

<b>Contact Information</b>	
1. Lead Agency	City of Buckeye
2. Contact Name	John Willett
3. Phone	623.349.6282
4. E-Mail Address	jwillett@buckeyeaz.gov
5. Mailing Address	530 East Monroe Avenue   Buckeye, AZ   85326

<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:	<input style="width: 100%;" type="text" value="16,800"/>
b. Please describe how the ADT was estimated:	<div style="border: 1px solid black; background-color: #e0f0e0; padding: 10px; text-align: center;">                     Recorded in April 2017 by City of Buckeye as part of traffic count study. Volume on Verrado Way of 15,500 recorded in April 2017.                 </div>
c. When was the ADT estimate developed:	<input style="width: 100%;" type="text" value="Feb-18"/>
d. Name of the roadway section used for the ADT estimate:	<input style="width: 100%;" type="text" value="Yuma Road"/>
e. Starting limit of the roadway section:	<input style="width: 100%;" type="text" value="237th Lane"/>
f. Ending limit of the roadway section:	<input style="width: 100%;" type="text" value="Verrado Way"/>
g. Length (miles):	<input style="width: 100%;" type="text" value="3.3"/>
h. Total number of through lanes on the roadway section:	<input style="width: 100%;" type="text" value="4"/>
i. Federal Functional Classification of the roadway section:	<input style="width: 100%;" type="text" value="Minor Arterial"/> <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:

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)

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

## 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	Yuma Road and Verrado Way ITS Conduit and Fiber
b. Lead Agency	City of Buckeye
c. Other Partnering Agencies	None

### 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	Begin installing an ITS network in the City of Buckeye by addressing the second and fifth priority of the City's recently completed ITS Strategic Plan - installing conduit and single mode fiber optic cable along Yuma Road between 237th Lane and Verrado Way and along Verrado Way between Yuma Road and McDowell Road.
b. Project Objectives	Provide the City with the ability to communicate with the traffic signals along Yuma Road and Verrado Way to retrieve data (turning movement counts, traffic signal operations, trouble shoot issues, etc) and allow modifications to signal timing/operations to occur remotely (from a desk top or laptop). Especially in advance of ADOT I-10 construction project and anticipated restrictions at I-10/Watson Road TI.

### 4. Project Information

a. Project location description	Yuma Road, 237th Lane to Verrado Way and Verrado Way, Yuma Road to McDowell Road.  Note: a PDF file of a map must be submitted to MAG as an attachment.
b. Scope of the project	Install fiber (144-SMFO), conduit, pull boxes, vaults and splices along Yuma Road to connect the 7 traffic signals along the corridor. Install fiber (144-SMFO), conduit, pull boxes, vaults and splices along Verrado Way to connect the 4 traffic signals along the corridor.

## 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	ATMS03
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.	16,800
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.	0%
Regional Priority Corridor Ranking (Enter shares of work in "Regional Priority - Top 100")	
Latest year of your agency's Operations/Management Center upgrade.	N/A

### 7. Program Year Preference

Preferred Program Year

2021
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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	\$ 643,242.00			100%
<b>Total</b>	\$ 643,242.00	\$ 38,881.01	\$ 682,123.01	100%
<b>Cost Percentage</b>	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)	2
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	\$0
d. Estimated additional annual O & M funds required for features added by this project	\$25,000
e. Estimated DATE from when required additional local O & M funds will be available	N/A
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](#)

<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>	<input checked="" type="checkbox"/> Yes, the agency intends to follow the process.
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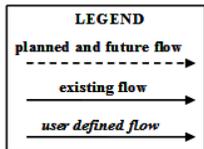
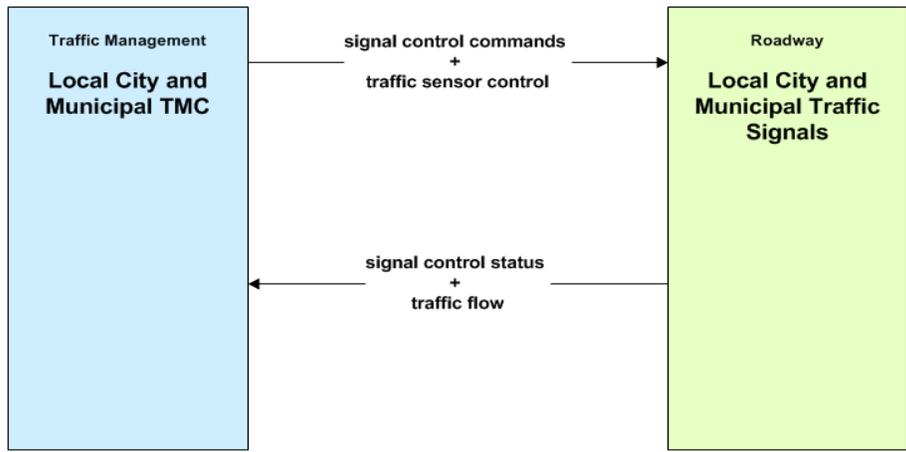
**ITS Architecture Flow Diagram**

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  
Local Cities and Municipalities - Generic**



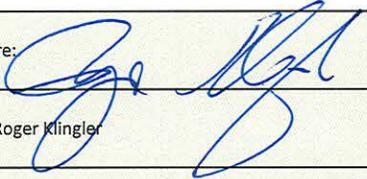
PROJECT COST ESTIMATE WORKSHEET (Cost Estimates Are Required Regardless of Programming)									
DESIGN	REQUESTED PROGRAMMING (Complete if item will be programmed in the MAG TIP)	Location Description	Yuma Road and Verrado Way						
		Work Description	Install conduit and SMFO						
		Funding Source	Local						
		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	6,000	\$ 6,000.00	No	-	6,000
		Project Assessment Report or Detailed Workplan	LS	1		\$ -	No	-	-
		Systems Engineering Analysis (must address FHWA requirements)	LS	1	2,500	\$ 2,500.00	No	-	2,500
		Federal Project Environmental Determination	LS	1		\$ -	No	-	-
		HAZMAT Assessment	LS	1		\$ -	No	-	-
SUBTOTAL - PRELIMINARY ENGINEERING COSTS					\$ 8,500.00	-	-	8,500	
FINAL DESIGN (30, 60, 95, 100% plans) (Required for Budget)	Right-of-Way Acquisition	LS	1		\$ -	No	-	-	
	Plans, Specifications, Cost Estimates, Bidding	LS	1	75,000	\$ 75,000.00	No	-	75,000	
	Geotechnical Report	LS	1		\$ -	No	-	-	
	Drainage Report	LS	1		\$ -	No	-	-	
	SWPPP	LS	1		\$ -	No	-	-	
SUBTOTAL - FINAL DESIGN COSTS					\$ 75,000.00	-	-	75,000	
TOTAL PRELIMINARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING					\$ 83,500.00	-	-	83,500	
PROCUREMENT	REQUESTED PROGRAMMING (Complete only if Construction will be programmed in the MAG TIP)	Location Description	Yuma Road and Verrado Way						
		Work Description	Install conduit and SMFO						
		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	Yuma Road and Verrado Way						
		Work Description	Install conduit and SMFO						
		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)	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)		Conduit (single-trench)	LF	400	15	\$ 6,000.00	Yes	5,658	342
	Conduit (single-horizontal drill)	LF	0	40	\$ -	Yes	-	-	
	Conduit Duct Bank	LF	8,800	35	\$ 308,000.00	Yes	290,444	17,556	
	Conduit Duct Bank (horizontal drill)	LF	0	50	\$ 12,000.00	Yes	-	-	
	No. 7 Pull Box w/extension	EA	16	750	\$ 12,000.00	Yes	11,216	684	
	Splice Vaults	EA	7	2,500	\$ 17,500.00	Yes	16,503	998	
	SMFO (144)	LF	29,100	4	\$ 116,400.00	Yes	109,765	6,635	
	SMFO (12)	LF	560	5	\$ 2,800.00	Yes	2,640	160	
	Fiber Optic Splice Enclosure	EA	8	1,500	\$ 12,000.00	Yes	11,316	684	
	Fiber Terminal Panel	EA	1	1,200	\$ 1,200.00	Yes	1,132	68	
Ethernet Switch	EA	8	2,750	\$ 22,000.00	Yes	20,746	1,254		
SUBTOTAL - CONSTRUCTION COST					\$ 497,900.00	-	469,520	28,380	
MOBILIZATION AND ADMINISTRATION COSTS	CONTRACTOR MOBILIZATION (Typically 8% of construction cost)			39,832	\$ 39,832.00	Yes	37,562	2,270	
	TRAFFIC CONTROL (0-8% of construction cost)			39,832	\$ 39,832.00	Yes	37,562	2,270	
	CONSTRUCTION SURVEY & LAYOUT (Typically 1% of construction cost)			4,979	\$ 4,979.00	Yes	4,695	284	
	CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)			24,895	\$ 24,895.00	Yes	23,476	1,419	
	CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)			74,685	\$ 74,685.00	Yes	70,428	4,257	
SUBTOTAL - MOBILIZATION & ADMINISTRATION COSTS					\$ 184,223.00	-	173,722	10,501	
TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING					\$ 682,123.00	-	643,242	38,881	
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 Sections\ Issue Clearance	Non CA	50	24	\$ 1,200	No	-	1,200	
SUBTOTAL					\$ 31,020	-	-	31,020	
TOTAL COST ESTIMATE					\$ 796,643	-	643,242	153,401	

**Budget and Signature Page**

Phase	Location Description	Work Description	Year to be Programmed	Funding Source	Federal Amount	Local Amount	Total	Local Share
Design, excludes ADOT review fees	Yuma Road and Verrado Way	Install conduit and SMFO	2021	Local	\$ -	\$ 83,500	\$ 83,500	100.0%
Construction	Yuma Road and Verrado Way	Install conduit and SMFO	2021	CMAQ	\$ 643,242	\$ 38,881	\$ 682,123	5.7%
<b>Total Programmed</b>					\$ 643,242	\$ 122,381	\$ 765,623	16.0%
ADOT Design Review Fee					\$ -	\$ 31,020	\$ 31,020	100.0%
<b>Total Cost</b>					\$ 643,242	\$ 153,401	\$ 796,643	19.3%

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

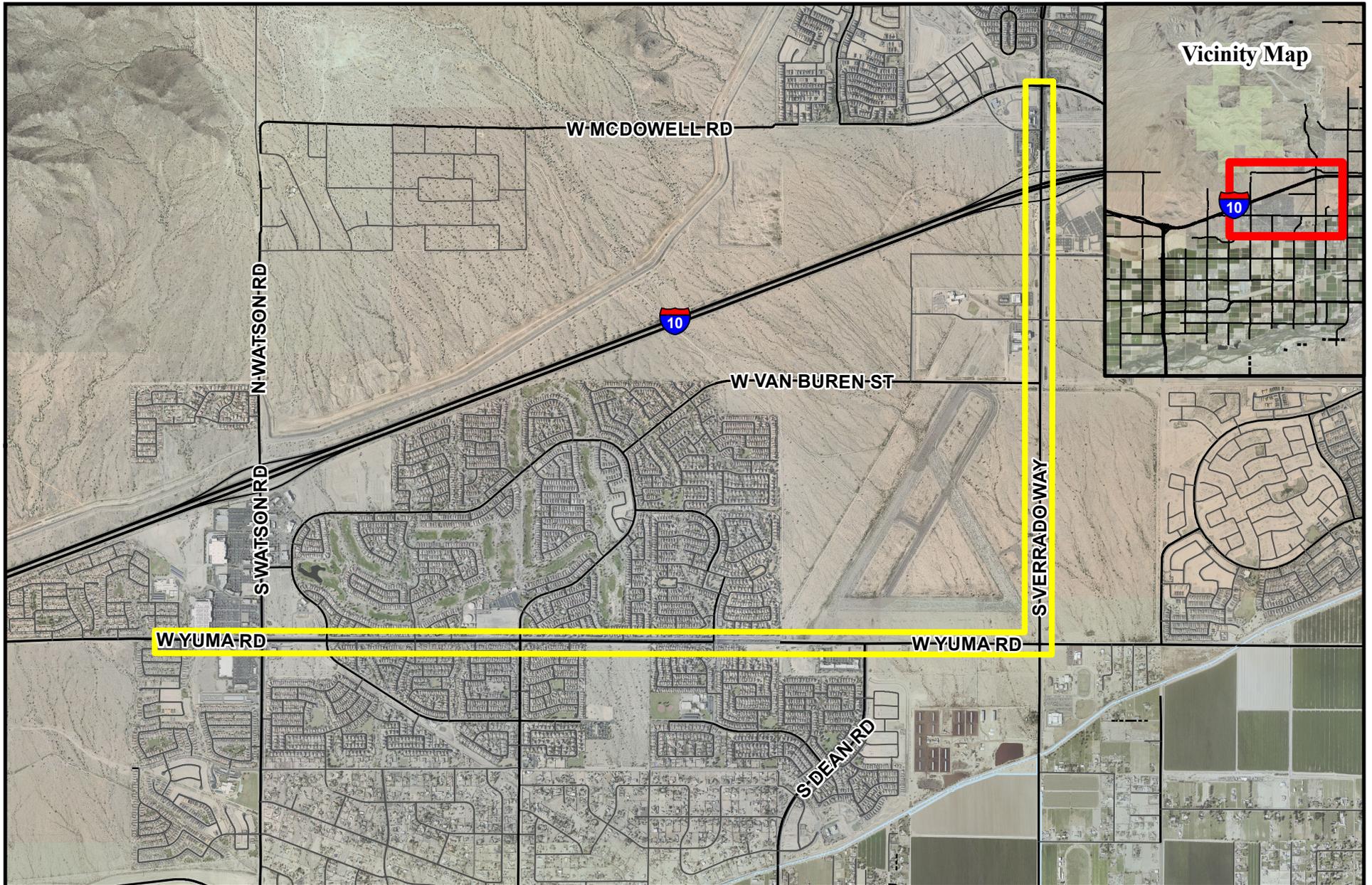
As the jurisdiction's manager/administrator or designated representative, I certify that the information contained in this application is accurate and complete and that the local funds for this project will be included in the sponsoring MAG member agency's local current CIP/TIP or budget document if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

Signature: 

Name: Roger Klingler

Title: City Manager

Date: September 12, 2019



While every effort has been made to ensure the accuracy of this information, the City of Buckeye makes no warranty, expressed or implied, as to its absolute accuracy and expressly disclaims liability for the accuracy thereof.

### Yuma Road and Verrado Way ITS Conduit and Fiber

0 1,000 2,000 4,000  
Feet



 Conduit Project Area

