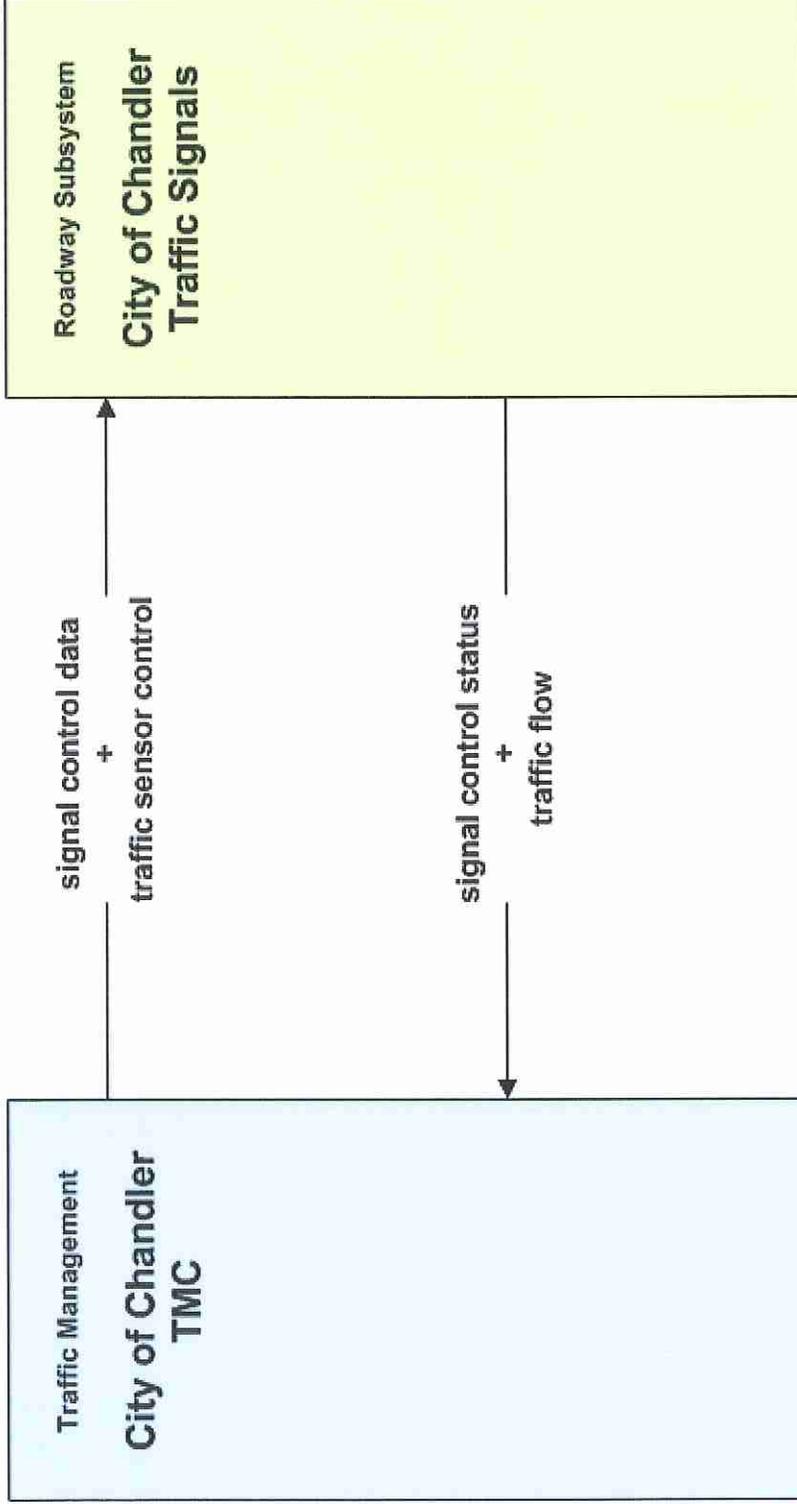
**2. PROCUREMENT (Insert additional rows if necessary)**

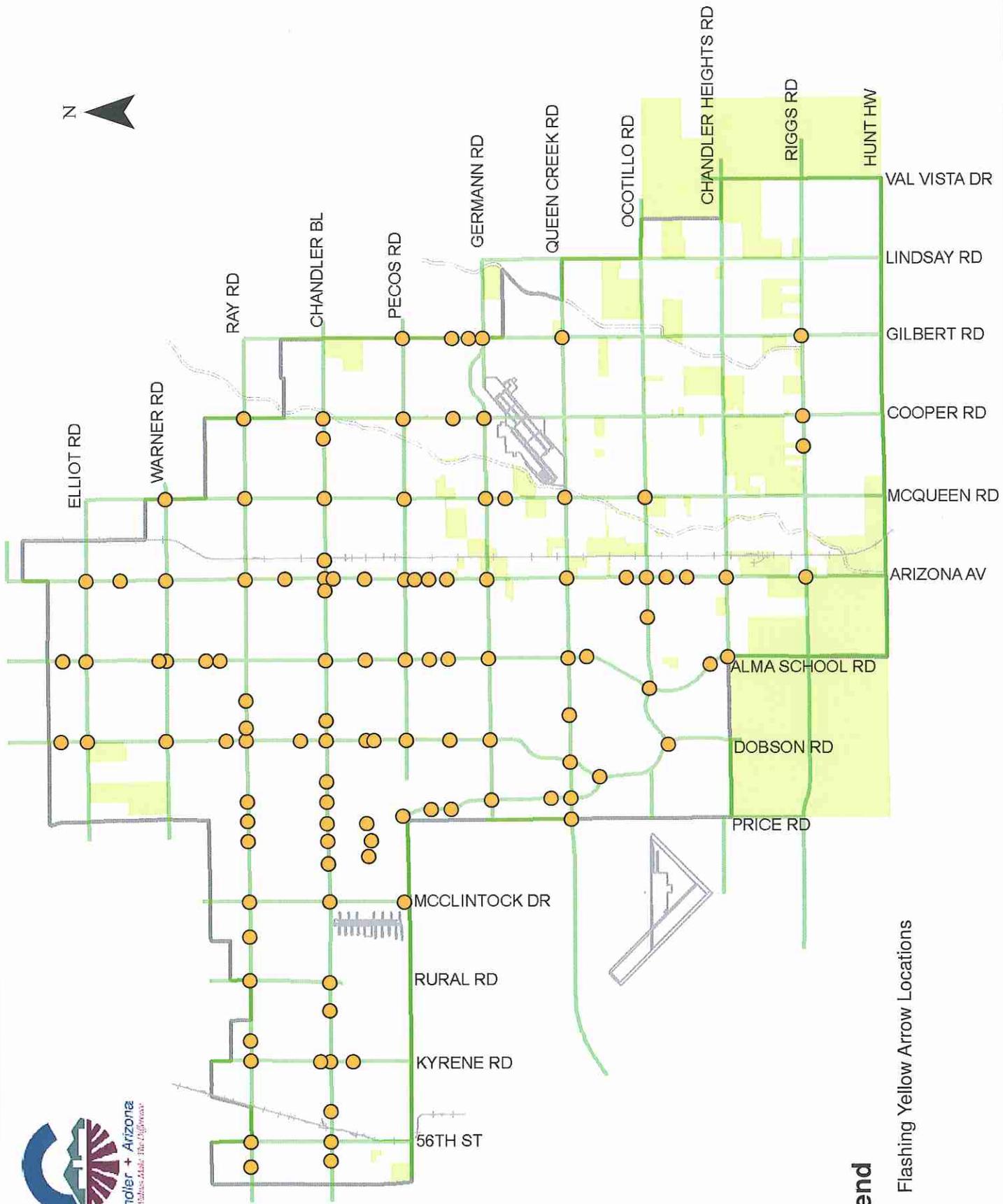
Item Description	Unit	Quant.	Unit Prices	Total	Eligible for CMAQ?
<i>Four-section Signal Heads</i>	EA	652	\$700	\$456,400	Yes
<i>Installation</i>	EA	652	\$330	\$215,160	Yes
<b>SUBTOTAL – PROCURMENT</b>				\$671,560	\$671,560
<b>TOTAL CONSTRUCTION OR IMPLEMENTATION COST</b>				\$ 671,560	\$ 671,560
<b>D. ADOT Fee for PE Reviews and Staff Charges</b>	LS	1	\$5,000	\$5,000	No
<b>TOTAL ADOT Fee COST</b>				\$5,000	\$0
<b>E. TOTAL PROJECT COST</b> (All <u>subtotals</u> + ADOT local projects review fee)				\$676,560	\$671,560

**F. SUMMARY OF FEDERAL AND NON-FEDERAL FUNDS**

<b>TOTAL COST FOR PROJECT CONSTRUCTION/IMPLEMENTATION</b>	<b>\$676,560</b>
<b>TOTAL COST FOR PROJECT ELIGIBLE FOR FEDERAL REIMBURSEMENT</b>	<b>\$671,560</b>
<b>TOTAL FEDERAL FUNDS @ 94.3% (.943 x Total Eligible Cost shown highlighted above)</b>	<b>\$633,281</b>
<b>LOCAL AGENCY MATCHING FUNDS (.057 x Total Cost shown highlighted above)</b>	<b>\$38,279</b>
<b>LOCAL AGENCY FUNDS <u>NOT</u> ELIGIBLE FOR FEDERAL REIMBURSEMENT</b>	<b>\$5,000</b>

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





**Legend**  
● Flashing Yellow Arrow Locations