

PART A - CONTACT INFORMATION	
1. Sponsoring Agency	City of Glendale
2. Contact Name	Kiran Guntupalli
3. Phone	623-930-2951
4. E-Mail Address	kguntupalli@glendaleaz.com
5. Mailing Address	6210 West Myrtle Avenue, Ste. 112, Glendale, AZ 85301
(OPTIONAL)	
<a href="#">GIS Submittal Instructions</a>	

**PART B - CMAQ Score Data**

This part of the form is used to gather project related data to calculate an CMAQ Score and also gather 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 located within a nonattainment area. Please use the map provided in the tab named "Map" to verify that the project is located in a nonattainment area.

**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:

City of Glendale 2012 Traffic Count Map. ADT's adjacent to the fire stations were averaged for the purpose of this application.

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 Update at the MAG Website](#)

**2. Improvements in Traffic Management & Operations.**

a. Enter the pre-improvement (current) avg corridor traffic speed:

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
	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
X	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

NOTE: All ITS projects MUST involve eligible infrastructure improvements.

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

Traffic signal system improvements at a single agency

**PART B - CMAQ Score Data**

- Traffic signal system improvements that apply to more than one agency
- Includes improvements to coordination between arterial and freeway traffic operations
- Project conforms to local land use plans
- Adds features to traffic signals that would better accommodate seniors at pedestrian crossings

**4. Traffic Flow Improvement Due to Project (Not required for Traffic Mgmt & Operations Improvements)**

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

**PART C1 - ITS Project Information**

Please enter information **ONLY** in highlighted cells  
 Links to various websites are provided for additional information and help  
 The worksheet titled "Part C Example" shows an example on how to enter information

ITS Applications that Improve Safety
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**A. Project Title & Sponsor**

<b>Lead Agency</b>	City of Glendale
<b>Other Partnering Agencies</b>	
<b>Project Title</b>	Emergency Vehicle Pre-Emption (EVP), Citywide
<b>Project Category</b>	ITS Applications that Improve Safety

**B. Project Goals & Objectives**

**Project Goals:**  
 The goal is to save lives by reducing emergency vehicle response times by upgrading and expanding the use of emergency vehicle pre-emption (EVP). Additional goals are to reduce secondary collisions and to reduce the total time that the incident is active. The most commonly reported benefits of using EVP include improved response time there by reducing secondary collisions, improved safety, and cost savings.

**Project Objectives:**  
 The City currently has EVP at ten (10) of its 192 signalized intersections and the City has emergency vehicle response times that average 8 minutes-11 seconds. To keep Glendale's accreditation, the department must respond to incidents in less than 8 minutes-42 seconds. Glendale is only 31 seconds away from losing accreditation from the Center for Public Safety Excellence's Accreditation Program, administered by the Commission on Fire Accreditation International (CFAI). For reference, the National Fire Protection Association, an international non-profit organization that creates codes and standards for fire response, says the goal is to respond to a Code 3 emergency "within 5 minutes, 90 percent of the time."  
 An emergency vehicle moving through an intersection will cause delay and impact to traffic, with or without EVP. However, EVP establishes a more controlled impact and an orderly manner with which to re-establish right-of-way and control to the intersection. EVP will reduce delay and reduce travel time for both emergency vehicles and roadway users. EVP reduces travel time variability and improves the communications within the city and with adjacent cities who also respond across city limits.  
 Install/upgrade EVP at the 58 high-priority locations will achieve the City's objective of reducing emergency vehicle response times at a cost that is minimal compared to building new fire stations. The benefits of EVP installation greatly outweigh the costs.

**C. Project Information**

**Project Location Description - a PDF file of a map must be submitted to MAG as an attachment:**  
 The 58 high-priority EVP installation intersections (located citywide) are shown graphically on the attached map. Twenty (48) will be located at arterial to arterial intersections, five (5) will be located at fire station access signals, and five (5) will be located along high priority corridors.

**Scope of the Project:**  
 Install emergency vehicle pre-emption (EVP) systems citywide at 48 arterial to arterial intersections, 5 signalized fire station access points, and 5 additional high priority signalized intersections (58 total locations). Purchase 58 radio units, 3 (EA) installation cables, and 57 vehicle equipment: 37 City of

**PART C1 - ITS Project Information**

Glendale EMS vehicles and 20 additional units for neighboring jurisdictions that respond to Glendale emergencies. One (1) Central Management Software and one (1) CMS Maintenance Agreement will be required. Procurement of EVP equipment will use existing conduit with no ground disturbance.

**PART C1 - ITS Project Information**

**D. Identify Project Components in MAG Regional ITS Architecture**

Service Area	Addressed in this Project (Yes or No)	<a href="http://www.azmag.gov/ITS/">Applicable ITS Service Packages http://www.azmag.gov/ITS/</a>
1. Traffic Management	No	
2. Public Transportation	No	
3. Communications	No	
4. Traveler Information	No	
5. Archived Data Mgmt.	No	
6. ITS for Safety	Yes	EM02
7. ITS Planning	No	
8. Fwy-Arterial Operations	No	

**NOTE: Insert the relevant Architecture Flow Diagrams in worksheet: Part C-ITSArchFlowDiags**

**E. Program Year Preference (enter FY2018 oor FY2019)**

Preferred program FY

**F. Project Budget**

	Federal Cost	Local Match (min 5.7%)	Total Cost
Amount	\$399,832.00	\$311,416.00	\$711,248.00
Cost percentage	56.2%	43.8%	

**G. System Maintenance and Operations**

Current staff resources available to support ITS operations at the local agency (in FTEs)	5
Additional staff resources required for fully utilizing features added by project (in FTEs)	0
Agency's estimated current annual ITS operations & maintenance (O&M) budget	\$613,532
Estimated additional annual O & M funds required for features added by this project	\$63,000
Estimated DATE from when required additional local O&M funds will be available	October 1, 2020

## PART C1 - ITS Project Information

**Other comments:**

The City of Glendale will operate and maintain the equipment. The City commits to funding the necessary \$63,000/year for maintenance costs.

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

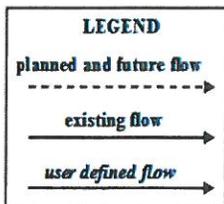
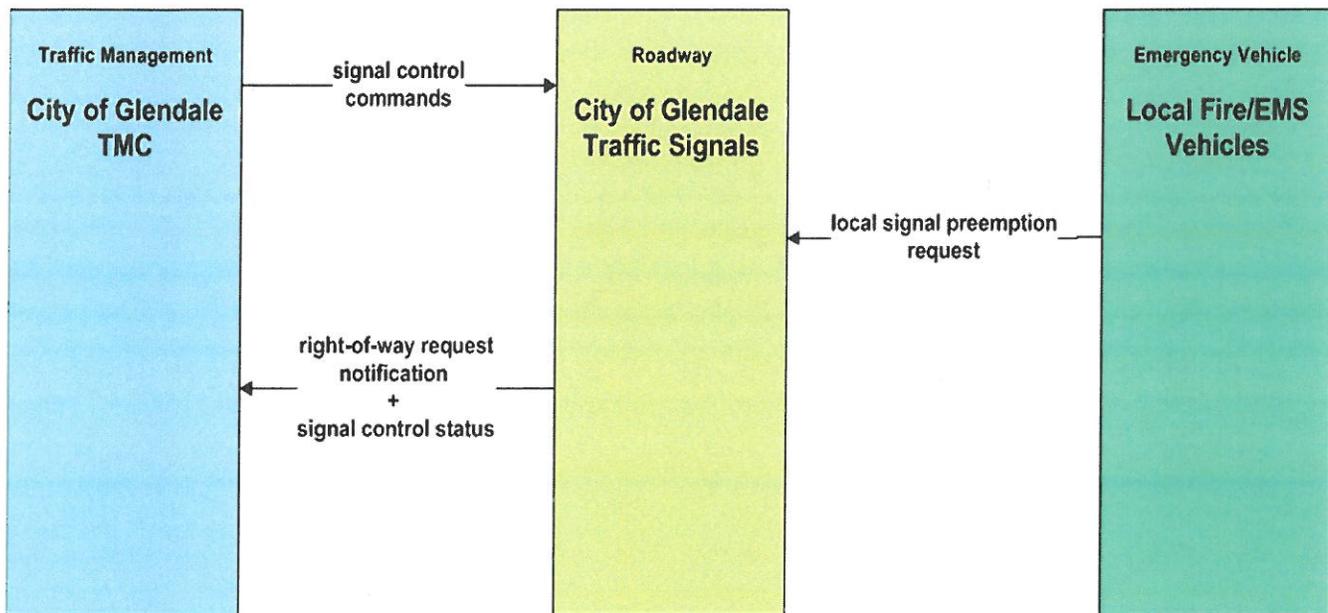
Agency's intent to follow the process described in the 'V' diagram during the project development process

The project sponsor/lead agency City of Glendale intends to incorporate the Systems Engineering Analysis in the scope of work for the projects' Design Concept Report following guidance on the ADOT's System Engineering Checklist provided at: [http://azmag.gov/Documents/ITS\\_2010-11-22\\_ITS-Systems-Engineering-and-Architecture-Compliance-Checklist.pdf](http://azmag.gov/Documents/ITS_2010-11-22_ITS-Systems-Engineering-and-Architecture-Compliance-Checklist.pdf)

## PART C2 - ITS Architecture Flow Diagrams

Service Packages addressed by the proposed ITS project. This is to ensure that the project complies with the Regional ITS Architecture and meets a federal requirement for all federally funded ITS projects.

### EM02 - Emergency Routing City of Glendale



**PART C2 - ITS Architecture Flow Diagrams**

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<b>PART D1 - Detailed Cost Estimate</b>					
					Yes
					Yes
<b>SUBTOTAL - CONSTRUCTION</b>				\$0	\$0



<b>PART D1 - Detailed Cost Estimate</b>					
<b>Item Description</b>	<b>Unit</b>	<b>Quant.</b>	<b>Unit Prices</b>	<b>Total</b>	<b>Eligible for CMAQ?</b>
CONTRACTOR MOBILIZATION	LS	0		\$0.00	Yes
TRAFFIC CONTROL	LS	0		\$0.00	Yes
CONSTRUCTION SURVEY & LAYOUT	LS	0		\$0.00	Yes
CONSTRUCTION CONTINGENCIES	LS	0		\$0.00	Yes
CONSTRUCTION ADMINISTRATION	LS	0		\$0.00	Yes
<b>SUBTOTAL – MOBILIZATION &amp; ADMINISTRATION COSTS</b>				\$ -	\$0
<b>TOTAL CONSTRUCTION OR IMPLEMENTATION COST</b>				\$ 586,248	\$ 570,498

<b>PART D1 - Detailed Cost Estimate</b>					
<b>D. ADOT Fee for PE Reviews and Staff Charges</b>	LS	1	\$30,000	\$30,000	No
<b>TOTAL ADOT Fee COST</b>				\$30,000	\$0
<b>E. TOTAL PROJECT COST</b>				\$711,248	\$570,498
<b>F. SUMMARY OF FEDERAL AND NON-FEDERAL FUNDS</b>					
TOTAL COST FOR PROJECT CONSTRUCTION/IMPLEMENTATION					\$711,248
TOTAL COST FOR PROJECT ELIGIBLE FOR FEDERAL REIMBURSEMENT					\$424,000
TOTAL FEDERAL FUNDS @ 94.3% (.943 x Total Eligible Cost shown highlighted above)					\$399,832
LOCAL AGENCY MATCHING FUNDS (.057 x Total Cost shown highlighted above)					\$24,168
LOCAL AGENCY FUNDS <u>NOT</u> ELIGIBLE FOR FEDERAL REIMBURSEMENT					\$287,248

**PART D2 - TOTAL PROJECT BUDGET AND TIP PROGRAMMING**  
**(All Items are Required, Unless Identified as 'Optional')**

Please provide a cost and programming estimate for the total project (e.g. the cost to complete all planned segment improvements). The design for the project should be programmed at least 1 year, preferably 2 years, prior to construction.

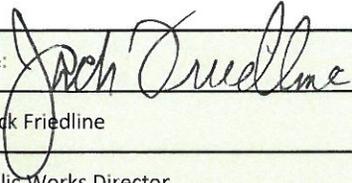
**Section 1 - Total Project Budget**

Cost Estimate for the Project from Part D1	Eligible Federal Cost	Local Cost Only	Total Cost	(Optional) Additional Notes
A. SCOPING (15% Preliminary Engineering Design) (Non-infrastructure projects: Only #2 applies).	\$ -	\$ 95,000	\$ 95,000	
B. FINAL PRELIMINARY ENGINEERING DESIGN - Stages II, III, IV and PS&E (Not applicable to non-infrastructure projects)	\$ -	\$ -	\$ -	
C. CONSTRUCTION OR IMPLEMENTATION				
1. CONSTRUCTION ELEMENTS	\$ -	\$ -	\$ -	
2. PROCUREMENT	\$ 570,498	\$ 15,750	\$ 586,248	
3. OTHER ITEMS	\$ -	\$ -	\$ -	
4. MOBILIZATION AND ADMINISTRATION COSTS (Construction Only)	\$ -	\$ -	\$ -	
SUBTOTAL	\$ 570,498	\$ 15,750	\$ 586,248	
D. ADOT Fee for PE Reviews and Staff Charges	\$ -	\$ 31,500	\$ 30,000	
<b>Total Project Cost</b>	<b>\$ 570,498</b>	<b>\$ 142,250</b>	<b>\$ 711,248</b>	

**Agency Programming**

Please describe the programming of the project in the agency's own CIP/TIP.

Requested MAG TIP Programming	Short Work Description (E.g. Construct HAWK)	Year (Choose One)	Local Cost	CMAQ Cost	Total Cost	Local Share
1. Scoping and PE (Optional)				\$ -	\$ -	
2. Other (Optional)				\$ -	\$ -	
3. Other (Optional)				\$ -	\$ -	
4. Construction or Implementation	EVP Installation	2018	\$ 311,416	\$ 399,832	\$ 711,248	44%
<b>Totals</b>			<b>\$ 311,416</b>	<b>\$ 399,832</b>	<b>\$ 711,248</b>	<b>44%</b>

<b>PART E - SIGNATURE AND CHECKLIST</b>	
<p><b>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.</b></p>	
Signature:	
Name:	Jack Friedline
Title:	Public Works Director
Date:	
<p><b>Checklist - OPTIONAL</b></p> <p>This check list is optional, but is included to facilitate applicant review and verification that all required fields in the form have been completed.</p>	
<b>PART A - Contacts</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 completed	Yes
2. Improvements in Traffic Management & Operations	Yes
3. Other Improvements - As applicable all fields are completed	Yes
4. Traffic Flow Improvement Due to Project	No
<b>PART C1 - ITS Project Information</b>	<b>Complete?</b>
Section A is Complete	Yes
Section B is Complete	Yes
Section C is Complete & A PDF file of map will be attached to the submittal to MAG	Yes
Section D is Complete & All relevant Architecture Flow Diagrams have been inserted in the worksheet	Yes
Section E is Complete	Yes
Section F is Complete	Yes
Section G is Complete	Yes
Section H is Complete	Yes
<b>PART C2 - ITS Architecture Flow Diagrams have been inserted</b>	Yes
<b>PART D1 - Detailed Cost Estimate</b>	Yes
<b>PART D2 - TOTAL PROJECT BUDGET AND TIP PROGRAMMING</b>	Yes
<b>PART E - Signature &amp; Checklist</b>	<b>Complete?</b>

PART E - SIGNATURE AND CHECKLIST	
Form is signed	
Name, title and date fields are completed.	

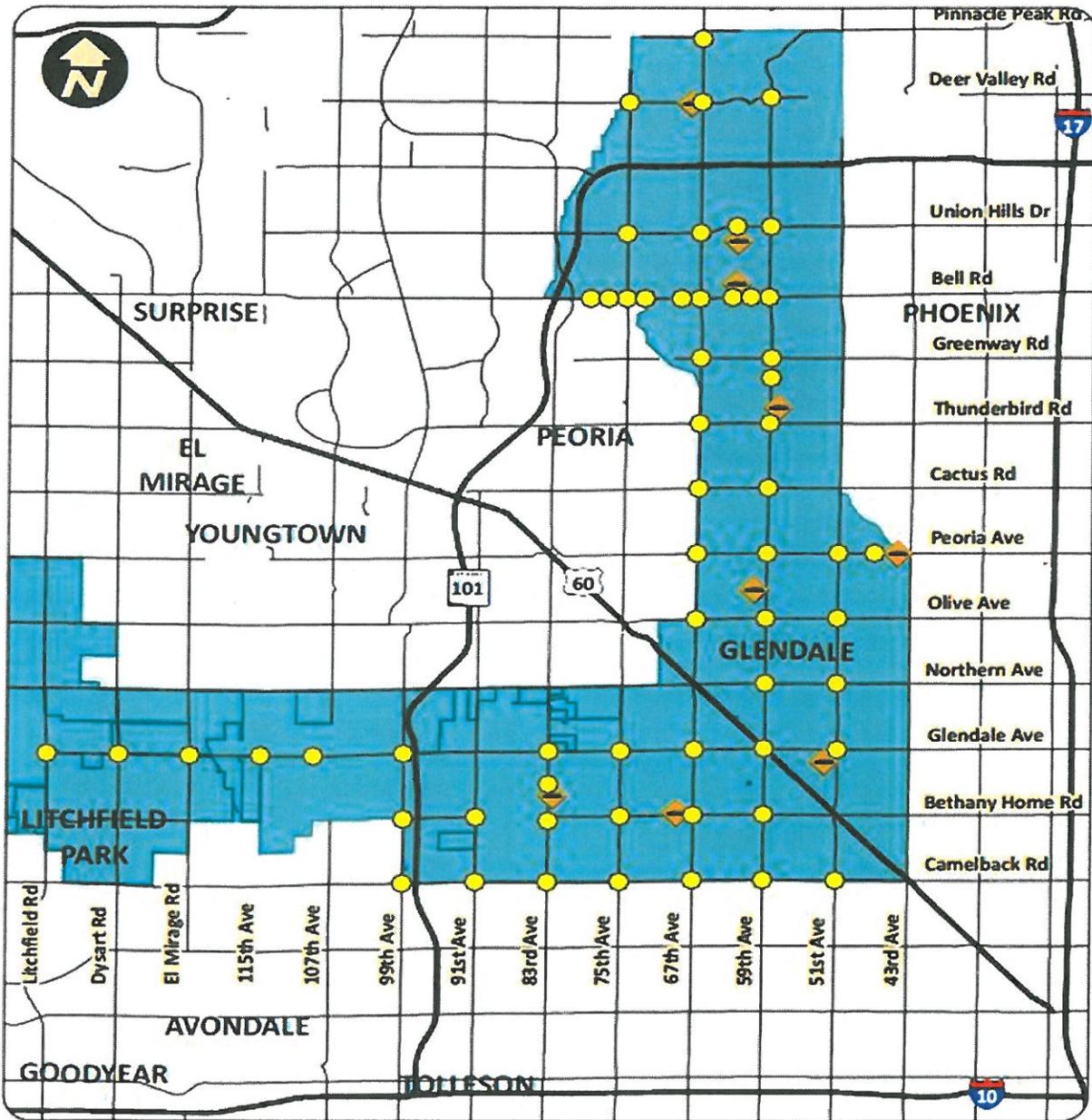


	EXHIBIT TITLE <b>CMAQ Application for Emergency Preemption</b>		LEGEND  Traffic Signal  Fire Station  Glendale City Limits		
	DATE 9/21/2015	PROJECT NO N/A			
	SCALE 1 inch = 2 miles	PAGE NO 1	TOTAL PAGES 1		

Location Map