

<b>Contact Information</b>	
1. Lead Agency	City of Peoria
2. Contact Name	Steve McKenzie
3. Phone	623-773-7994
4. E-Mail Address	steve.mckenzie@peoriaaz.gov
5. Mailing Address	9875 N 85th Ave, Peoria AZ 85345

<b>CMAQ Data</b>	
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.	
<b>Federal Funding Eligibility</b>	
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.	
<b>1. Traffic Estimate and Roadway Characteristics</b>	
a. Current Average Daily Traffic (ADT) on the facility or the nearest parallel facility of a similar facility type:	28,201
b. Please describe how the ADT was estimated:	The ADT is based on tube counts.
c. When was the ADT estimate developed:	2016
d. Name of the roadway section used for the ADT estimate:	Lake Pleasant Parkway/83rd Ave
e. Starting limit of the roadway section:	Union Hills Road
f. Ending limit of the roadway section:	Loop 303
g. Length (miles):	10.3
h. Total number of through lanes on the roadway section:	4
i. Federal Functional Classification of the roadway section:	Principal Arterial - Other
	<a href="#">Link to ADOT Functional Classification Maps</a>

**CMAQ Data**

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

a. Enter the pre-improvement (current) average corridor traffic speed: 40

b. In the table, check the box 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	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

NOTE: All ITS projects MUST involve eligible infrastructure improvements.

**3. Other Improvements (Check all that apply)**

- Traffic signal system improvements at a single agency
- 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: (populated from #2a) 40

b. Enter the post-improvement average traffic speed of the corridor: 45

## ITS Project Information

Enter information in highlighted cells ONLY. Links to various websites are provided for additional information and help.

### 1. Project Title & Sponsor

a. Project Title	Adaptive Signal Control on Lake Pleasant Parkway/83rd Ave
b. Lead Agency	City of Peoria
c. Other Partnering Agencies	

### 2. Project Type

Prioritize SMO Buckets for the funding application	
First Priority	Bucket #3 – Local Priority Corridors
Second Priority	(Please Select a Bucket)
Third Priority	(Please Select a Bucket)

### 3. Project Goals & Objectives

a. Project Goals	Improve traffic flow, efficiency & safety through the application of real-time adaptive signal control capable of continuously adjusting signal timing based on real-time measurements of changes in traffic volumes, thus reducing emissions, increasing full efficiency and reducing travel times along the corridor. Especially effective in dealing with unpredictable surges of traffic, seasonal fluctuations, or the potential of an alternate route in the event I-17 has a closure.
b. Project Objectives	Ability to adjust signal operations to real-time changes in conditions; Reduce delays; Reduce travel time; Improve safety to multiple modes of vehicles, pedestrians, transit and emergency services; Reduce vehicle emissions by reducing stops and delays at arterial intersections.

### 4. Project Information

a. Project location description	21 existing and 1 future signalized intersections over 10.3 miles on Lake Pleasant Parkway and 83rd Ave from just north of Union Hills Drive to the Loop 303.
	Note: a PDF file of a map must be submitted to MAG as an attachment.
b. Scope of the project	Procurement of a distributed adaptive signal control technology (ASCT) system and associated detection and travel time system into existing traffic signal controller cabinets, attached to existing poles, and utilizing existing communications infrastructure to link the intersections. No ground disturbance is planned, and the procurement process and documents will be modeled after the recently completed Bell Rd ASCT Pilot .

## ITS Project Information

### 5. Identify Project Components in MAG Regional ITS Architecture

Service Area	Addressed in this Project? <small>(Dropdown: Y/N)</small>	<a href="#">Applicable ITS Service Packages</a>
Traffic Management	Yes	ATMS01, 03 and 07
Maintenance and Construction	No	
Public Transportation	No	
Traveler Information	No	
Emergency Management	No	
Archived Data Management	No	

NOTE: Insert the relevant ITS Architecture flow diagram in the "ITS Architecture" worksheet.

### 6. Quantitative Criteria

Enter Quantitative Criteria for Bucket(s) selected in Section 2 "Project Type"

Average Daily Traffic (ADT) from 'CMAQ Data' tab in this funding application.	-
Crashes Per Mile Per Year (MAG Will Complete)	
Maximum Peak Period Travel Time Index (MAG Will Complete)	
Percentage network communication connectivity to traffic signals & ITS devices.	100%
Regional Priority Corridor Ranking (Enter shares of work in "Regional Priority - Top 100")	
Latest year of your agency's Operations/Management Center upgrade.	2019

### 7. Program Year Preference

Preferred Program Year 2022

ITS Project Information				
8. Project Budget by SMO Strategy				
Strategies for Bucket #1 – ICM Corridors	Federal Cost	Local Match (min 5.7%)	Total Cost	Share of Total Project
2-Real-time CCTV monitoring capabilities at all major-major arterial intersections on ICM corridors				
3-Vehicle and pedestrian actuated detection at all signalized intersections to support signal operations and real-time collection of data collection, including data on turning movement counts				
11-Regional Asset Upgrade/Replace Program - ICM Corridors & Priority Arterials				
<b>Total</b>				
<b>Cost Percentage</b>				
Strategies for Bucket #2 – Regional Priority Arterials	Federal Cost	Local Match (min 5.7%)	Total Cost	Share of Total Project
8-Real-time visual monitoring capability at all major-major intersections on Priority Arterials				
9-Additional detection at signalized intersections for real-time collection of data, including turning movement counts stored by individual agencies and archived in RADS				
10-Reliable communications between TMCs and major-major intersections to facilitate remote management of traffic operations - Adds both fiber and wireless infrastructure				
11-Regional Asset Upgrade/Replace Program - ICM Corridors & Priority Arterials				
<b>Total</b>				
<b>Cost Percentage</b>				
Strategies for Bucket #3 – Local Priority Corridors	Federal Cost	Local Match (min 5.7%)	Total Cost	Share of Total Project
12-Local priority ITS projects	\$ 1,392,740.00			100%
<b>Total</b>	\$ 1,392,740.00	\$ 175,205.00	\$ 1,567,945.00	100%
<b>Cost Percentage</b>	88.8%	11.2%		

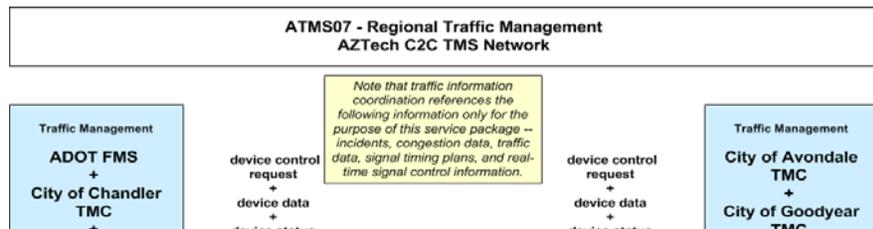
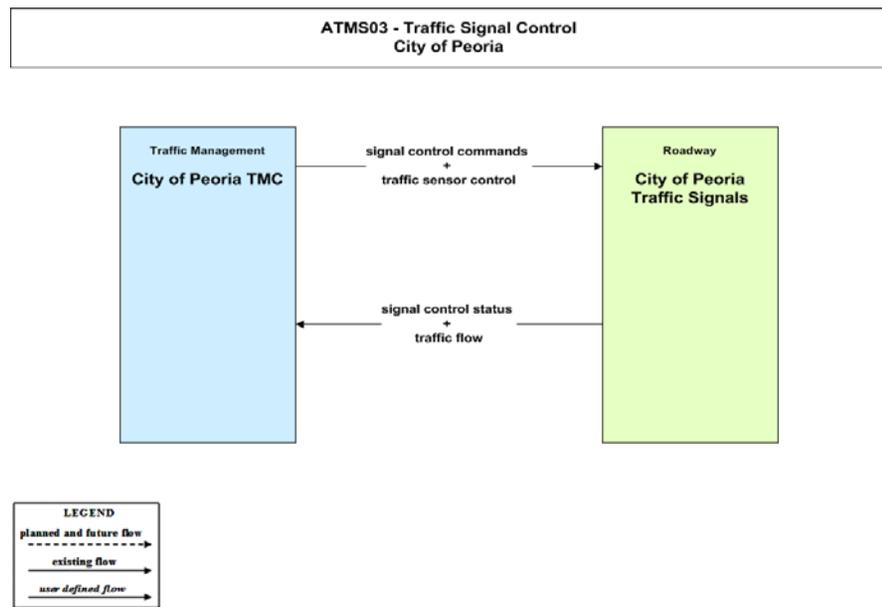
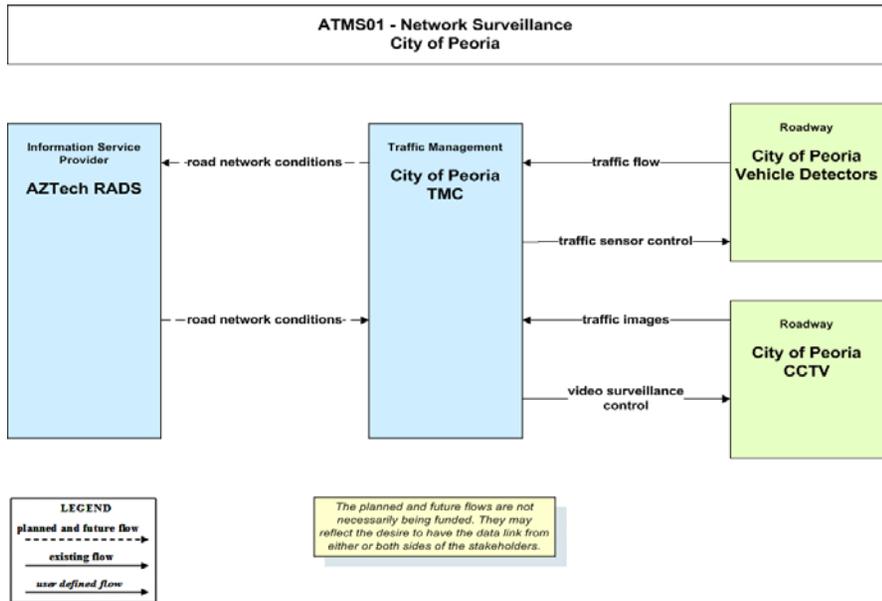
<b>ITS Project Information</b>	
<b>9. System Maintenance and Operations</b>	
a. Current staff resources available to support ITS operations at the local agency (in FTEs)	<input style="width: 80px;" type="text" value="2"/>
b. Additional staff resources required for fully utilizing features added by project (in FTEs)	<input style="width: 80px;" type="text" value="0"/>
c. Agency's estimated current annual ITS operations & maintenance (O & M) budget	<input style="width: 80px;" type="text" value="\$200,000"/>
d. Estimated additional annual O & M funds required for features added by this project	<input style="width: 80px;" type="text" value="\$10,000"/>
e. Estimated DATE from when required additional local O & M funds will be available	<input style="width: 80px;" type="text" value="10/2023"/>
f. Other comments	<div style="border: 1px solid black; height: 100px; background-color: #e0e0e0;"></div>
<b>10. Systems Engineering Analysis Requirement</b>	
<p><b>Commitment to address the federal requirement for Systems Engineering Analysis:</b>                      Agency's intent to follow the process described in the 'V' diagram during the project development process.  <a href="#">ADOT Systems Engineering Checklist</a></p>	
<p><b>The project sponsor/lead agency of this application intends to incorporate the Systems Engineering Analysis in the project's scope of work, following guidance on the ADOT's System Engineering Checklist.</b></p>	<p><input checked="" type="checkbox"/> Yes, the agency intends to follow the process.</p>

## ITS Architecture Flow Diagram

All relevant ITS Architecture Flow Diagrams MUST be inserted below for the relevant ITS 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.

Find the relevant Service Packages addressed by the project in the MAG ITS Architecture (found in the link below). Copy and paste the graphic in the space provided.

[MAG Regional ITS Architecture](#)



PROJECT COST ESTIMATE WORKSHEET (Cost Estimates Are Required Regardless of Programming)									
DESIGN	REQUESTED PROGRAMMING (Complete if item will be programmed in the MAG TIP)	Location Description	Lake Pleasant Parkway & 83rd Ave, from Loop 303 to Union Hills Dr (10.3 miles, 22 signals)						
		Work Description	Procurement and deployment of adaptive signal control technology (ASCT) system						
		Funding Source	Local						
		Preferred Year to Program Work	2022						
	COST ESTIMATE FOR DESIGN		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL
	PRELIMINARY ENGINEERING (15% plans) (Required for Budget)	Topographic Survey	LS			\$ -	No	-	-
		Project Assessment Report or Detailed Workplan	LS	1	8,000	\$ 8,000.00	No	-	8,000
		Systems Engineering Analysis (must address FHWA requirements)	LS	1	4,000	\$ 4,000.00	No	-	4,000
		Federal Project Environmental Determination	LS	1	8,000	\$ 8,000.00	No	-	8,000
		HAZMAT Assessment	LS			\$ -	No	-	-
SUBTOTAL - PRELIMINARY ENGINEERING COSTS					\$ 20,000.00		-	20,000	
FINAL DESIGN (30, 60, 95, 100% plans) (Required for Budget)	Right-of-Way Acquisition	LS			\$ -	No	-	-	
	Plans, Specifications, Cost Estimates, Bidding	LS	1	40,000	\$ 40,000.00	No	-	40,000	
	Geotechnical Report	LS			\$ -	No	-	-	
	Drainage Report	LS			\$ -	No	-	-	
SUBTOTAL - FINAL DESIGN COSTS					\$ 40,000.00		-	40,000	
TOTAL PRELIMINARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING					\$ 60,000.00		-	60,000	
PROCUREMENT	REQUESTED PROGRAMMING (Complete if item will be programmed in the MAG TIP)	Location Description	Lake Pleasant Parkway & 83rd Ave, from Loop 303 to Union Hills Dr (10.3 miles, 22 signals)						
		Work Description	Procurement and deployment of adaptive signal control technology (ASCT) system						
		Funding Source	CMAQ						
		Preferred Year to Program Work	2022						
	COST ESTIMATE FOR PROCUREMENT		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL
	PROCUREMENT COSTS	System Procurement & Installation	EA	1	1,134,000	\$ 1,134,000.00	Yes	1,069,362	64,638
		Place for entering item #2	EA			\$ -	Yes	-	-
		Place for entering item #3	EA			\$ -	Yes	-	-
		Place for entering item #4	EA			\$ -	Yes	-	-
		Place for entering item #5	EA			\$ -	Yes	-	-
Place for entering item #6		EA			\$ -	Yes	-	-	
Place for entering item #7		EA			\$ -	Yes	-	-	
Place for entering item #8		EA			\$ -	Yes	-	-	
Place for entering item #9		EA			\$ -	Yes	-	-	
Place for entering item #10		EA			\$ -	Yes	-	-	
TOTAL - PROCUREMENT					\$ 1,134,000.00		1,069,362	64,638	
CONSTRUCTION	REQUESTED PROGRAMMING (Complete only if Construction will be programmed in the MAG TIP)	Location Description	Lake Pleasant Parkway & 83rd Ave, from Loop 303 to Union Hills Dr (10.3 miles, 22 signals)						
		Work Description	Procurement and deployment of adaptive signal control technology (ASCT) system						
		Funding Source	CMAQ						
		Preferred Year to Program Work	2022						
	COST ESTIMATE FOR CONSTRUCTION		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL
	UTILITY RELOCATIONS (Required for Budget) May be 0 if no Utilities  The cost of utility relocation for the transportation project are eligible for federal aid if the costs/activities involved are directly related to the transportation project. Generally, burying overhead utilities is cost prohibitive.	Relocate 69 (+) Poles	EA			\$ -	Yes	-	-
		Relocate/Underground 12 kv lines	LF			\$ -	Yes	-	-
		Relocate/Underground Irrigation Canal	LF			\$ -	Yes	-	-
		SWG Relocations	LS			\$ -	Yes	-	-
		Telephone/Cable TV Relocations	LS			\$ -	Yes	-	-
Upgrade Railroad Crossings		LS			\$ -	Yes	-	-	
Other Utilities		LS			\$ -	Yes	-	-	
Other Utilities		LS			\$ -	Yes	-	-	
SUBTOTAL - UTILITY RELOCATION COSTS					\$ -		-	-	
CONSTRUCTION (Required for Budget)		Field Installation of Equipment (No Ground Disturbance)	EA	1	220,000	\$ 220,000.00	Yes	207,460	12,540
	Post Design Services (3%)	EA	1	34,020	\$ 34,020.00	Yes	32,081	1,939	
	Example: New Conduit				\$ -	Yes	-	-	
	Example: Intersection conduit work				\$ -	Yes	-	-	
	Example: Wireless Communication Link				\$ -	Yes	-	-	
	Place for entering an additional item #1				\$ -	Yes	-	-	
	Place for entering an additional item #2				\$ -	Yes	-	-	
	Place for entering an additional item #3				\$ -	Yes	-	-	
	Place for entering an additional item #4				\$ -	Yes	-	-	
	Place for entering an additional item #5				\$ -	Yes	-	-	
Place for entering an additional item #6				\$ -	Yes	-	-		
Place for entering an additional item #7				\$ -	Yes	-	-		
Place for entering an additional item #8				\$ -	Yes	-	-		
Place for entering an additional item #9				\$ -	Yes	-	-		
Place for entering an additional item #10				\$ -	Yes	-	-		
SUBTOTAL - CONSTRUCTION COST					\$ 254,020.00		239,541	14,479	
MOBILIZATION AND ADMINISTRATION COSTS	CONTRACTOR MOBILIZATION (Typically 8% of construction cost)			10,160	\$ 10,160.00	Yes	9,581	579	
	TRAFFIC CONTROL (0-8% of construction cost)			20,321	\$ 20,321.00	Yes	19,163	1,158	
	CONSTRUCTION SURVEY & LAYOUT (Typically 1% of construction cost)				\$ -	Yes	-	-	
	CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)			12,701	\$ 12,701.00	Yes	11,977	724	
	CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)			45,723	\$ 45,723.00	Yes	43,117	2,606	
SUBTOTAL - MOBILIZATION & ADMINISTRATION COSTS					\$ 88,905.00		83,837	5,068	
TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING					\$ 342,925.00		323,378	19,547	
ADOT REVIEW FEE	Please enter 'Yes' if your agency is certified accepted by ADOT for construction		No						
	ADOT REVIEW FEE	AGENCY TYPE	RATE	HOURS	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL	
		Contracts and Specs \ Advertise Project	Non CA	55	100	\$ 5,500	No	-	5,500
		District \ Review Stage Submittals	Non CA	50	40	\$ 2,000	No	-	2,000
		Environmental Planning \ Issue Clearance	All	50	40	\$ 2,000	No	-	2,000
		Right of Way \ Issue Clearance	Non CA	55	24	\$ 1,320	No	-	1,320
		Compliance Review \ Compliance Review	Non CA	175	40	\$ 7,000	No	-	7,000
		Project Management Group\ Project Management	Non CA	120	100	\$ 12,000	No	-	12,000
		Project Management Group\ Project Management	CA Only	120	60	\$ 7,200	No	-	7,200
		Utilities and Railroad Section\ Issue Clearance	Non CA	50	24	\$ 1,200	No	-	1,200
SUBTOTAL - ADOT REVIEW FEE					\$ 31,020		-	31,020	
TOTAL COST ESTIMATE					\$ 1,567,945		1,392,740	175,205	

**Budget and Signature Page**

Phase	Location Description	Work Description	Year to be Programmed	Funding Source	Federal Amount	Local Amount	Total	Local Share
Procurement	Lake Pleasant Parkway & 83rd Ave, from Loop 303 to Union Hills Dr (10.3 mil)	Procurement and deployment of adaptive signal control technology (ASCT) system	2022	CMAQ	\$ 1,069,362	\$ 64,638	\$ 1,134,000	5.7%
Design, excludes ADOT review fees	Lake Pleasant Parkway & 83rd Ave, from Loop 303 to Union Hills Dr (10.3 mil)	Procurement and deployment of adaptive signal control technology (ASCT) system	2022	Local	\$ -	\$ 60,000	\$ 60,000	100.0%
Construction	Lake Pleasant Parkway & 83rd Ave, from Loop 303 to Union Hills Dr (10.3 mil)	Procurement and deployment of adaptive signal control technology (ASCT) system	2022	CMAQ	\$ 323,378	\$ 19,547	\$ 342,925	5.7%
<b>Total Programmed</b>					\$ 1,392,740	\$ 144,185	\$ 1,536,925	9.4%
ADOT Design Review Fee					\$ -	\$ 31,020	\$ 31,020	100.0%
<b>Total Cost</b>					\$ 1,392,740	\$ 175,205	\$ 1,567,945	* 11.2%

**Signature: To be signed and scanned with PDF copy that is sent to MAG via email**

As the jurisdiction's manager/administrator or designated representative, I certify that the information contained in this application is accurate and complete and that the local funds for this project will be included in the sponsoring MAG member agency's local current CIP/TIP or budget document if the project is selected for federal funding.

Signature: *Adina Lund*

Name: Adina Lund

Title: Development and Engineering Director

Date: *9/12/19*

● Signalized Intersection

Loop 303

Lake Pleasant Parkway

Happy Valley Road

Lake Pleasant Parkway

Loop 101

Bell Road

