ARIZONA
DEPARTMENT OF ADMINISTRATION
TECHNOLOGY

Project Investment Justification

Automated Traffic Management System (ATMS)

DT25011

Department of Transportation

Contents

1. General Information

PIJ ID: DT25011
PIJ Name: Automated Traffic Management System (ATMS)
Account: Department of Transportation
Business Unit Requesting: Transportation Systems Management and Operations (TSMO)
Sponsor: Gregory Byres
Sponsor Title: State Engineer Deputy Director
Sponsor Email: gbyres@azdot.gov
Sponsor Phone: (602) 712-7431

2. Meeting Pre-Work

2.1 What is the operational issue or business need that the Agency is trying to solve? (i.e....current process is manual, which increases resource time/costs to the State/Agency, and leads to errors…):

ADOT is currently using Maxview, a traffic management software system. Maxview primarily controls and monitors traffic signals. However, its capabilities are limited because it cannot interact directly with other systems or provide real-time insights regarding the functioning of the traffic signals.

Some of the key gaps with the existing system include:

- Maxview runs a pre-set traffic signal control program (how long a light stays green or red), but if there's an issue (like a malfunction or a failure), it does not provide any real-time information or alerts about the issue. This makes troubleshooting and problem-solving difficult as ADOT cannot remotely diagnose or fix issues to the traffic signal. So, ADOT can be unaware of traffic signal issues unless reported by citizens or commuters.
- Maxview lacks the flexibility to respond dynamically to changes in traffic conditions. Currently ADOT has detector stations/ramp meters that monitor the number of vehicles entering the freeway. Maxview doesn't communicate this data so that adjustments can be made to ramp meters in real-time. This is problematic because if traffic conditions change, for example heavy traffic or an accident, the system cannot adapt, potentially leading to traffic congestion.
- Maxview is not able to manage the Closed Circuit Television (CCTV) Cameras within the Traffic Operation Center (TOC). This creates inefficiencies because ADOT has to switch between different systems to access different cameras, making it harder to monitor and manage traffic situations effectively.
- The 101 Integrated Corridor Management (ICM) system is utilized by other entities within the Phoenix area (Such as Glendale, Peoria, and Tempe), which is their crucial system for managing traffic, especially across multiple cities. Maxview does not connect to this system, which is problematic when collaboration between various teams and municipalities is necessary.
- ADOT requires a centralized control system that allows for dynamic, real-time communication of current traffic conditions to monitor and control all traffic-related devices/infrastructure; signals, cameras, ramp meters, vehicle detector stations, CCTVs, Dynamic Message Signs (DMS), pumphouses, etc. This will improve overall management of the freeway systems and will reduce inefficiencies and streamline operations.

2.2 How will solving this issue or addressing this need benefit the State or the Agency?

Addressing this need will benefit the Agency as follows:

- Improving traffic flow due to congestion, accidents or weather enhances safety and commuter satisfaction.
- The ability to remotely be made aware of traffic signal issues and consequently be able to diagnose or fix the issue saves time/resources and keeps traffic flow from becoming overly congested, enhancing commuter safety.
- The ability to monitor the number of vehicles entering the freeway and make adjustments to ramp meters remotely in real-time during accidents, weather or heavy traffic volume will help with traffic congestion/flow and commuter safety.
- Having the ability to integrate with the ICM system is crucial for managing traffic across multiple cities, improving collaboration between various teams and municipalities.
- Having a centralized automated traffic management system that allows for dynamic, real-time communication of current traffic conditions to monitor and control all traffic-related devices/infrastructure (signals, cameras, ramp meters, vehicle detector stations, CCTVs, Dynamic Message Signs (DMS), pumphouses, etc.) will improve overall management of the freeway systems, reducing inefficiencies and streamlining operations, therefore saving time and resources.
- The data provided by a centralized automated traffic management system will provide immediate analysis for informed decision making during accidents or weather events.

2.3 Describe the proposed solution to this business need.

The proposed solution would be a comprehensive centralized platform for managing and monitoring multiple Intelligent Transportation Systems (ITS) devices from a single interface, to include:

- integration with the ICM system, CCTV cameras, Dynamic Message Signs (DMS), signals, ramp meters, vehicle detectors stations, pumphouses, etc.
- real-time visibility into system performance, ensuring quick responses to system issues.
- flexible alert options, including text and email notifications, which allow for timely responses to system anomalies or alarms.

2.4 Has the existing technology environment, into which the proposed solution will be implemented, been documented?

Yes

2.4a Please describe the existing technology environment into which the proposed solution will be implemented.

2.5 Have the business requirements been gathered, along with any technology requirements that have been identified?

Yes

2.5a Please explain below why the requirements are not available.

3. Pre-PIJ/Assessment

3.1 Are you submitting this as a Pre-PIJ in order to issue a Request for Proposal (RFP) to evaluate options and select a solution that meets the project requirements?

Yes

3.1a Is the final Statement of Work (SOW) for the RFP available for review?

Yes

3.2 Will you be completing an assessment/Pilot/RFP phase, i.e. an evaluation by a vendor, 3rd party or your agency, of the current state, needs, & desired future state, in order to determine the cost, effort, approach and/or feasibility of a project?

Yes

3.2a Describe the reason for completing the assessment/pilot/RFP and the expected deliverables.

The purpose of completing the RFP was to determine what solutions were available that meet ADOT's requirements/needs for enhanced support to the Traffic Management Infrastructure & Operations within ADOT.

Expected deliverables are to provide a centralized operation, real-time monitoring of all signals, flexible text/email alerts, system-wide device communication and alarm status monitoring, and integration with a wide range of ITS devices.

3.2b Provide the estimated cost, if any, to conduct the assessment phase and/or Pilot and/or RFP/solicitation process.

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3.2e Based on research to date, provide a high-level cost estimate to implement the final solution.

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4. Project

4.1 Does your agency have a formal project methodology in place?

Yes

4.2 Describe the high level makeup and roles/responsibilities of the Agency, Vendor(s) and other third parties (i.e. agency will do...vendor will do...third party will do).

ADOT ITG Project Manager - Responsible for procurement, and coordination of the project

Sponsor - Responsible for the budget, approval of the project deliverables and issue resolution

Vendor (Kimley-Horn) - Responsible for onboarding/implementation, configuration and training

4.3 PM Name

Dayana Carranza Garcia

4.3 PM Email

dcarranzagarcia.consultant@azdot.gov

4.4 Is the proposed procurement the result of an RFP solicitation process?

Yes

4.5 Is this project referenced in your agency's Strategic IT Plan?

Yes

5. SCHEDULE

5.1 Is a project plan available that reflects the estimated Start Date and End Date of the project, and the supporting Milestones of the project?

Yes

5.2 Provide an estimated start and finish date for implementing the proposed solution.

Est. Implementation Start Date	Est. Implementation End Date
6/4/2025 12:00:00 AM	7/31/2026 12:00:00 AM

5.3 How were the start and end dates determined?

Based on project plan

5.3a List the expected high level project tasks/milestones of the project, e.g., acquire new web server, develop software interfaces, deploy new application, production go live, and estimate start/finish dates for each, if known.

Milestone / Task	Estimated Start Date	Estimated Finish Date
Project Kickoff	06/04/25	06/04/25
Training Plan and Documentation	06/16/25	10/15/25
Preliminary Engineering / System Architecture	06/16/25	09/30/25
Preliminary Engineering / Design Document	06/16/25	09/30/25
Preliminary Engineering / Requirements Walkthrough	07/01/25	07/31/25
Implementation Plan	07/14/25	08/29/25
Transition Plan	07/14/25	08/29/25
Implementation (Additional) / Pump Stations / Design Documentation	09/01/25	10/31/25

Implementation (Additional) / Pump Stations / API and SCADA Exploration	09/01/25	10/31/25
Project invoicing/payment (items completed per SOW Appendix A,B for Aug-Sept)	09/08/25	10/31/25
Project invoicing/payment (items completed per SOW Appendix A,B for June-July)	09/10/25	10/01/25
System Testing and Acceptance / Acceptance Document	10/01/25	12/31/25
System Testing and Acceptance / Verification Document	10/01/25	12/31/25
Installation / Install ATMS Software	10/01/25	03/31/26
Installation / Bulk Import, Install Client App, Verification of ITS devices	10/13/25	11/28/25
Training (5)	10/20/25	04/10/26
Implementation (Additional) / Detector Stations	11/03/25	03/31/26
Implementation (Additional) / Ramp Meters	11/03/25	03/31/26
Implementation (Additional) / Traction Metrics ATSPM	11/03/25	01/30/26
Implementation (Additional) / Pump Stations / Proof of Concept Development	11/03/25	12/31/25
Implementation (Additional) / UDOT ATS	11/03/25	01/30/26
Project invoicing/payment (items completed per SOW Appendix A,B for Oct-Nov)	11/10/25	12/31/25
Implementation (Additional) / Traction Priority	12/01/25	06/30/26
Implementation / KITS Graphics	12/01/25	03/31/26
Implementation / KITS Templates	12/01/25	03/31/26
System Testing and Acceptance / Acceptance Test Excecution	12/11/25	12/31/25
Implementation (Additional) / CCTV	01/01/26	01/30/26
Implementation (Additional) / Pump Stations / Production Development	01/05/26	02/27/26
Implementation / Signals Verification	01/05/26	01/30/26

Project invoicing/payment (items completed per SOW Appendix A,B for Dec-Feb)	01/12/26	03/27/26
Implementation (Additional) / Pump Stations / Device Integration	03/02/26	03/31/26
System Testing and Acceptance / Acceptance	03/16/26	06/30/26
Project invoicing/payment (items completed per SOW Appendix A,B for March-May)	04/06/26	06/26/26
SSP Document to DOHS	04/10/26	05/29/26
Go- Live	06/30/26	07/03/26
Closing & Lessons Learned (to include final invoicing/payment)	07/01/26	07/31/26

5.4 Have steps needed to roll-out to all impacted parties been incorporated, e.g. communications, planned outages, deployment plan?

Yes

5.5 Will any physical infrastructure improvements be required prior to the implementation of the proposed solution. e.g., building reconstruction, cabling, etc.?

No

5.5a Does the PIJ include the facilities costs associated with construction?

5.5b Does the project plan reflect the timeline associated with completing the construction?

6. Impact

6.1 Are there any known resource availability conflicts that could impact the project?

No

6.1a Have the identified conflicts been taken into account in the project plan?

6.2 Does your schedule have dependencies on any other projects or procurements?

No

6.2a Please identify the projects or procurements.

6.3 Will the implementation involve major end user view or functionality changes?

Yes

6.4 Will the proposed solution result in a change to a public-facing application or system?

No

7. Budget

7.1 Is a detailed project budget reflecting all of the up-front/startup costs to implement the project available, e.g, hardware, initial software licenses, training, taxes, P&OS, etc.?

Yes

7.2 Have the ongoing support costs for sustaining the proposed solution over a 5-year lifecycle, once the project is complete, been determined, e.g., ongoing vendor hosting costs, annual maintenance and support not acquired upfront, etc.?

Yes

7.3 Have all required funding sources for the project and ongoing support costs been identified?

Yes

7.4 Will the funding for this project expire on a specific date, regardless of project timelines?

No

7.5 Will the funding allocated for this project include any contingency, in the event of cost over-runs or potential changes in scope?

No

8. Technology

8.1 Please indicate whether a statewide enterprise solution will be used or select the primary reason for not choosing an enterprise solution.

There is not a statewide enterprise solution available

8.2 Will the technology and all required services be acquired off existing State contract(s)?

No

8.3 Will any software be acquired through the current State value-added reseller contract?

No

8.3a Describe how the software was selected below:

8.4 Does the project involve technology that is new and/or unfamiliar to your agency, e.g., software tool never used before, virtualized server environment?

Yes

8.5 Does your agency have experience with the vendor (if known)?

Yes

8.6 Does the vendor (if known) have professional experience with similar projects?

Yes

8.7 Does the project involve any coordination across multiple vendors?

No

8.8 Does this project require multiple system interfaces, e.g., APIs, data exchange with other external application systems/agencies or other internal systems/divisions?

Yes

8.9 Have any compatibility issues been identified between the proposed solution and the existing environment, e.g., upgrade to server needed before new COTS solution can be installed?

No

8.9a Describe below the issues that were identified and how they have been/will be resolved, or whether an ADOA-ASET representative should contact you.

8.10 Will a migration/conversion step be required, i.e., data extract, transformation and load?

Yes

8.11 Is this replacing an existing solution?

Yes

8.11a Indicate below when the solution being replaced was originally acquired.

The solution being replaced was originally implemented in 2015.

8.11b Describe the planned disposition of the existing technology below, e.g., surplused, retired, used as backup, used for another purpose:

Maxview data will be migrated to the new software. Maxview will be deactivated/retired.

8.12 Describe how the agency determined the quantities reflected in the PIJ, e.g., number of hours of P&OS, disk capacity required, number of licenses, etc. for the proposed solution?

This information was determined by the vendor's architects (Kimley-Horn) based on device counts and ADOT Requirements. The device counts were determined by ADOT from field inventory checks as part of planning efforts.

8.13 Does the proposed solution and associated costs reflect any assumptions regarding projected growth, e.g., more users over time, increases in the amount of data to be stored over 5 years?

Yes

8.14 Does the proposed solution and associated costs include failover and disaster recovery contingencies?

No

8.14a Please select why failover and disaster recovery is not included in the proposed solution.

Not needed

8.15 Will the vendor need to configure the proposed solution for use by your agency?

Yes

8.15a Are the costs associated with that configuration included in the PIJ financials?

Yes

8.16 Will any app dev or customization of the proposed solution be required for the agency to use the project in the current/planned tech environment, e.g. a COTS app that will req custom programming, an agency app that will be entirely custom developed?

No

8.16a Will the customizations inhibit the ability to implement regular product updates, or to move to future versions?

8.16b Describe who will be customizing the solution below:

8.16c Do the resources that will be customizing the application have experience with the technology platform being used, e.g., .NET, Java, Drupal?

8.16d Please select the application development methodology that will be used:

8.16e Provide an estimate of the amount of customized development required, e.g., 25% for a COTS application, 100% for pure custom development, and describe how that estimate was determined below:

8.16f Are any/all Professional & Outside Services costs associated with the customized development included in the PIJ financials?

8.17 Have you determined that this project is in compliance with all applicable statutes, regulations, policies, standards & procedures, incl. those for network, security, platform, software/application &/or data/info found at aset.az.gov/resources/psp?

Yes

8.17a Describe below the compliance issues that were identified and how they have been/will be resolved, or whether an ADOA-ASET representative should contact you:

8.18 Are there other high risk project issues that have not been identified as part of this PIJ?

No

8.18a Please explain all unidentified high risk project issues below:

9. Security

9.1 Will the proposed solution be hosted in a vendor managed environment?

Yes

9.1a Please select from the following vendor-hosted options:

Commercial data center environment, e.g AWS, Azure

9.1b Describe the rationale for selecting the vendor-hosted option below: Ex. following cloud smart goal, lower cost?.....

The software selected meets the ITG/State standard for software being a SaaS/cloud based solution.

9.1c Has the agency been able to confirm the long-term viability of the vendor hosted environment? Ex. is the environment setup in an efficient and effective way-/-Has a cloud specialist reviewed the environment (Agency is mainly focused on cost of operation)

Yes

9.1d Has the agency addressed contract termination contingencies, e.g., solution ownership, data ownership, application portability, migration plans upon contract/support termination?

Yes

9.1e Has a Network Architecture Diagram and/or System Security Plan (draft or finalized version) being provided and reviewed by AZDOHS?

No

9.1f Has the spreadsheet located at https://azdohs.gov/sites/default/files/azramp-level-1-prerequisite-control-sheet_0.xlsx already been completed by the vendor and approved by AZDOHS?

No

9.2 Will the proposed solution be hosted in a state managed environment?

No

9.2a Where will the on-premise solution be located:

9.2b Were vendor-hosted options available and reviewed?

9.2c Describe the rationale for selecting an on-premise option below:

9.2d Will any data be transmitted into or out of the agency's on-premise environment or the State Data Center?

9.3 Will any Confidential state data as defined in the 8110 Statewide Data Classification Policy be transmitted, stored, or processed within this system?

Yes

9.3a Describe below what security infrastructure/controls are/will be put in place to safeguard this data:

The solution will be hosted on-premise in the ADOT Data Center. This solution will also utilize Traction Travel/Priority software for reporting which will be vendor hosted using Azure, and will complete the AZRamp certification process to verify that state data will be protected/safeguarded.

10. Areas of Impact

Application Systems

Database Systems

MySQL

Software

COTS Application Acquisition

Hardware

Hosted Solution (Cloud Implementation)

Other

Traction Travel/Priority is hosted in the Azure Cloud

Security

Telecommunications

Enterprise Solutions

Contract Services/Procurements

11. Financials

Description	PIJ Category	Cost Type	Fiscal Year Spend	Quantity	Unit Cost	Extended Cost	Tax Rate	Tax	Total Cost
Professional & Outside Services	Professional & Outside Services	Development	1	1	$89,200	$89,200	0.00%	$0	$89,200
Professional & Outside Services	Professional & Outside Services	Development	2	1	$989,300	$989,300	0.00%	$0	$989,300
Hosting	Communications	Development	2	1	$23,020	$23,020	860.00%	$1,980	$25,000
Support & Maintenance	Professional & Outside Services	Development	2	1	$85,000	$85,000	0.00%	$0	$85,000
Licensing	License & Maintenance Fees	Development	2	1	$732,081	$732,081	860.00%	$62,959	$795,040
Hosting	Communications	Operational	3	1	$23,941	$23,941	860.00%	$2,059	$26,000
Support & Maintenance	Professional & Outside Services	Operational	3	1	$113,000	$113,000	0.00%	$0	$113,000
Hosting	Communications	Operational	4	1	$24,862	$24,862	860.00%	$2,138	$27,000
Support & Maintenance	Professional & Outside Services	Operational	4	1	$118,000	$118,000	0.00%	$0	$118,000
Hosting	Communications	Operational	5	1	$25,783	$25,783	860.00%	$2,217	$28,000
Support & Maintenance	Professional & Outside Services	Operational	5	1	$123,000	$123,000	0.00%	$0	$123,000

Base Budget (Available)	Base Budget (To Be Req)	Base Budget % of Project
$0	$0	0%
APF (Available)	**APF (To Be Req)**	**APF % of Project**
$0	$0	0%
Other Appropriated (Available)	**Other Appropriated (To Be Req)**	**Other Appropriated % of Project**
$0	$0	0%
Federal (Available)	**Federal (To Be Req)**	**Federal % of Project**
$2,418,540	$0	100%
Other Non-Appropriated (Available)	**Other Non-Appropriated (To Be Req)**	**Other Non-Appropriated % of Project**
$0	$0	0%

Total Budget Available	Total Development Cost
$2,418,540	$1,983,540
Total Budget To Be Req	**Total Operational Cost**
$0	$435,000
Total Budget	**Total Cost**
$2,418,540	$2,418,540

12. Project Success

Please specify what performance indicator(s) will be referenced in determining the success of the proposed project (e.g. increased productivity, improved customer service, etc.)? (A minimum of one performance indicator must be specified)

Please provide the performance objective as a quantifiable metric for each performance indicator specified.
Note: The performance objective should provide the current performance level, the performance goal, and the time period within which that performance goal is intended to be achieved. You should have an auditable means to measure and take corrective action to address any deviations.
Example: Within 6 months of project completion, the agency would hope to increase "Neighborhood Beautification" program registration by 20% (3,986 registrants) from the current registration count of 19,930 active participants.

Performance Indicators

- Improved Traffic Flow to reduce travel times on corridors and reduce delays at signalized interchanges:

The ability to remotely manage and coordinate the traffic signal timings during normal/typical traffic conditions and during abnormal/construction/incident traffic conditions will improve traffic flow and commuter travel time.

When there are multiple signals in areas where traffic conditions exist, these signal timings can be managed remotely to improve travel time in that corridor. The idea is for the commuter not to hit every red light when

traveling home, making commutes quicker and safer.

Within 1 year of project implementation, providing appropriate signal timing for the traffic conditions will result in a traffic flow improvement, causing a 5 to 10% reduction in travel time for commuters.

- Reduction of site visits to diagnose faults:

Currently the ADOT team requires technician visits to sites an average of 360 times (30 per month) per year. Within one year, through implementation of the ATMS solution, site visits will be reduced by 25% annually, to

approximately 270 per year.

Responsible Owner for KPI

Adam McGuire

Email Address

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13. Conditions

Conditions for Approval

14. Oversight Summary

Project Background

Business Justification

Implementation Plan

Vendor Selection

Budget or Funding Considerations

15. PIJ Review Checklist

Agency Project Sponsor

Gregory Byres

Agency CIO (or Designee)

Steve West

Agency ISO (or designee)

Thomas Branham

OSPB Representative

ASET Engagement Manager

ASET SPR Representative

Chris Reynolds

Agency SPO Representative

Agency CFO

Kristine ward