Contact Information	
1. Lead Agency	CITY OF CHANDLER
2. Contact Name	SRINI GOUNDLA
3. Phone	480-782-3481
4. E-Mail Address	SRINIVAS.GOUNDLA@CHANDLERAZ.GOV
5. Mailing Address	215 E BUFFALO ST MS-402 CHANDLER AZ 85225

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:	35,000
b. Please describe how the ADT was estimated:	The ADT was estimated based on the traffic counts from the roadways within the proposed project area.
c. When was the ADT estimate developed:	2018
d. Name of the roadway section used for the ADT estimate:	Alma School Rd, Elliot Rd, Warner Rd, Ray Rd, Chandler Blvd
e. Starting limit of the roadway section:	Alma School Rd - North of Elliot Rd to Queen Creek Rd, Elliot Rd - Dobson Rd to Arizona Ave, Warner Rd - Alma School Rd to Arizona Ave, Ray Rd - Price Rd to Arizona Ave, Chandler Blvd - Price Rd to Alma School Rd.
f. Ending limit of the roadway section:	See above
g. Length (miles):	13
h. Total number of through lanes on the roadway section:	6
i. Federal Functional Classification of the roadway section:	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
	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
X	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
	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
	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

NOTE: All ITS projects MUST involve elegible infrastructure improvements.

3. Other Improvements (Check all that apply)

- [X] Traffic signal system improvements at a single agency
- [ ] Traffic signal system improvements that apply to more than one agency
- [X] Includes improvements to coordination between arterial and freeway traffic operations
- [X] 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: 38

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	Chandler West - Priority Arterials Detection, CCTV and Communication Systems
b. Lead Agency	CITY OF CHANDLER
c. Other Partnering Agencies	NONE

2. Project Type

Prioritize SMO Buckets for the funding application

First Priority	Bucket #2 – Regional Priority Arterials
Second Priority	Bucket #1 – ICM Corridors
Third Priority	Bucket #3 – Local Priority Corridors

3. Project Goals & Objectives

a. Project Goals	Provide and expand capabilities for the priority arterials with required vehicle detection, monitoring capabilities including CCTV and improved communication to the TMC and regional operations with managed/secured gigabit switches. Add data collection capabilities including collection of the turning movement counts. Provide the ability to detect bicycle traffic and safely accommodate bicyclists at signalized intersections. Provide additional minimum green time and green extension only when bicycles are present and therefore reduce delays for vehicles, increase the bicycle use and reduce vehicle trips.
b. Project Objectives	Install video detection systems (31 intersections), CCTV cameras (9 intersections) and communication equipment (17 locations) to provide efficient bicycle and vehicle detection, monitoring capabilities and reliable communication systems.

4. Project Information

a. Project location description	Alma School Rd - North of Elliot Rd to Queen Creek Rd, Elliot Rd - Dobson Rd to Arizona Ave, Warner Rd - Alma School Rd to Arizona Ave, Ray Rd - Price Rd to Arizona Ave, Chandler Blvd - Price Rd to Alma School Rd.
	Note: a PDF file of a map must be submitted to MAG as an attachment.
b. Scope of the project	Install video detection systems (31 intersections), CCTV cameras (9 intersections) and communication equipment (17 locations) to provide efficient bicycle and vehicle detection, monitoring capabilities and reliable communication systems. The field installation, wiring and configuration will be completed by City employees and is not counted as part of the project cost.

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, ATMS01
Maintenance and Construction		
Public Transportation		
Traveler Information		
Emergency Management		
Archived Data Management		

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.	85%
Regional Priority Corridor Ranking (Enter shares of work in "Regional Priority - Top 100")	78.24
Latest year of your agency's Operations/Management Center upgrade.	2017

7. Program Year Preference

Preferred Program Year 2020

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	$ 50,922.00			6%
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	$ 789,291.00			87%
11-Regional Asset Upgrade/Replace Program - ICM Corridors & Priority Arterials	$ 64,124.00			7%
Total	$ 904,337.00	$ 54,663.00	$ 959,000.00	100%
Cost Percentage	94.3%	5.7%		

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	$ 50,922.00			6%
9-Additional detection at signalized intersections for real-time collection of data, including turning movement counts stored by individual agencies and archived in RADS	$ 789,291.00			87%
10-Reliable communications between TMCs and major-major intersections to facilitate remote management of traffic operations - Adds both fiber and wireless infrastructure	$ 64,124.00			7%
11-Regional Asset Upgrade/Replace Program - ICM Corridors & Priority Arterials	$ -			0%
Total	$ 904,337.00	$ 54,663.00	$ 959,000.00	100%
Cost Percentage	94.3%	5.7%		

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	$ 904,337.00	☑ Yes, the agency intents to follow		100%
Total	$ 904,337.00	$ 54,663.00	$ 959,000.00	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)	10
b. Additional staff resources required for fully utilizing features added by project (in FTEs)	0
c. Agency's estimated current annual ITS operations & maintenance (O & M) budget	1.5 Million
d. Estimated additional annual O & M funds required for features added by this project	$0
e. Estimated DATE from when required additional local O & M funds will be available	Jul-20
f. Other comments	

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

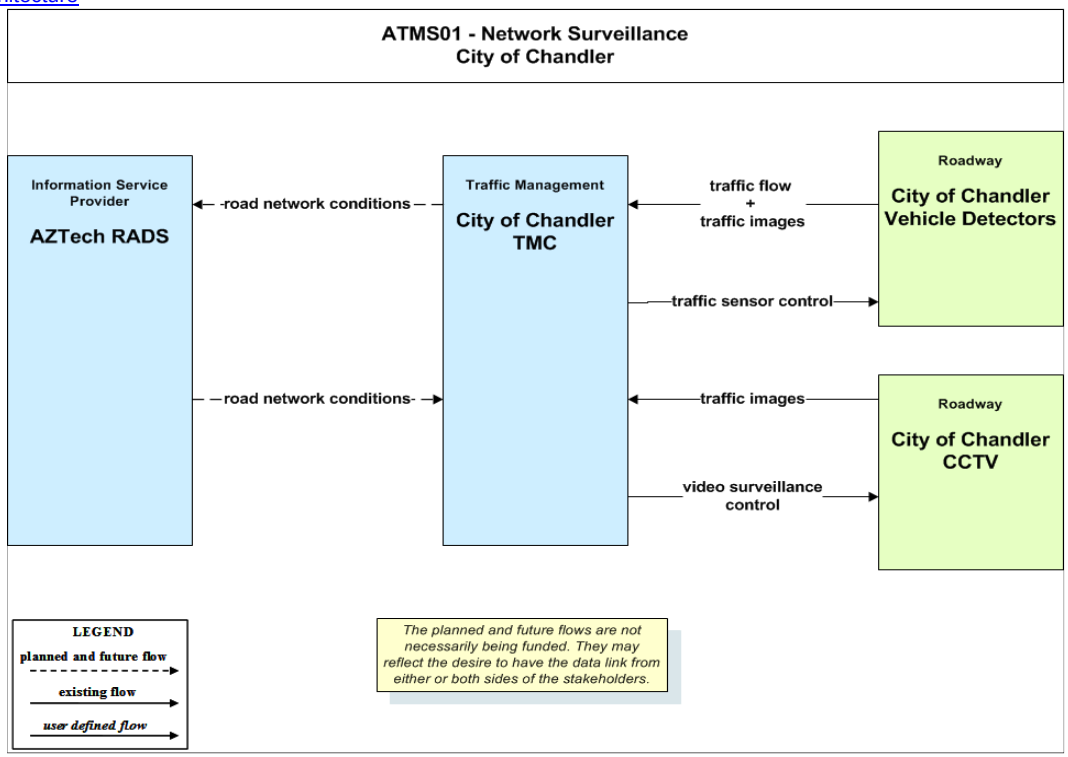
The project sponsor/lead agency of this application intends to incorporate the Systems Engineering Analysis in the project's scope of work, following guidance on the ADOT's System Engineering Checklist.

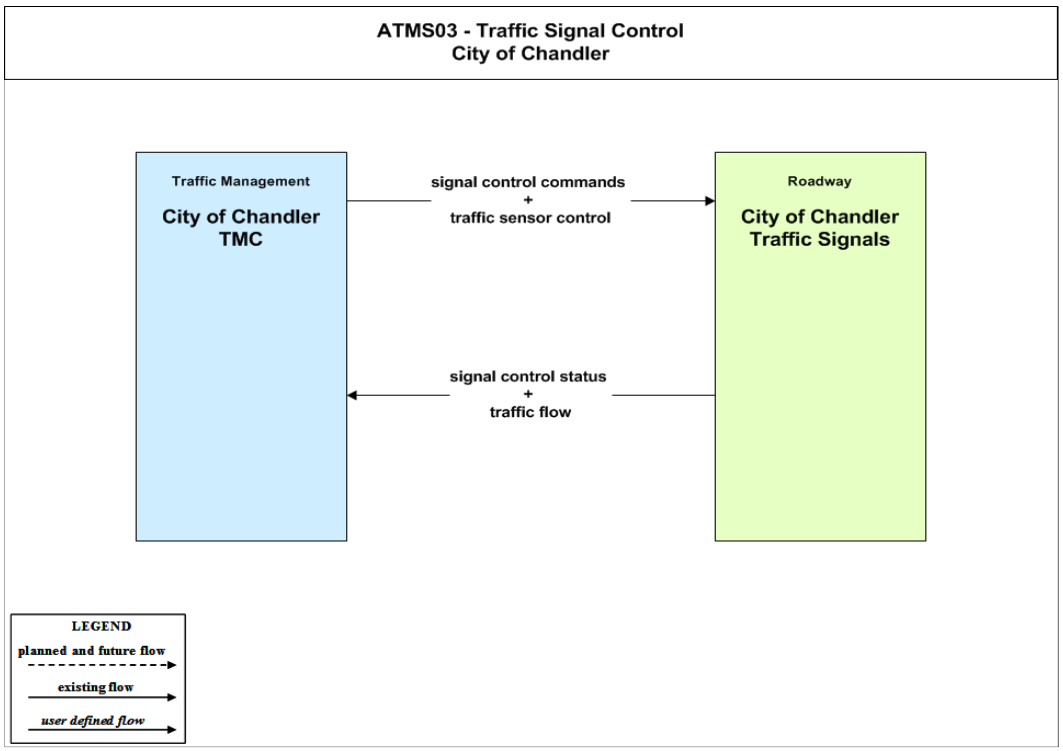
ITS Architecture Flow Diagram

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							
		Work Description							
		Funding Source							
		Preferred Year to Program Work							
	COST ESTIMATE FOR DESIGN		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL
	PRELIMINARY ENGINEERING (15% plans) (Required for Budget)					$ -	No	-	-
						$ -	No	-	-
						$ -	No	-	-
						$ -	No	-	-
						$ -	No	-	-
		SUBTOTAL – PRELIMINARY ENGINEERING COSTS				$ -		-	-
	FINAL DESIGN (30, 60, 95, 100% plans) (Required for Budget)					$ -	No	-	-
						$ -	No	-	-
						$ -	No	-	-
						$ -	No	-	-
						$ -	No	-	-
		SUBTOTAL – FINAL DESIGN COSTS				$ -		-	-
	TOTAL PRELIMNARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING					$ -		-	-
PROCUREMENT	REQUESTED PROGRAMMING	Location Description	Chandler West - Priority Arterials Detection, CCTV and Communication Systems						
		Work Description	Install Detection System, CCTV and communication equipment						
		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	Bicycle/Vehicle Detection Systems	EA	31	27,000	$ 837,000.00	Yes	789,291	47,709
		CCTV	EA	9	6,000	$ 54,000.00	Yes	50,922	3,078
		Network Switches	EA	17	4,000	$ 68,000.00	Yes	64,124	3,876
						$		-	-
						$		-	-
						$		-	-
						$		-	-
						$		-	-
						$		-	-
						$ -		-	-
	TOTAL – PROCUREMENT					$ 959,000.00		904,337	54,663
CONSTRUCTION	REQUESTED PROGRAMMING (Complete only if Construction will be programmed in the MAG TIP)	Location Description							
		Work Description							
		Funding Source							
		Preferred Year to Program Work							
	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 invloved are directly related to the transportation project. Generally, burying overhead utilities is cost prohibitive.					$		-	-
						$		-	-
						$		-	-
						$		-	-
		SUBTOTAL – UTILITY RELOCATION COSTS				$ -		-	-
	CONSTRUCTION (Required for Budget)					$		-	-
						$		-	-
						$		-	-
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						$		-	-
						$		-	-
						$		-	-
		SUBTOTAL - CONSTRUCTION COST				$ -		-	-
	MOBILIZATION AND ADMINISTRATION COSTS	CONTRACTOR MOBILIZATION (Typically 8% of construction cost)				$ -		-	-
		TRAFFIC CONTROL (0-8% of construction cost)				$ -		-	-
		CONSTRUCTION SURVEY & LAYOUT (Typically 1% of construction cost)				$ -		-	-
		CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)				$ -		-	-
		CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)				$ -		-	-
		SUBTOTAL – MOBILIZATION & ADMINISTRATION COSTS				$ -		-	-
	TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING					$ -		-	-
ADOT REVIEW FEE	Please enter 'Yes' if your agency is certified accepted by ADOT for construction		Yes						
	ADOT REVIEW FEE		AGENCY TYPE	RATE	HOURS	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL
		Contracts and Specs \ Advertise Project	Non CA	55	100	$ -	No	-	-
		District \ Review Stage Submittals	Non CA	50	40	$ -	No	-	-
		Environmental Planning \ Issue Clearance	All	50	40	$ 2,000	No	-	2,000
		Right of Way \ Issue Clearance	Non CA	55	24	$ -	No	-	-
		Compliance Review\ Compliance Review	Non CA	175	40	$ -	No	-	-
		Project Management Group\ Project Management	Non CA	120	100	$ -	No	-	-
		Project Management Group\ Project Management	CA Only	120	60	$ 7,200	No	-	7,200
		Utilities and Railroad Sections\ Issue Clearance	Non CA	50	24	$ -	No	-	-
						$ 9,200		-	9,200
TOTAL COST ESTIMATE						$ 968,200		904,337	63,863

Budget and Signature Page

Phase	Location Description	Work Description	Year to be Programmed	Funding Source	Federal Amount	Local Amount	Total	Local Share
Procurement	Chandler West - Priority Arterials Detection, CCTV and Communication Systems	Install Detection System, CCTV and communication equipment	2020	CMAQ	$ 904,337	$ 54,663	$ 959,000	5.7%
Total Programmed					$ 904,337	$ 54,663	$ 959,000	5.7%
ADOT Design Review Fee					$ -	$ 9,200	$ 9,200	100.0%
Total Cost					$ 904,337	$ 63,863	$ 968,200	6.6%

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

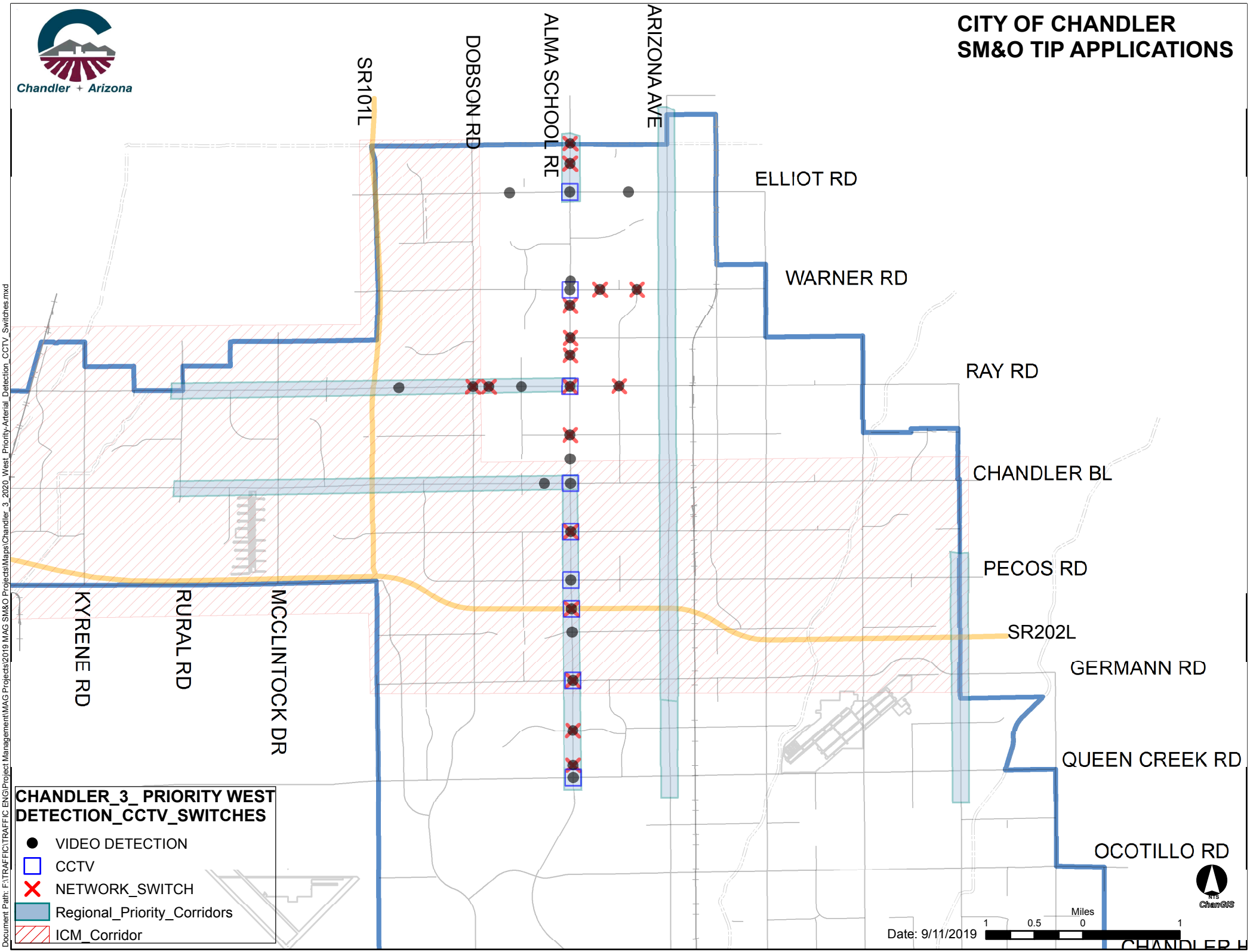
As the jurisdiction's manager/administrator or designated representative, I certify that the information contained in this application is accurate and complete and that the local funds for this project will be included in the sponsoring MAG member agency's local current CIP/TIP or budget document if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

Signature:

Name: JOHN KNUDSON P.E.

Title: DIRECTOR, PUBLIC WORKS, CITY OF CHANDLER

Date: 9/13/19


CITY OF CHANDLER
SM&O TIP APPLICATIONS
Chandler + Arizona
SR101L
DOBSON RD
ALMA SCHOOL RD
ARIZONA AVE
ELLIOT RD
WARNER RD
RAY RD
CHANDLER BL
PECOS RD
SR202L
GERMANN RD
QUEEN CREEK RD
OCOTILLO RD
KYRENE RD
RURAL RD
MCCLINTOCK DR
CHANDLER_3_ PRIORITY WEST
DETECTION_CCTV_SWITCHES
VIDEO DETECTION
CCTV
NETWORK_SWITCH
Regional_Priority_Corridors
ICM_Corridor
Date: 9/11/2019
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