Automated Traffic Management System (ATMS)

State of Arizona

Arizona Department of Transportation

Project Investment Justification (PIJ)

Date of ITAC: May 22, 2025

(DT25011)

ARIZONA DEPARTMENT OF TRANSPORTATION

Agency Vision

To safely connect people and empower our economy

Agency Mission

We provide highway infrastructure and transportation services

Team Introduction

ARIZONA DEPARTMENT OF ADMINISTRATION

Roles Present at ITAC

- **Steve West** - *ADOT Chief Information Officer*
- **Johnathon Sullinger** - *ADOT Chief Technology Officer*

Project Introduction

Stated Operational/Business Issue

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

Key gaps with existing system:

- Maxview runs a pre-set traffic signal control program, but if there is a malfunction/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.
- The system cannot dynamically adjust to changes in traffic conditions, such as accidents or heavy congestion, because it does not communicate with ramp meters or detector stations in real-time.
- Maxview does not integrate with ADOT's CCTV system. ADOT must switch between systems to monitor traffic, hindering effective traffic management. 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.
- Maxview is not connected to the 101 integrated Corridor Management (ICM) system, which limits collaboration between ADOT and other municipalities in the Phoenix area for coordination of traffic management.

Proposed Solution

ARIZONA DEPARTMENT OF ADMINISTRATION

Benefit to the State Agency and Constituents

The proposed solution offers a range of benefits that will significantly enhance ADOT's ability to manage traffic systems efficiently. Addressing this will benefit the agency as follows:

- 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.
- 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 will improve overall management of the freeway systems, reducing inefficiencies and streamlining operations, therefore saving time and resources.
- 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.

Proposed Solution

ARIZONA DEPARTMENT OF ADMINISTRATION

Overview of Proposed Solution

ADOT, in partnership with Kimley Horn, will integrate KITS, an Automated Traffic Management System to monitor and automate traffic operations. This solution aims to create a unified centralized platform for efficiently managing and monitoring multiple Intelligent Transportation System (ITS) devices from a single interface.

Key features:

- 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.

Proposed Solution

ARIZONA DEPARTMENT OF ADMINISTRATION

Due Diligence and Method of Procurement

ADOT received offers from three vendors for implementation of an ATMS; Kimley-Horn and Associates Inc., Parsons Transportation Group Inc., and Q-Free America Inc.

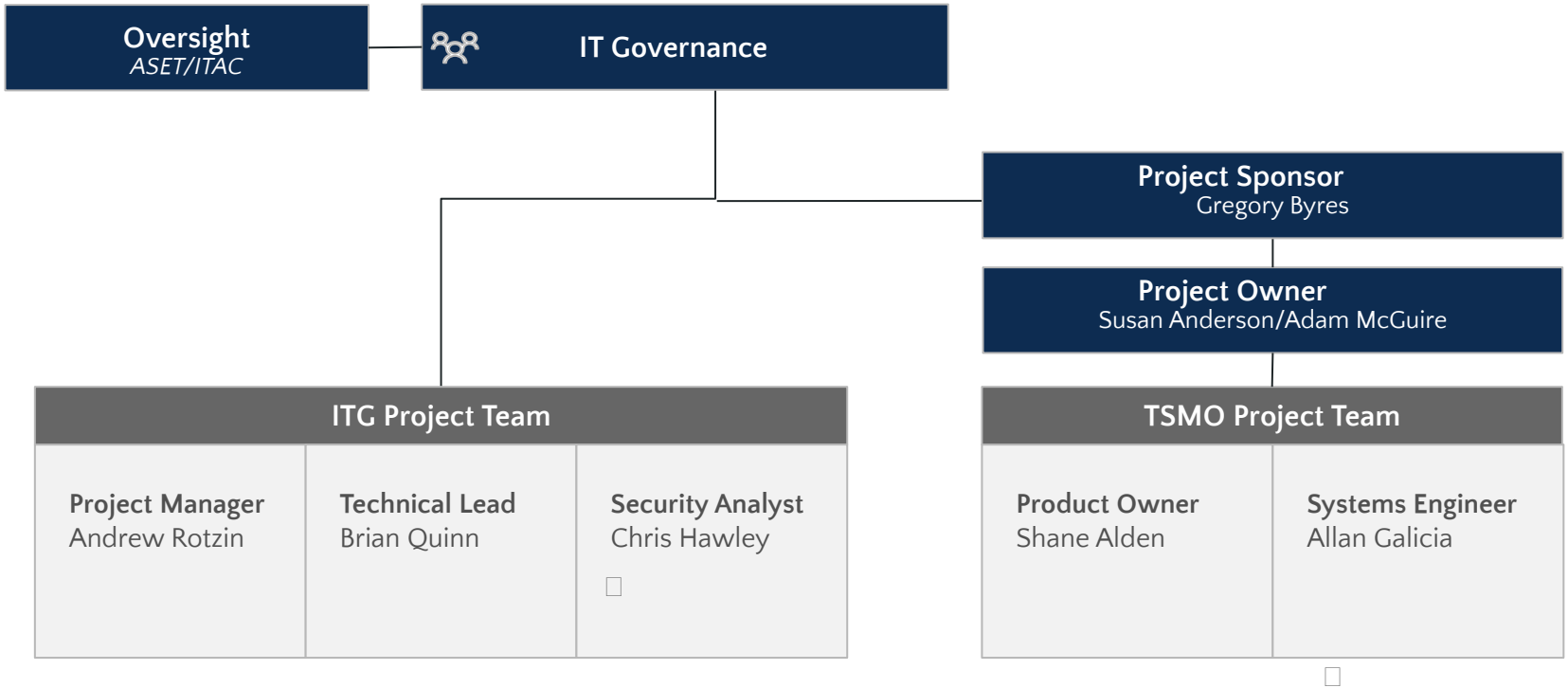
Vendor offers were scored based on criteria including method of approach, device communication features, support and maintenance, proposed timeline, team qualifications, and others. The recommended vendor, Kimley-Horn, met or exceeded the scores of the other two vendors in all categories except timeline and cost, particularly the device communication features and support and maintenance criteria. Parsons Transportation Group and Q-Free America also had noted weaknesses in their offers regarding the device communication, support and maintenance, and firm experience criteria categories, making them weaker candidates.

While Kimley-Horn's offer was also the most costly, considering the other strengths of their proposal, they were still selected as the recommended vendor.

Technology

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.

Program Structure



Project Responsibilities

ARIZONA DEPARTMENT OF ADMINISTRATION

Identify Proposed Solutions Responsibilities

Agency

1. Requirement Definitions
2. Data Validation
3. User Testing
4. Vendor Management
5. Data Governance
6. Communication Plan

Shared

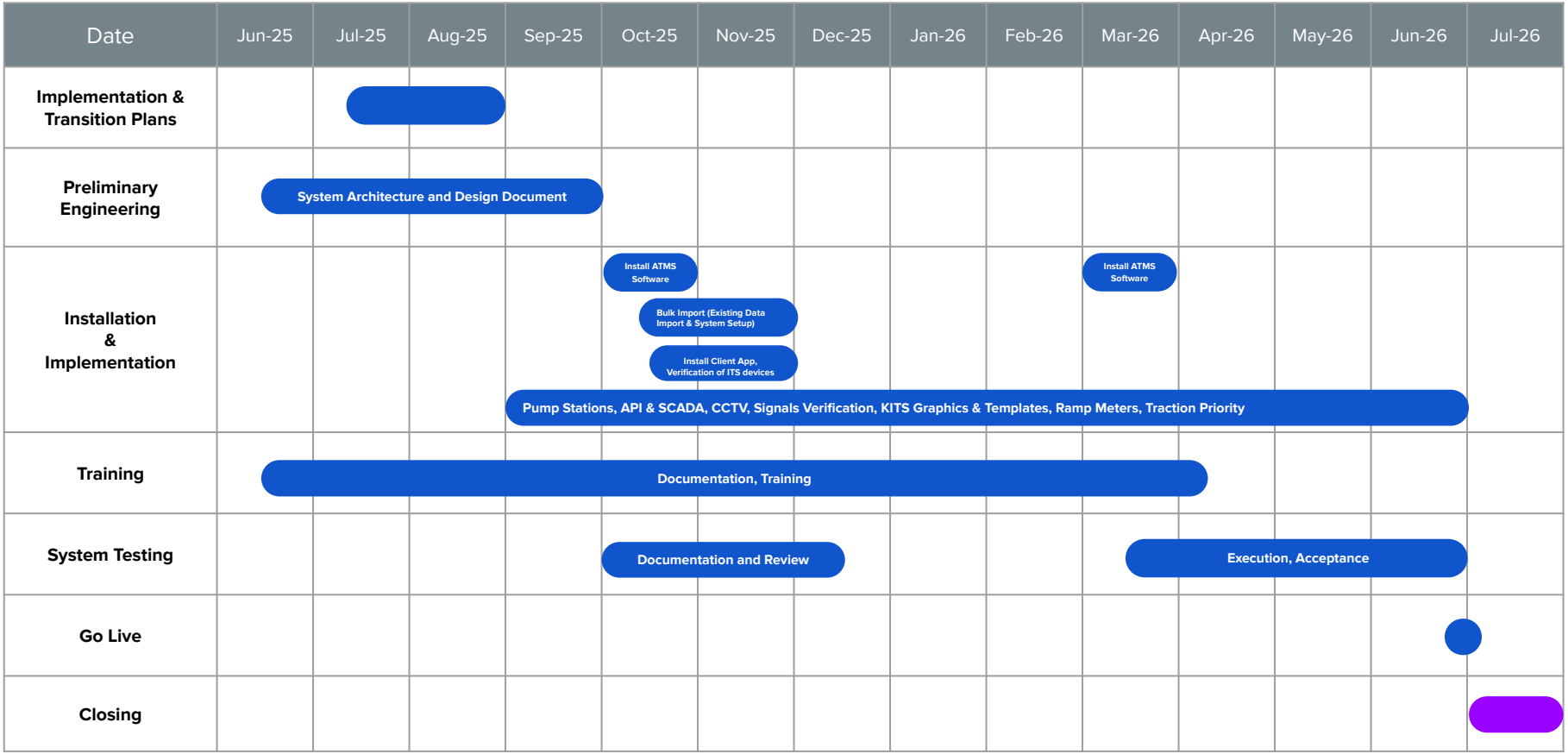
1. Project management
2. Requirement Fulfillment
3. Documentation of Systems

Vendor/Contractor

1. Application Upgrade and Validation
2. Training
3. Migration steps
4. Implementation
5. Configuration
6. Test Case Creation

Proposed Project Timeline

ARIZONA DEPARTMENT OF ADMINISTRATION



Project Costs

ARIZONA DEPARTMENT OF ADMINISTRATION

Project Costs by Category	FY25	FY26	FY27	FY28	FY29	Total
Professional & Outside Services (Contractors)	$89,200	$989,300				**$1,078,500**
Hardware						
Software						
Communications (Hosting)		$25,000	$26,000	$27,000	$28,000	**$106,000**
Facilities						
License & Maintenance Fees		$795,040	$113,000	$118,000	$123,000	**$1,149,040**
Other Operational Expenditures		$85,000				**$85,000**
Total Development	$89,200	$1,894,340				**$1,983,540**
Total Operational			$139,000	$145,000	$151,000	**$435,000**

Financial Impact

ARIZONA DEPARTMENT OF ADMINISTRATION

Breakdown of Financial Impact

Project Development Funding	
Base Budget - Available	0
Base Budget - To Be Requested	0
APF Budget - Available	0
APF Budget - To Be Requested	0
Other Appropriated - Available	0
Other Appropriated - To Be Requested	0
Federal - Available	$2,418,540.00
Federal - To Be Requested	0

Total Development Project Funding	
Available Budget	$2,418,540.00
To Be Requested Budget	0

Operational	
Current 3-Year Operational Cost (Avg)	
Proposed 3-Year Operational Cost (Avg)	$145,000.00
Financial Impact of New System	

Total Operational Funding - Project	
To Be Requested Budget	

What Success Looks Like

ARIZONA DEPARTMENT OF ADMINISTRATION

Success Criteria

a. Reduction of site visits for ADOT to diagnose faults.
b. ADOT will have the ability to remotely manage and coordinate the traffic signal timings during normal/typical traffic conditions and during abnormal/construction/incident traffic conditions to improve traffic flow and commuter travel time, creating improved traffic flow for a quicker and safer commute.

Measure of Success

- 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.

- 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.

Q & A Session

Recommended Conditions

ADOA-ASET Conditions

a. Should development costs exceed the approved estimates by 10% or more, or should there be significant changes to the proposed technology scope of work or implementation schedule, the Agency must amend the PIJ to reflect the changes and submit it to ADOA-ASET, and ITAC if required, for review and approval prior to further expenditure of funds.

b. Monthly reporting on the project status is due to ADOA-ASET no later than the 15th of the month following the start of the project. Failure to comply with timely project status reporting will affect the overall project health. The first status report for this project is due on July 15, 2025.

ITAC Voting Options

ARIZONA DEPARTMENT OF ADMINISTRATION

What ITAC May Consider In Review Whether:

a. The proposed solution addresses the stated problem or situation;

b. The budget unit is competent to carry out the project successfully;

c. Sufficient sponsorship and support by budget unit leadership exists;

d. Cost estimates provided are accurate;

e. The proposed project aligns with the budget unit's Strategic IT Plan; and

f. The proposed solution complies with statewide IT standards.

ITAC Motions:

a. Move to Approve

b. Move to Approve with Conditions As Presented

c. Move to Approve with Conditions

   i. Committee May Modify or

   ii. Add Conditions

d. Move To Deny

Relevant Statutes and Rules

Per A.R.S. § 18-101 - Per Administrative Code R2-18-101