Contact Information	
1. Lead Agency	City of Goodyear
2. Contact Name	Hugh Bigalk
3. Phone	623-882-7514
4. E-Mail Address	hugh.bigalk@goodyearaz.gov
5. Mailing Address	14455 W Van Buren Street, Suite D101, Goodyear, AZ 85338

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:	27600
b. Please describe how the ADT was estimated:	Traffic data was collected via tube counters by a consultant on 8/21/2019 & 8/22/2019.
c. When was the ADT estimate developed:	2019
d. Name of the roadway section used for the ADT estimate:	Litchfield Road
e. Starting limit of the roadway section:	MC 85
f. Ending limit of the roadway section:	Wigwam Boulevard
g. Length (miles):	4.8
h. Total number of through lanes on the roadway section:	6
i. Federal Functional Classification of the roadway section:	Minor Arterial Link to ADOT Functional Classification Maps

CMAQ Data

2. Improvements in Traffic Management & Operations

a. Enter the pre-improvement (current) average corridor traffic speed: 24

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
X	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
	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) 24

b. Enter the post-improvement average traffic speed of the corridor: 28

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	Litchfield Road ICM Project
b. Lead Agency	City of Goodyear
c. Other Partnering Agencies	

2. Project Type

Prioritize SMO Buckets for the funding application

First Priority	Bucket #1 – ICM Corridors
Second Priority	Bucket #3 – Local Priority Corridors
Third Priority	(Please Select a Bucket)

3. Project Goals & Objectives

a. Project Goals	To upgrade video detection and install vehicle travel time hardware along Litchfield Road to better support ICM goals improving arterial/freeway coordination that supports/provides robust signal performance measures, video detection that provides reliable vehicle detection data, hardware to obtain travel time data and traffic signal controllers that support these functions.
b. Project Objectives	To implement reliable detection and vehicle travel time data collection along Litchfield Road, decreasing travel time and reducing delay along the corridor. Using signal performance measures, use the data to optimize and document the performance of the corridor.

4. Project Information

a. Project location description	Litchfield Road - MC 85 to Wigwam Boulevard (15 intersections)

Note: a PDF file of a map must be submitted to MAG as an attachment.

b. Scope of the project	Upgrade video detection, traffic signal controllers and install vehicle travel time hardware at 15 intersections along Litchfield Road from MC 85 to Wigwam Boulevard. The project assessment and plans will be designed in house by the City of Goodyear.

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	ATMS01, 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.	27,600
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.	2008

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	$ -			0%
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	$ 761,755.00			100%
11-Regional Asset Upgrade/Replace Program - ICM Corridors & Priority Arterials				0%
Total	$ 761,755.00	$ 46,044.58	$ 807,799.58	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				
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	$ 761,755.00			100%
Total	$ 761,755.00	$ 46,044.58	$ 807,799.58	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)	3
b. Additional staff resources required for fully utilizing features added by project (in FTEs)	N/A
c. Agency's estimated current annual ITS operations & maintenance (O & M) budget	$100,000
d. Estimated additional annual O & M funds required for features added by this project	$15,000
e. Estimated DATE from when required additional local O & M funds will be available	07/01/2020
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

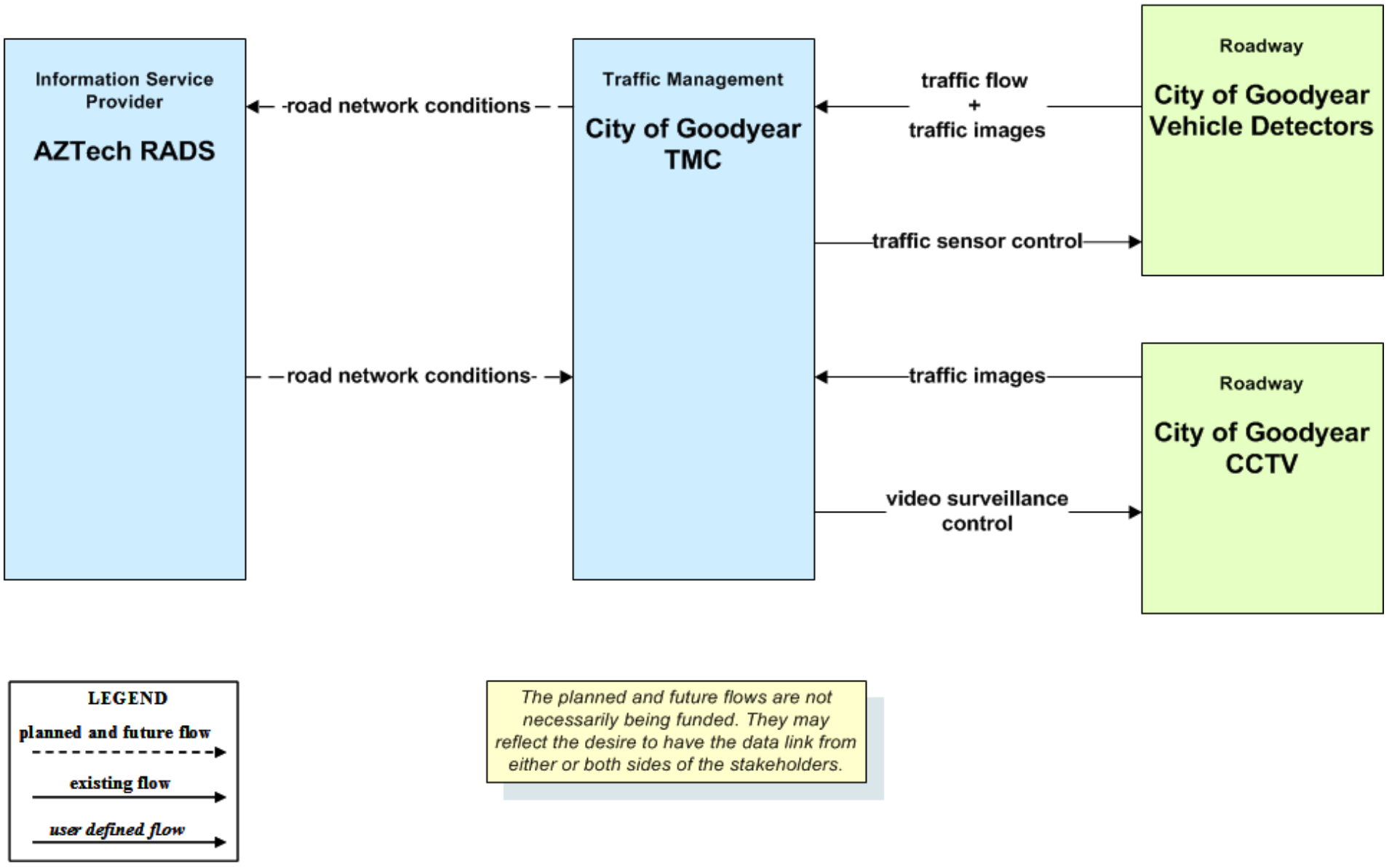
The project sponsor/lead agency of this application intends to incorporate the Systems Engineering Analysis in the project's scope of work, following guidance on the ADOT's System Engineering Checklist.	☑ Yes, the agency intents to follow the process.

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.

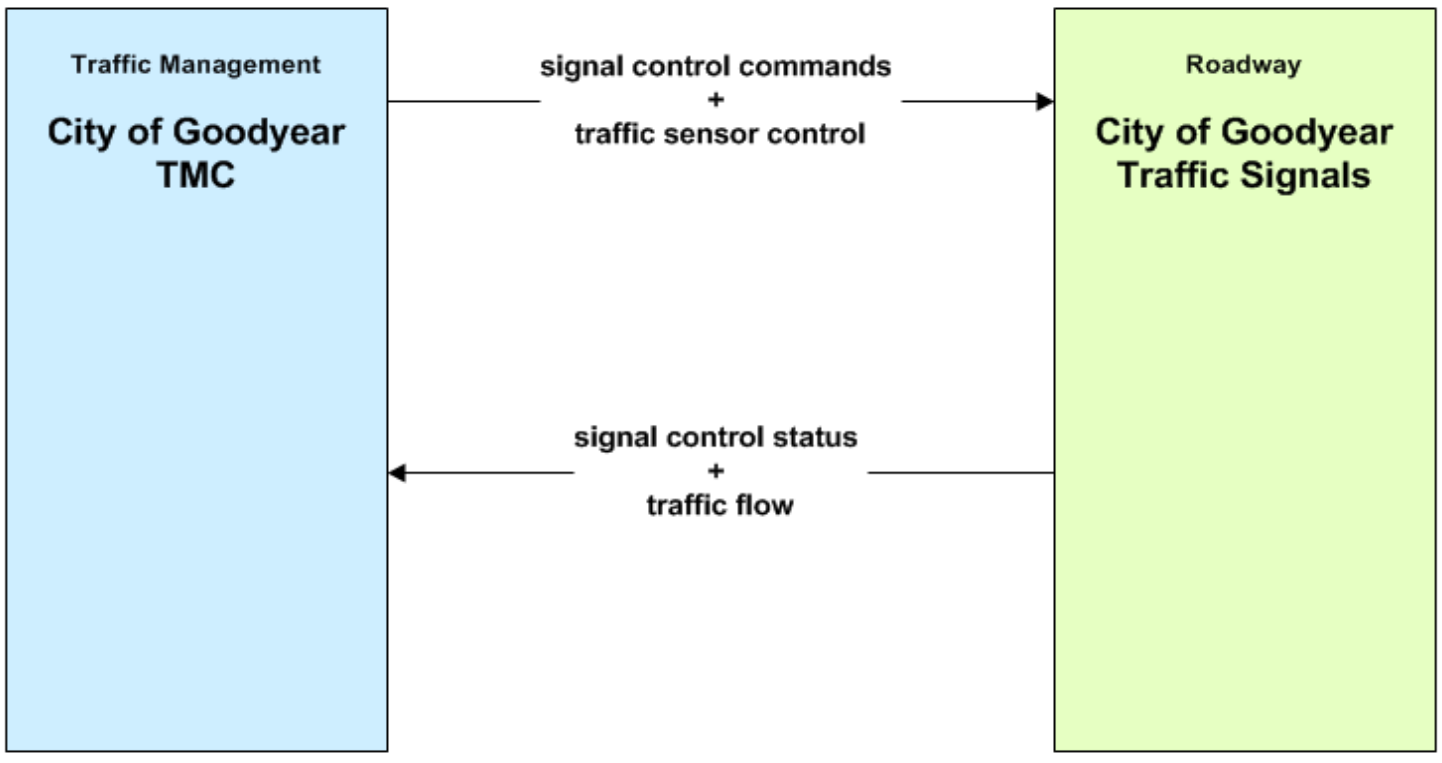
Find the relevant Service Packages addressed by the project in the MAG ITS Architecture (found in the link below). Copy and paste the graphic in the space provided.
MAG Regional ITS Architecture

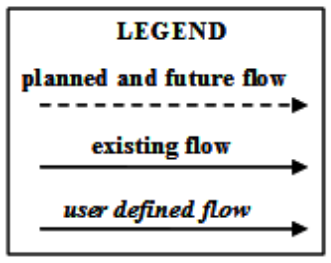
ATMS01 - Network Surveillance
City of Goodyear



ITS Architecture Flow Diagram

ATMS03 - Traffic Signal Control
City of Goodyear





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	Litchfield Road - MC 85 to Wigwam Boulevard						
		Work Description	Litchfield Road Vehicle Detection and Data Improvements						
		Funding Source	Local						
		Preferred Year to Program Work	2020						
	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	-	$ -	No	-	-
		Project Assessment Report or Detailed Workplan	LS	1		$ -	No	-	-
		Systems Engineering Analysis (must address FHWA requirements)	LS	1		$ -	No	-	-
		Federal Project Environmental Determination	LS	1	75,000	$ 75,000.00	No	-	75,000
		HAZMAT Assessment	LS	1	15,000	$ 15,000.00	No	-	15,000
		SUBTOTAL – PRELIMINARY ENGINEERING COSTS				$ 90,000.00		-	90,000
	FINAL DESIGN (30, 60, 95, 100% plans) (Required for Budget)	Right-of-Way Acquisition	LS	1		$ -	No	-	-
		Plans, Specifications, Cost Estimates, Bidding	LS	1		$ -	No	-	-
		Geotechnical Report	LS	1		$ -	No	-	-
		Drainage Report	LS	1		$ -	No	-	-
		SWPPP	LS	1		$ -	No	-	-
		SUBTOTAL – FINAL DESIGN COSTS				$ -		-	-
	TOTAL PRELIMNARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING					$ 90,000.00		-	90,000
PROCUREMENT	REQUESTED PROGRAMMING	Location Description							
		Work Description							
		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	Litchfield Road - MC85 to Wigwam Bouelvard						
		Work Description	Upgrade Vehicle Detection, Traffic Signal Controller and Install Vehicle Travel Time Hardware						
		Funding Source	CMAQ						
		Preferred Year to Program Work	2020						
	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.	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)	*Video Detection Four Camera System (Cable/Mounts/Installation)*	*EA*	12	40,000	$ 480,000.00	Yes	452,640	27,360
		Video Detection Six Camera System (Cable/Mounts/Installation)	*EA*	1	60,000	$ 60,000.00	Yes	56,580	3,420
		Traffic Signal Controller	*EA*	13	7,000	$ 91,000.00	Yes	85,813	5,187
		Vehicle Travel Time Hardware	*EA*	13	10,000	$ 130,000.00	Yes	122,590	7,410
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
						$ -	Yes	-	-
		SUBTOTAL - CONSTRUCTION COST				$ 761,000.00		717,623	43,377
	MOBILIZATION AND ADMINISTRATION COSTS	CONTRACTOR MOBILIZATION (Typically 8% of construction cost)			9,360	$ 9,360.00	Yes	8,826	534
		TRAFFIC CONTROL (0-8% of construction cost)			9,360	$ 9,360.00	Yes	8,826	534
		CONSTRUCTION SURVEY & LAYOUT (Typically 1% of construction cost)			1,170	$ 1,170.00	Yes	1,103	67
		CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)			5,850	$ 5,850.00	Yes	5,517	333
		CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)			21,060	$ 21,060.00	Yes	19,860	1,200
		SUBTOTAL – MOBILIZATION & ADMINISTRATION COSTS				$ 46,800.00		44,132	2,668
	TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING					$ 807,800.00		761,755	46,045
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
						$ 31,020		-	31,020
TOTAL COST ESTIMATE						$ 928,820		761,755	167,065

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	Litchfield Road - MC 85 to Wigwam Boulevard	Litchfield Road Vehicle Detection and Data Improvements	2020	Local	$ -	$ 90,000	$ 90,000	100.0%
Construction	Litchfield Road - MC85 to Wigwam Bouelvard	Upgrade Vehicle Detection, Traffic Signal Controller and Install Vehicle Travel Time Hardware	2020	CMAQ	$ 761,755	$ 46,045	$ 807,800	5.7%
Total Programmed					$ 761,755	$ 136,045	$ 897,800	15.2%
ADOT Design Review Fee					$ -	$ 31,020	$ 31,020	100.0%
Total Cost					$ 761,755	$ 167,065	$ 928,820	18.0%

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: Julie Arendall

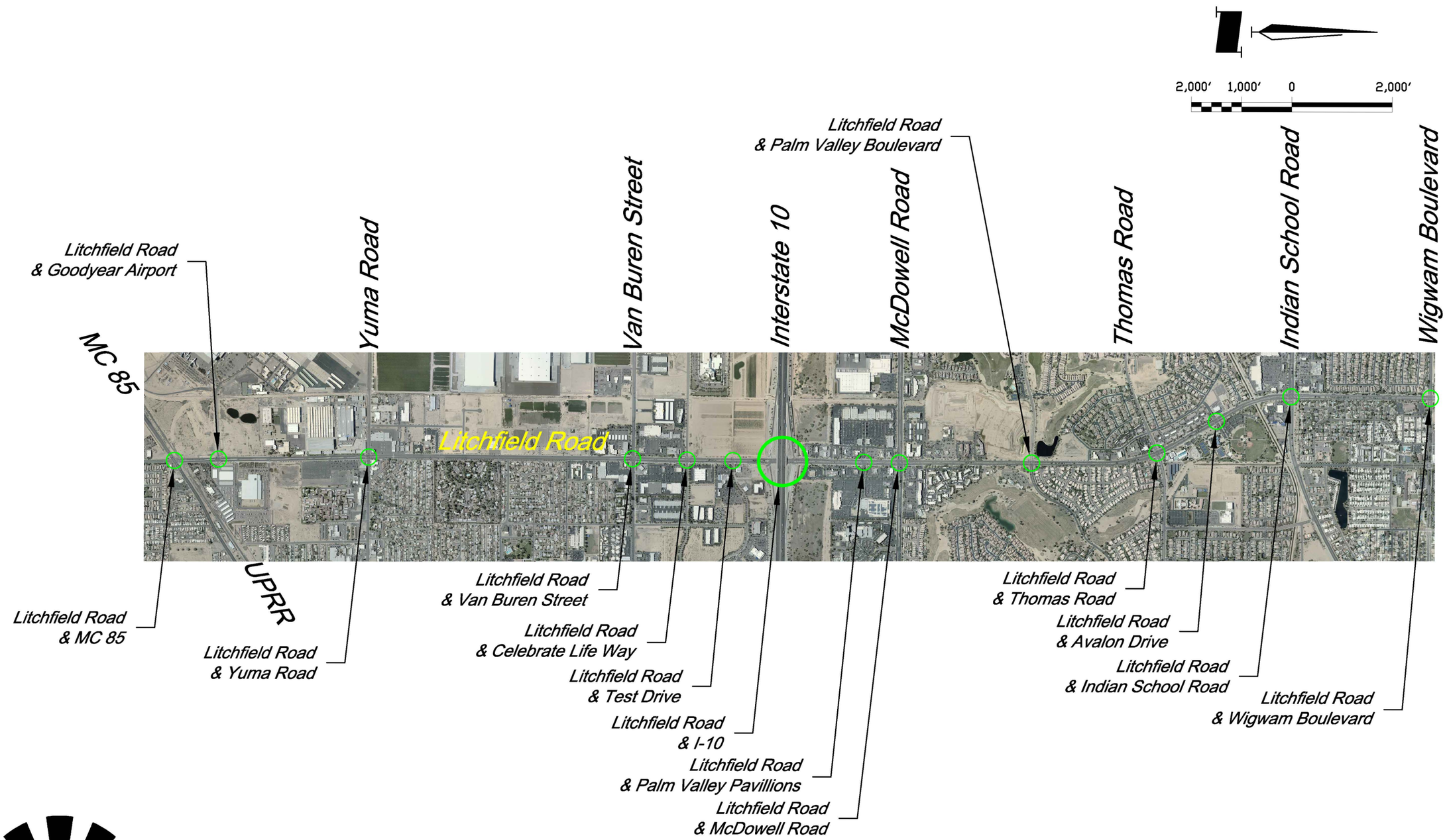
Title: City Manager

Date: September 12, 2019

CHECKLIST - OPTIONAL

This check list is optional, but is included to facilitate applicant review and verification that all required fields in the form have been completed.

Contact Information	Complete?
Contact Information, fields 1 – 5	Yes
CMAQ Data	**Complete?**
1. Traffic Estimate and Roadway Characteristics: Fields a - i	Yes
2. Improvements in Traffic Management & Operations: Fields a - b	Yes
3. Other Improvements: As applicable	Yes
4. Traffic Flow Improvement Due to Project: Fields a - b	Yes
ITS Project Information	**Complete?**
Section 1 is complete	Yes
Section 2 is complete	Yes
Section 3 is complete	Yes
Section 4 is complete & a PDF file of map will be attached to the submittal to MAG	Yes
Section 5 is complete & all relevant Architecture Flow Diagrams have been inserted in the worksheet	Yes
Section 6 is complete	Yes
Section 7 is complete	Yes
Section 8 is complete	Yes
Section 9 is complete	Yes
Section 10 is complete	Yes
ITS Architecture Flow Diagram	**Complete?**
ITS Architecture Flow Diagram have been inserted	Yes
Prpoject Cost Estimate Worksheet	**Complete?**
ITS Architecture Flow Diagram have been inserted	Yes
Budget & Signature Page	**Complete?**
Form is signed	
Name, title and date fields are completed	Yes



CITY OF Goodyear

LEGEND

○ Project Intersection

Exhibit A
Litchfield Road - MC 85 to Wigwam Boulevard
Proposed Project
City of Goodyear