

Project Overview: ICM, Upgrades, Existing Regional Operations Projects

Project Name				
Project Name (A short name for the project)	Regional Archived Data System (RADS) Upgrades and Data Management Program			
Agency Sponsor Information				
	Lead Agency	Agency #1	Agency #2	Agency #3
Agency Name	Maricopa County	Select an Agency	Select an Agency	Select an Agency
Manager Name	Faisal Saleem			
Manager Title	ITS Branch Manager			
Manager Phone	602.506.1241			
Manager Email	faisalsaleem@mail.maricopa.gov			
Project Description				
SM&O Strategy (The noncompetitive eligible projects identified in the SM&O Funding plan for FY2020-FY2022)	Project# 16-An upgrade of the current RADS server and data management program (including capital costs, software/hardware, software upgrades, and maintenance)			
Purpose (Describe what the project is supposed to accomplish - e.g. improve emergency response, reduce bottle necks at ramps, etc.)	This project will consist of an upgrade to the Regional Archived Data System (RADS) to provide enhanced capabilities in support of Integrated Corridor Management (ICM), arterial incident management, and reducing delay at signalized intersections.			
Location (A description of where the project is located and its limits. This may include multiple roadways)	Maricopa County, Arizona			
Scope (Provide a general scope of the project)	<p>This upgrade consists of developing new functions, expanding current functionality and procuring additional hardware in support of the current regional ITS (Intelligent Transportation System) data archive and analysis system – Regional Archived Data System (RADS). This project has the following tasks:</p> <p>Task 1. Automated Traffic Signal Performance Measures (ATSPM) Restructure Currently, there are seven local agencies that are actively implementing ATSPM on select signals in their jurisdiction. A pilot project has fully integrated traffic signal controller data from two agencies into RADS. This project will expand ATSPM by fully integrating data from other interested agencies in the region. Currently, data from all agencies is hosted on one server. This project will upgrade the current ATSPM system by breaking out each agency into its own virtual server. This will allow for each agency to view only their traffic signals, customize their reports, and receive notifications in real time. This upgrade will include the latest ATSPM software version provided by the Utah DOT. We are anticipating greater signal timing performance efficiencies with each participating agency.</p> <p>Task 2. Arterial CCTV Camera Image Sharing in ARIS Currently the AZTech Regional Information System (ARIS) provides timely notifications via email to participating subscribers within local governmental agencies, and the regional public transportation agency. When ARIS sends an email to the various subscribers, the system-generated emails provide a link to the ARIS Tactical Screen with displays among other pieces of information, selected ADOT cameras within the area of the incident. This project will expand ARIS by adding the arterial camera image sharing capabilities within the tactical screen. These cameras are not for sharing with the media.</p> <p>Task 3. Lifecycle Management System This project includes a full hardware review of current and future needs of the AZTech RADS. Includes purchasing of new servers to host virtual machines and a new SQL server license to handle the expansion of data. Establishing a Hardware Lifecycle Management System includes purchasing of equipment to replace hardware that is reaching its end of life.</p>			

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Project Description (Continued)	
<p>Schedule (Provide a preliminary schedule for implementing the project)</p>	<p>Design Concept Report: December 2019 RFP: February 2020 Clearances: April 2020 Obligation of Federal Funds: October 2020 Project Advertisement and Contracting: October 2020 - February 2021 Procurement and Installation of Hardware: February 2021 - June 2021 ATSPM Software Upgrade, Data Integration and Testing: June 2021 - June 2022 ARIS Arterial Camera Image Sharing and Testing: October 2021 - June 2022 Project Acceptance: March 2023</p>
<p>Impacts and Remediation (Describe the expected environmental, neighborhood and Title VI impacts of the project, anticipated utility relocations and traffic disruptions of the project and anticipated remediation measures)</p>	<p>This entire project consists of expanding hardware, developing computer software, and integrating data. There are no indicated impacts of this project, as no construction activities are involved.</p>
<p>Public and Interagency Outreach and Coordination (Describe measures to be used to inform and engage the public, businesses and affected public agencies regarding the project. The less mainstream a proposed project or new technology is, the more public outreach should be conducted)</p>	<p>No public outreach is necessary for this project. No new interagency agreements are anticipated as a result of this project. Partner agencies who will be impacted include the seven local agencies who are interested in the RADS ATSPM system and agencies who are interested in providing camera images as part of the ARIS Tactical Screen. All of these agencies are current subscribers to the RADS and ARIS and are engaged through monthly AZTech meetings and other one-on-one meetings with MCDOT staff who are responsible for the RADS.</p>
<p>Annual Project Reporting (Each year a report on the implementation of the project will be presented to the MAG ITS Committee. This report should do the following: 1. Identify scope changes or potential scope changes. 2. Track progress on meeting the project schedule. 3. Provide an overview of the project budget, including expenditures to date. 4. Identify and track key performance measures. Describe the data, measures and process that will be collected, developed and implemented to prepare the annual report.)</p>	<p>The MCDOT Project Manager will present an annual report for this project to the MAG ITS Committee. The annual report will identify the project tasks that have been completed to date and alignment with the identified project schedule, identify any scope changes that have occurred or are anticipated and alignment with the identified project budget, and report on the following key output measures: - Number of agency users subscribing to ARIS - Number of traffic signals providing high resolution traffic signal performance data - Number of ARIS alerts that include a corresponding arterial CCTV camera image - Agency-user reported signal timing changes made per week as a result of ATSPM data</p>
<p>Estimated Total Project Cost</p>	<p>\$495,000</p>
<p>Estimated Date Complete</p>	<p>March 2023</p>

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Budget Detail										
Item #	Work ID	Agency Responsible	Location of Work	Work to be Performed	Year in TIP	Year Open	Federal/State		Agency Match	Cost of Work
							Source	Amount		
#1	ATSPM Restructure and Additional Agency Integration	MCDOT	MCDOT	Expand initial ATSPM pilot project by fully integrating data from other interested agencies in the region. Upgrade the current ATSPM system by breaking out each agency into its own virtual server to allow each agency to view only their traffic signals, customize their reports, and receive notifications in real time. This upgrade will include the latest ATSPM software version provided by the Utah DOT.	2021		CMAQ	\$ 141,450	\$ 8,550	\$ 150,000
#2	Arterial CCTV Camera Sharing in ARIS	MCDOT	MCDOT	This project will expand ARIS by adding the arterial camera image sharing capabilities within the ARIS tactical screen output. These cameras are not for sharing with the media.	2021		CMAQ	\$ 121,815	\$ 78,185	\$ 200,000
#3	Hardware	MCDOT	MCDOT	This project includes a full hardware review of current and future needs of the AZTech RADS. Includes purchasing of new servers to host virtual machines and a new SQL server license to handle the expansion of data. Establishing a Hardware Lifecycle Management System includes purchasing of equipment to replace hardware that is reaching its end of life.	2021		CMAQ	\$ 136,735	\$ 8,265	\$ 145,000
#4							None	\$ -	\$ -	\$ -
#5							None	\$ -	\$ -	\$ -
#6							None	\$ -	\$ -	\$ -
#7							None	\$ -	\$ -	\$ -
#8							None	\$ -	\$ -	\$ -
#9							None	\$ -	\$ -	\$ -
#10							None	\$ -	\$ -	\$ -
									Total	\$ 495,000

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Requested Programming							
3. Proposed Programming	Work Phase	Year to be Programmed	Funding Source	Federal/State Amount	Local Amount	Total	Local Share
	PE/Design	2021	Local	\$ -	\$ 70,822	\$ 70,822	100.00%
	Construction	2021	CMAQ	\$ 400,000	\$ 24,178	\$ 424,178	5.70%
	None	None	None	\$ -	\$ -	\$ -	0.00%
	None	None	None	\$ -	\$ -	\$ -	0.00%
	None	None	None	\$ -	\$ -	\$ -	0.00%
Total				400,000	95,000	495,000	
Notes:				1. Funds are available only for 2020 - 2022		2. The minimum local share is 5.7% for federal aid projects.	

- Commitments**
1. All parties to the project acknowledge that as of the date of this overview the information provided is the most accurate and complete available.
 2. All parties to this overview, agree to work collaboratively to implement the project as described in this overview.
 3. Changes to this overview and the project it describes, will be approved by all parties and presented to the MAG ITS Committee for approval and recommendation for the approval of the MAG Regional Council.
 4. The lead agency for this project will provide a status report to the MAG ITS Committee on the project on an annual basis or more often if needed.
 5. It is understood by the sponsoring agencies that any equipment or products resulting from this project will be maintained by the sponsoring agencies.
 6. It is recognized that should the parties fail to comply with these commitments or the ITS recommend against continuing the project, MAG may cancel the project.

4/22/19

Date

Date

Date

Date

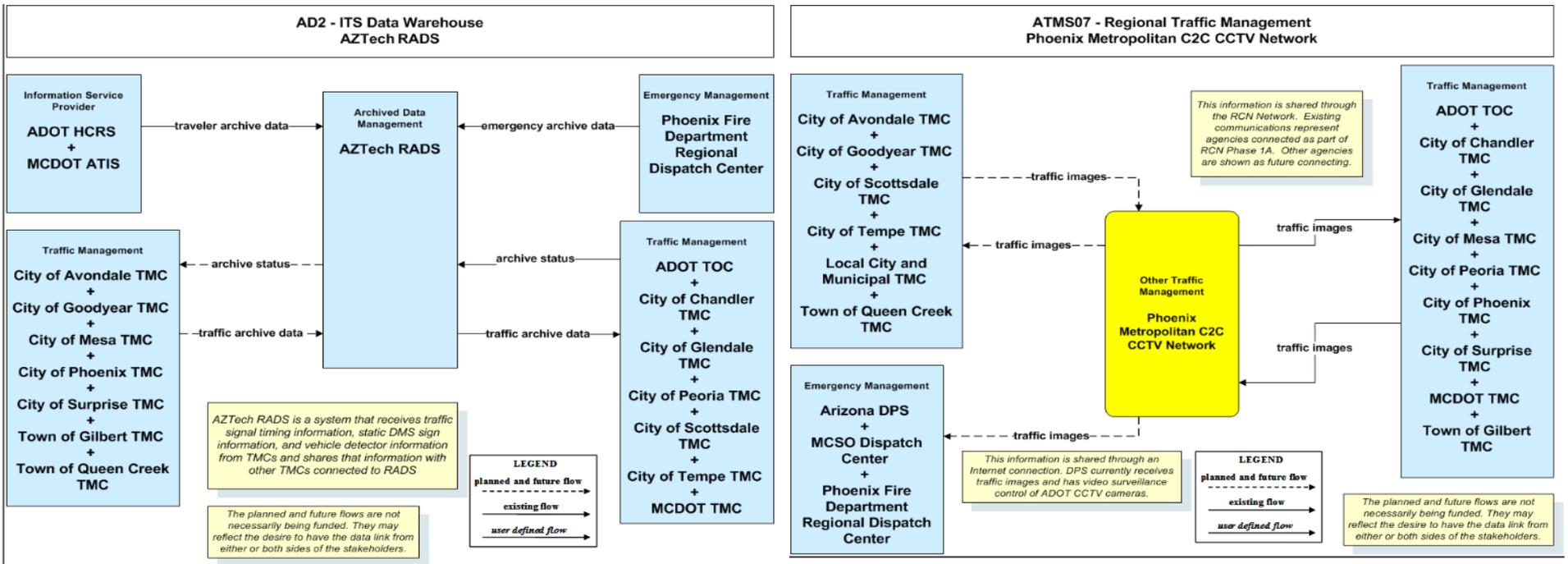
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ITS Architecture

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](#)



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Performance Measures for SM&O Annual Report

Purpose and Description

The purpose of annually measuring and reporting on the project overview is to measure how projects are addressing the SM&O Plan and Vision. Performance measures have been identified in the SM&O Plan, shown in the "SM&O PMs" worksheet. The performance measures are organized around the investment categories and identify metrics that will allow MAG to measure SM&O program impacts. MAG will be preparing an annual report on progress toward achieving the SM&O Vision, including the impact of SM&O investments.

The lead agency will propose one or more of the following performance measures categories to be reported on for the project: Mobility, Safety, Transit, Data Management & Communications, and Traffic Incident Management. The MAG ITS Committee will review that the proposed performance measures align with the SM&O Plan and Vision. A plan for reporting on the implementation and performance of the project to be presented to the MAG Intelligent Transportation Systems (ITS) Committee on an annual basis. The lead agency will report on the project up to one year after implementation.

The lead agency will identify that the project addresses federal performance categories, as required by the FAST Act.

Year	Segment Location	Performance Measure - Mobility				
		Performance Measure #1	Performance Measure #2	Performance Measure #3	Performance Measure #4	Performance Measure #5
2021	All arterial roadways within the seven participating jurisdictions that are outfitted to generate high-resolution traffic signal performance data	Travel time reliability	Corridor throughput			

Year	Segment Location	Performance Measure - Safety				
		Performance Measure #1	Performance Measure #2	Performance Measure #3	Performance Measure #4	Performance Measure #5

Year	Segment Location	Performance Measure - Transit				
		Performance Measure #1	Performance Measure #2	Performance Measure #3	Performance Measure #4	Performance Measure #5

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Year	Segment Location	Performance Measure - Data Management & Communications				
		Performance Measure #1	Performance Measure #2	Performance Measure #3	Performance Measure #4	Performance Measure #5
Year	Segment Location	Performance Measure - Traffic Incident Management				
		Performance Measure #1	Performance Measure #2	Performance Measure #3	Performance Measure #4	Performance Measure #5
2021	Roadways within local agencies who subscribe to ARIS and have CCTV coverage	Response time to incidents	Number of events that include inter-agency coordination			

Federal Performance Measures									
This project addresses federal performance categories:	Performance Categories							AQ Area	In Program
	PM1	PM2T	PM2N	PM2B	PM3F	PM3S	PM3E		
	Safety	Transit Asset Condition	Pavement Condition	Bridge Condition	Travel Reliability	Non SOV Travel	CMAQ Emissions		
No	No	No	No	Yes	No	No	Maricopa	SM&O	

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Air Quality Evaluation Data and Considerations for the Project

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.

Traffic Estimate and Roadway Characteristics

a. Current Average Daily Traffic (ADT) on the facility or the nearest parallel facility of a similar facility type:

500,973 (total for 8 facilities)

b. Please describe how the ADT was estimated:

RADS is a regional software tool that is used by agencies throughout the MAG planning area to support local traffic management and operations. The project is not targeting specific facilities, but the most highly traveled arterial roadways within the region will likely be impacted at a greater scale than less traveled roadways, as RADS data and tools will be used more frequently by agencies for these significant roadways. A sample of roadways was used through identifying the 8 highest traveled arterial roadways, per 2018 ADT from the MAG TDMS, although the project can have benefits to most signalized roadways within the region.

c. When was the ADT estimate developed:

Estimated in 2019 using 2018 ADT data from MAG TDMS

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d. Name of the roadway section used for the ADT estimate:

Scottsdale Road, Bell Road, Baseline Road, Northern Ave, Elliot Road, Peoria Ave, Indian School Rd, Greenfield Road

e. Starting limit of the roadway section:

Scottsdale Road (Loop 101 to Mayo Blvd), Bell Road (115th Ave to El Mirage Rd), Baseline Road (48th St to I-10), Northern Ave (27th Ave to I-17), Elliot Road (Priest Dr to I-10), Peoria Ave (28th Dr to I-17), Indian School Rd (27th Ave to I-17), Greenfield Rd (US 60 to Baseline)

f. Ending limit of the roadway section:

see above

g. Length (miles):

3.92

h. Total number of through lanes on the roadway section:

4 or 6

i. Federal Functional Classification of the roadway section:

Principal Arterial

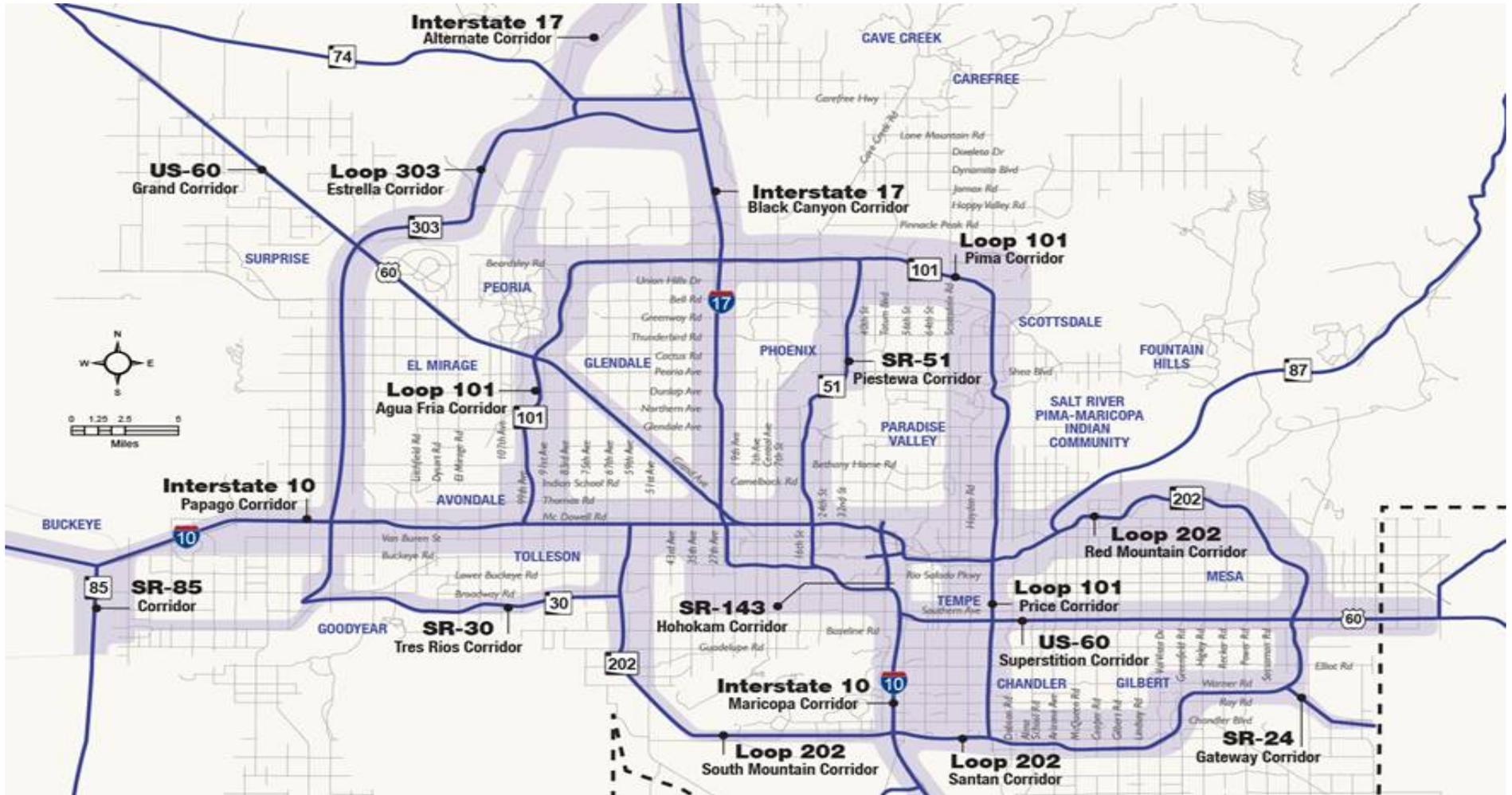
[Link to ADOT Functional Classification Maps](#)

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Traffic Speed Improvements: Please complete Subsection #1 or #2.			
Subsection #1: Traffic Signal Coordination Improvements			
Current pre-improvement (current) average traffic speed	Choose the best condition that describes the Before/After Condition of the project		
	Before Improvement Condition	After Improvement Condition	Benefit
0	Select Current Condition	None	None

Subsection #2: Traffic Improvements For Other Project Types	
<p>a. Enter the pre-improvement (current) average traffic speed of the corridor:</p>	<p>PM Peak Average speeds: Scottsdale Road (24 mph), Bell Road (32 mph), Baseline Road (23 mph), Northern Ave (21 mph), Elliot Road (20 mph), Peoria Ave (27 mph), Indian School Rd (25 mph), Greenfield Road (27 mph)</p>
<p>b. Enter the post-improvement average traffic speed of the corridor:</p>	<p>PM Peak Average speeds (post-improvement): Scottsdale Road (29 mph), Bell Road (36 mph), Baseline Road (29 mph), Northern Ave (25 mph), Elliot Road (24 mph), Peoria Ave (30 mph), Indian School Rd (29 mph), Greenfield Road (31 mph)</p>

Map of ICM Corridors Identified in the SM&O Plan



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Investment Category	Performance Measure	Relevant Performance Metrics
Integrated Corridor Management	Incident Management	Freeway clearance time Annual number of secondary crashes
	Travel Time Reliability	95% planning time index
		Truck Travel Time Reliability (TTTR) Index
		Vehicle miles traveled (VMT)/year
	Corridor Throughput	Person throughput/year Transit route on-time performance
	Safety	Total fatal and injury crashes/year
		Annual crash rate
Regional Priority Arterials	Travel Time Reliability	95% planning time index
	Corridor Throughput	Vehicle miles traveled (VMT)/year
		Person throughput
	Safety	Total fatal and injury crashes/year
		Annual crash rate
Transit Mobility	Transit route on-time performance Transit ridership	
Regional Operations Priorities	After-hours TMC Operations	Frequency of response to after-hours traffic incidents
	Freeway Service Patrol	Number of assists per year
	Traveler Information and Alerts	Travel time coverage (miles)
		Regional mobile application subscribers