

Contact Information	
1. Lead Agency	Town of Queen Creek
2. Contact Name	Marshall Riegel, P.E.
3. Phone	480-358-3153
4. E-Mail Address	marshall.riegel@queencreek.org
5. Mailing Address	22358 S. Ellsworth Road Queen Creek, AZ 85142

CMAQ 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 facility type:	<input style="width: 100%;" type="text" value="36983"/>
b. Please describe how the ADT was estimated:	<div style="border: 1px solid black; background-color: #e0f0e0; padding: 5px;"> Town of Queen Creek 2016 Multimodel Transportation Master Plan. ADT's were averaged for the purpose of this application. </div>
c. When was the ADT estimate developed:	<input style="width: 100%;" type="text" value="2015"/>
d. Name of the roadway section used for the ADT estimate:	<input style="width: 100%;" type="text" value="Ellsworth Road"/>
e. Starting limit of the roadway section:	<input style="width: 100%;" type="text" value="Germann Road"/>
f. Ending limit of the roadway section:	<input style="width: 100%;" type="text" value="Empire Boulevard"/>
g. Length (miles):	<input style="width: 100%;" type="text" value="5.15"/>
h. Total number of through lanes on the roadway section:	<input style="width: 100%;" type="text" value="6"/>
i. Federal Functional Classification of the roadway section:	<input style="width: 100%;" type="text" value="Principal Arterial - Other"/> Link to ADOT Functional Classification Maps

CMAQ Data

2. Improvements in Traffic Management & Operations

a. Enter the pre-improvement (current) average corridor traffic speed: 35

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 checked="" 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	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) 35

b. Enter the post-improvement average traffic speed of the corridor: 41

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	Performance Measures Phase 1
b. Lead Agency	Town of Queen Creek
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	To upgrade existing traffic signal equipment to provide specific performance measures such as arrivals on red, approach delay, travel times, approach volumes, pedestrian delay, etc by using lane by lane detection.
b. Project Objectives	Utilize upgraded equipment help the Town quickly identify, prioritize, and resolve traffic operations problems.

4. Project Information

a. Project location description	The project limits for this project is Townwide Note: a PDF file of a map must be submitted to MAG as an attachment.
b. Scope of the project	The scope of this project includes upgrading existing video detection equipment with new video detection equipment with capabilities to provide lane by lane performance measures. The project will also upgrade traffic signal cabinets to TS2.

ITS Project Information

5. Identify Project Components in MAG Regional ITS Architecture

Service Area	Addressed in this Project? (Dropdown: Y/N)	Applicable ITS Service Packages
Traffic Management	Yes	ATMS03
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.	50%
Regional Priority Corridor Ranking (Enter shares of work in "Regional Priority - Top 100")	
Latest year of your agency's Operations/Management Center upgrade.	2016

7. Program Year Preference

Preferred Program Year 2021

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				
Total				
Cost Percentage				
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				
Total				
Cost Percentage				
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	\$ 1,550,292.00			100%
Total	\$ 1,550,292.00	\$ 93,708.00	\$ 1,644,000.00	100%
Cost Percentage	94.3%	5.7%		

ITS Project Information	
9. System Maintenance and Operations	
a. Current staff resources available to support ITS operations at the local agency (in FTEs)	<input type="text" value="4"/>
b. Additional staff resources required for fully utilizing features added by project (in FTEs)	<input type="text" value="0"/>
c. Agency's estimated current annual ITS operations & maintenance (O & M) budget	<input type="text" value="\$1,300,000"/>
d. Estimated additional annual O & M funds required for features added by this project	<input type="text" value="\$0"/>
e. Estimated DATE from when required additional local O & M funds will be available	<input type="text" value="N/A"/>
f. Other comments	<div style="border: 1px solid black; height: 80px; background-color: #e0e0e0;"></div>
10. 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. ADOT Systems Engineering Checklist	
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.	<input checked="" type="checkbox"/> Yes, the agency intends to follow the process.

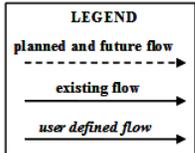
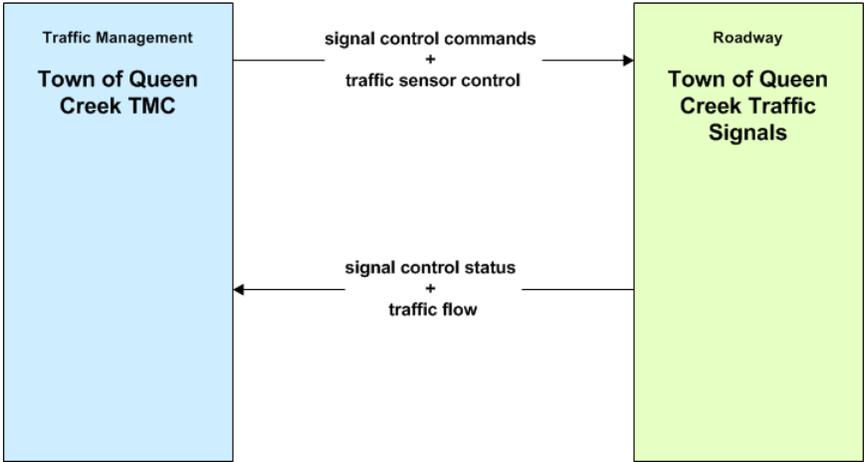
ITS Architecture Flow Diagram

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](#)

ATMS03 - Traffic Signal Control Town of Queen Creek



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	Townwide							
		Work Description	Installation of new video detection systems at signalized intersections and Upgrades of Existing Signal Cabinets to TS2							
		Funding Source	Local							
		Preferred Year to Program Work	2021							
	COST ESTIMATE FOR DESIGN		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL	
	PRELIMINARY ENGINEERING (15% plans) (Required for Budget)	Topographic Survey	LS	1	5,000	\$ 5,000.00	No	-	5,000	
		Project Assessment Report or Detailed Workplan	LS	1	15,000	\$ 15,000.00	No	-	15,000	
		Systems Engineering Analysis (must address FHWA requirements)	LS	1	10,000	\$ 10,000.00	No	-	10,000	
		Federal Project Environmental Determination	LS	1	30,000	\$ 30,000.00	No	-	30,000	
		HAZMAT Assessment	LS	1		\$ -	No	-	-	
SUBTOTAL - PRELIMINARY ENGINEERING COSTS					\$ 60,000.00		-	60,000		
FINAL DESIGN (30, 60, 95, 100% plans) (Required for Budget)	Right-of-Way Acquisition	LS	1		\$ -	No	-	-		
	Plans, Specifications, Cost Estimates, Bidding	LS	1	100,000	\$ 100,000.00	No	-	100,000		
	Geotechnical Report	LS	1		\$ -	No	-	-		
	Drainage Report	LS	1		\$ -	No	-	-		
	SWPPP	LS	1		\$ -	No	-	-		
SUBTOTAL - FINAL DESIGN COSTS					\$ 100,000.00		-	100,000		
TOTAL PRELIMINARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING					\$ 160,000.00		-	160,000		
PROCUREMENT	REQUESTED PROGRAMMING (Complete if Item will be programmed in the MAG TIP)	Location Description	Townwide							
		Work Description	Installation of new video detection systems at signalized intersections and Upgrades of Existing Signal Cabinets to TS2							
		Funding Source	CMAQ							
		Preferred Year to Program Work	2020							
	COST ESTIMATE FOR PROCUREMENT		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL	
	PROCUREMENT COSTS	Place for entering Item #1	EA			\$ -	Yes	-	-	
		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					\$ -		-	-		
CONSTRUCTION	REQUESTED PROGRAMMING (Complete only if Construction will be programmed in the MAG TIP)	Location Description	Townwide							
		Work Description	Installation of new video detection systems at signalized intersections and Upgrades of Existing Signal Cabinets to TS2							
		Funding Source	CMAQ							
		Preferred Year to Program Work	2021							
		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 kv (+) 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)	CONDUCTORS	EA	4	20,000	\$ 80,000.00	Yes	75,440	4,560
	CONTROL CABINET (TRAFFIC SIGNAL TS2)		EA	4	40,000	\$ 160,000.00	Yes	150,880	9,120	
	VIDEO DETECTION SYSTEM		EA	32	30,000	\$ 960,000.00	Yes	905,280	54,720	
	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					\$ 1,200,000.00		1,131,600	68,400		
MOBILIZATION AND ADMINISTRATION COSTS	CONTRACTOR MOBILIZATION (Typically 8% of construction cost)			96,000	\$ 96,000.00	Yes	90,528	5,472		
	TRAFFIC CONTROL (0-8% of construction cost)			60,000	\$ 60,000.00	Yes	56,580	3,420		
	CONSTRUCTION SURVEY & LAYOUT (Typically 1% of construction cost)			12,000	\$ 12,000.00	Yes	11,316	684		
	CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)			60,000	\$ 60,000.00	Yes	56,580	3,420		
	CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)			216,000	\$ 216,000.00	Yes	203,688	12,312		
SUBTOTAL - MOBILIZATION & ADMINISTRATION COSTS					\$ 444,000.00		418,692	25,308		
TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING					\$ 1,644,000.00		1,550,292	93,708		
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	\$ -	No	-	-	
	Utilities and Railroad Section\ Issue Clearance		Non CA	50	24	\$ 1,200	No	-	1,200	
TOTAL COST ESTIMATE					\$ 1,835,020		1,550,292	284,728		

Budget and Signature Page								
Phase	Location Description	Work Description	Year to be Programmed	Funding Source	Federal Amount	Local Amount	Total	Local Share
Construction	Townwide	Installation of new video detection systems at signalized intersections and Upgrades of Existing Signal Cabinets to T52	2021	CMAQ	\$ 1,550,292	\$ 93,708	\$ 1,644,000	5.7%
Total Programmed					\$ 1,550,292	\$ 93,708	\$ 1,644,000	5.7%
ADOT Design Review Fee					\$ -	\$ 31,020	\$ 31,020	100.0%
Total Cost					\$ 1,550,292	\$ 124,728	\$ 1,675,020	7.4%
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: 								
Name: John Kross, ICMA-CM								
Title: Town Manager								
Date:								

Town of Queen Creek Performance Measures Phase 1

