State of California
Department of Transportation
Director's Office Signature Routing Sheet

DOTS Number:	2023010424
Subject:	Approval of the Special Project Report (SPR) for the Transportation Asset Management System (TAMS) Project
Summary:	In accordance with the State Administrative Manual (SAM), Section 4819.36, which mandates the submission of a Special Project Report (SPR) for significant project changes, this memo presents the SPR for the California Department of Transportation (Caltrans), Transportation Asset Management System (TAMS) project. SAM Section 4819.35 states, "SPRs that must be submitted to the Department of Technology must be transmitted within 30 days after recognition of the situation that necessitates preparation of the SPR." Acknowledging the importance of accurately reflecting the project's current direction, California Department of Technology (CDT) extended this submission deadline to October 2023. The additional lime provided by the CDT was used to develop a project schedule and plan that facilitated the integration of the SI Vendor's expertise and effectively re-baseline the project schedule within the SPR. The TAMS SPR recognizes the award to Rizing Geospatial as the TAMS SI (also referred to as TAMS2) with corresponding updates to the project schedule and financial forecasting. These changes realign the project following the previous contract approval at the conclusion of the Stage 4 Project Readiness and Approval (S4PR&A), now referred to as TAMSI. The proposed changes do not alter the overall project objectives nor the scope and core requirements, but impact the schedule, cost, and phased procurement strategy. The total revised project cost is $31,980,973, an increase from the previously approved cost of $28,277,793. The schedule has been extended to account for the new SI Vendor and two phased TAMS2 and TAMS3 procurement approach.
Briefing:	☐Scheduled ☑Not Required ☐Already Held

Program/District Approvals:

Luc Sou Digitally signed by Luc Sou Date: 2023.11.22 13:07:41 -08'00'		
Luc Sou Division Chief, IT PBMD	Name & Title	Name & Title
Steven D Keck Digitally signed by Steven Keck Date: 2023.11.27 06:41:30 -08'00'		
Steven Keck Chief Financial Officer	Name & Title	Name & Title

Legal/Legislative/Federal/Public Affairs Approvals:

(if needed)

Name & Title	Name & Title	Name & Title	Name & Title

Director's Office Approvals:

Velessata Kelley Digitally signed by Velessata Kelley Date: 2023.11.28 12:41:32 -08'00'	Michael Keever (Dec 5, 2023 13:43 PST)	Tony Tavares
Velessata Kelley Chief of Staff	Michael D. Keever Chief Deputy Director	Tony Tavares Director 12/08/2023

CALIFORNIA STATE TRANSPORTATION AGENCY

TRANSPORTATION AGENCY
ISSUE MEMORANDUM

TO: Toks Omishakin, Secretary

FROM: Tony Tavares, Director
California Department of Transportation

PREPARED BY: Marisa Rey, TAMS IT Project Manager
HQ - Enterprise Portfolio Services
(916) 203-4250; marisa.rey@dot.ca.gov

DATE: December 8, 2023

SUBJECT: **Approval of the Special Project Report (SPR) for the Transportation Asset Management System (TAMS) Project**

Check applicable boxes: ☒ **Request for Approval** ☐ **For Secretary's Information**

☐ Non-Competitively Bid Contract Justification
☐ Other Procurement-Related Document[1]
☒ Project Approval Lifecycle/Special Project Report
☐ Rulemaking/Regulation Document
☐ Audit/Investigation-Related Document
☐ Other

FINAL APPROVAL NEEDED BY: December 4, 2023

SUBJECT: Approval of the Special Project Report (SPR) for the Transportation Asset Management System (TAMS) Project

SUMMARY: The Special Project Report (SPR) for the Transportation Asset Management System (TAMS) project is presented for your approval.

In accordance with the State Administrative Manual (SAM), Section 4819.36, which mandates the submission of a Special Project Report (SPR) for significant project changes, this memo presents the SPR for the California Department of Transportation (Caltrans), Transportation Asset Management System (TAMS) project.

This SPR, required by the California Department of Technology (CDT), details the revised project schedule, updated cost estimates, and the strategic adjustments made since the initial approval at the Stage 4 Project Readiness and Approval (S4PR&A) stage. SAM Section 4819.35 states, "SPRs that must be submitted to the Department of Technology must be transmitted within 30 days after recognition of the situation that necessitates preparation of the SPR." Acknowledging the importance of accurately reflecting the project's current direction, CDT extended this submission deadline to October 2023.

This extension was crucial for enabling a comprehensive collaboration with the new System Integrator (SI) Vendor. The additional time provided by CDT was used to develop a project schedule and plan that facilitated the integration of the SI Vendor's expertise and effectively re-baseline the project schedule within the SPR. The TAMS SPR recognizes the award to Rizing Geospatial as the TAMS SI (also referred to as TAMS2) with corresponding updates to the project schedule and financial forecasting. These changes realign the project following the previous contract approval at the conclusion of the Stage 4 Project Readiness and Approval (S4PR&A), now referred to as TAMS1.

The proposed changes do not alter the overall project objectives nor the scope and core requirements, but impact the schedule, cost, and phased procurement strategy. The total revised project cost is $31,980,973, an increase from the previously approved cost of $28,277,793. The schedule has been extended to account for the new SI Vendor and two-phased TAMS2 and TAMS3 procurement approaches.

DISCUSSION/PRO-CON ARGUMENTS:

PRO:
The proposed changes respond proactively to challenges faced during TAMS1 and position the project for success moving forward. Segmenting the project into TAMS2 and TAM3 will allow for specialized focus on distinct components of the project and reduce risk through a flexible yet structured execution approach. The cost increase is a direct result of adjustments made to the procurement strategy and updated schedule. There are future operation increases for maintenance and operations, CDT, and Independent Validation and Verification (IV&V) oversight due to the extended schedule that reflects a phased implementation approach. The project timeline is extended to accommodate these updates, resulting in a total project cost increase that includes prudent steps to realize the project objectives while reducing risk.

CON:
None.

EFFECT ON EXISTING LAW: There are no anticipated legislative impacts resulting from the updates outlined in the TAMS SPR.

ESTIMATED COST: The SPR presents a comprehensive financial overview, reflecting a total estimated cost of $31,980,973, which includes both the initial project phases and the adjustments for ongoing and future operations.

RECOMMENDATION(S): Formal approval of the TAMS SPR is requested to submit the required SPR to the California Department of Technology and proceed with the revised approach.

SUBJECT: **Approval of the Special Project Report (SPR) for the Transportation Asset Management System (TAMS) Project**

APPROVED:

12/08/2023

Tony Tavares, Director
Department of Transportation

Date

Mark Tollefson

12/12/2023

Toks Omishakin, Secretary
Transportation Agency

Date

Attachments:

1. 2660-544 TAMS Special Project Report November 2023
2. Copy of TAMS Project SPR FAW V2.4

Transportation Asset Management System (TAMS) Project

Special Project Report #1

November 2023

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Information Technology Project Request

Special Project Report
Executive Approval Transmittal

Agency/state entity Name			
California Department of Transportation			
Project Title (maximum of 75 characters)			**Project Acronym**
Transportation Asset Management System			TAMS
Project ID	**Approval Date**	**State entity Priority**	**Agency Priority**
2660-544		1	1

I am submitting the attached Special Project Report (SPR) in support of our request for the California Department of Technology's approval to continue development and/or implementation of this project.

I certify:

- The SPR was prepared in accordance with the State Administrative Manual Sections 4945-4945.2, my agency/state entity has considered the cost benefits analysis associated with the proposed project changes and the changes are consistent with our information management strategy as expressed in our current Agency Information Management Strategy (AIMS).
- The acquisition of the applicable information technology (IT) product(s) or service(s) required by my department that are subject to Government Code 7405 applying Section 508 of the Rehabilitation Act of 1973 as amended meets the requirements or qualifies for one or more exceptions (see following page).
- The document(s) being submitted are accessible to persons with disabilities based on the requirements specified in Section 508 of the federal Rehabilitation Act of 1973, as amended, the Government Code section 11135, and the Web Content Accessibility Guidelines (WCAG 2.0).

I have reviewed and agree with the information in the attached Special Project Report.

APPROVAL SIGNATURES		
Chief Information Officer		**Date Signed**
Marcie Kahbody		11/20/2023
Printed name:	Marcie Kahbody	
Budget Officer		**Date Signed**
Steven Keck		11/21/2023
Printed name:	Steven Keck	
State Entity Director		**Date Signed**
Tony Tavares		12/08/2023
Printed name:	Tony Tavares	
Agency Chief Information Officer		**Date Signed**
Marcie Kahbody Marcie Kahbody (Dec 13, 2023 11:34 PST)		12/13/2023
Printed name:	Marcie Kahbody	
Agency Secretary		**Date Signed**
Mark Tollefson		12/14/2023
Printed name:	Toks Omishakin	

Executive Approval Transmittal
IT Accessibility Certification

Yes or No

Yes	**The Proposed Project Meets Government Code 7405 / Section 508 Requirements and no exceptions apply.**

Exceptions Not Requiring Alternative Means of Access

Yes or No	Accessibility Exception Justification
No	The IT project meets the definition of a national security system.
No	The IT project will be located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment (i.e., "Back Office Exception.)
No	The IT acquisition Is acquired by a contractor incidental to a contract.

Exceptions Requiring Alternative Means of Access for Persons with Disabilities

Yes or No	Accessibility Exception Justification
No	Meeting the accessibility requirements would constitute an "undue burden" (i.e., a significant difficulty or expense considering all agency resources). Explain:

2 Information Technology Project Summary Package

2.1 Section A: Executive Summary

1. **Submittal Date**
   11/20/2023

2. **Type of Document**
   ☒ **SPR** ☐ **PSP ONLY** ☐ **Other:** N/A

   Project Number: 2660-544

3. **Project Title**
   Transportation Asset Management System
   Project Acronym
   TAMS
   Estimated Project Dates
   Start: February 2021 End: August 2027

4. **Submitting Agency/state entity**
   California Department of Transportation

5. **Reporting Agency/state entity**
   California State Transportation Agency (CalSTA)

6. **Project Objectives**
   The primary objective of TAMS is to create a system that will integrate asset data from source systems to better manage transportation assets and maximize funding. The TAMS will be a system that:
   - Integrates data across assets, systems, and needs.
   - Establishes an asset and performance management system that unifies analytics, strategies, and modeling for decision support.
   - Integrates project planning, scoping, programming, and establishes funds and performance management across multiple programs in the department.
   - Integrates performance outcomes, business intelligence, reporting and dashboards.

7. **Proposed Solutions**
   The new solution will provide the information necessary for business units across Caltrans and both internal and external stakeholders to make more informed decisions to effectively allocate asset resources. The Transportation Asset Management System (TAMS) Project will implement a modern web-based computing infrastructure that will be flexible, scalable, and based on industry enterprise architecture framework concepts. The TAMS will consolidate data that are in various systems into a single system thus providing Caltrans with asset planning and investment capabilities in support of the Caltrans Transportation Asset Management Plan (TAMP). The original TAMS contract (TAMS1) is concluded without achieving the TAMS objectives. TAMS2 is the award of a new contract to realize the TAMS objectives.

8. **Major Milestones** — **Estimated Completion Date**

   TAMS2

SI Contract Award	July 2023
Phase 0 - Onboarding and Initiation	September 2023

Phase 1 – Planning	February 2024
Phase 2 - Analysis & Design (some tasks in parallel with P1)	March 2024
Phase 3 - Build/ Implementation/ Go-Live	June 2025
Phase 4 - Closeout/Transition to M&O	August 2025
TAMS2 - Maintenance and Operations (M&O)	July 2026
TAMS3	
Procurement & SI Contract Award	September 2025
Phase 0 - Onboarding and Initiation	November 2025
Phase 1 – Planning	February 2025
Phase 2 - Analysis & Design (some tasks in parallel with P1)	July 2026
Phase 3 - Build/ Implementation/ Go-Live	May 2027
Phase 4 - Closeout/Transition to M&O	August 2027
Post Implementation Evaluation and Report (PIER)	**July 2028**

2.2 Section B: Project Contacts

Project #	2660-544
Doc Type	**SPR**

EXECUTIVE CONTACTS

	First Name	Last Name	Area Code	Phone #	E-mail
Agency Secretary	Toks	Omishakin	916	323-5400	Toks.Omishakin@calsta.ca.gov
Agency and Chief Information Officer	Marcie	Kahbody	916	324-7507	Marcie.Kahbody@calsta.ca.gov
State Entity Director	Steven	Keck	916	654-3986	Steven.Keck@dot.ca.gov
Director	Tony	Tavares	916	654-6130	Tony.Tavares@dot.ca.gov
CIO	Marcie	Kahbody	916	324-7507	Marcie.Kahbody@calsta.ca.gov
Budget Officer	Keith	Duncan	916	654-4556	Keith.Duncan@dot.ca.gov
IT Sponsor	Mike	Nguyen	916	216-5682	Michael.S.Nguyen@dot.ca.gov
Business Sponsor	Michael	Johnson	916	799-9362	Michael.B.Johnson@dot.ca.gov

DIRECT CONTACTS

	First Name	Last Name	Area Code	Phone #	E-mail
Document prepared by	Marisa	Rey	916	203-4250	Marisa.Rey@dot.ca.gov
Primary contact	Marisa	Rey	916	203-4250	Marisa.Rey@dot.ca.gov
Project Manager	Marisa	Rey	916	203-4250	Marisa.Rey@dot.ca.gov
Program Manager	Melissa	Thompson	916	869-5738	Melissa.Thompson@dot.ca.gov

2.3 Section C: Project Relevance to State and/or Departmental Plans

Project #	2660-544
Doc Type	**SPR**

1. **What is the date of your current Technology Recovery Plan (TRP)?** **Date** 10/31/22
2. **What is the date of your current Agency Information Management Strategy (AIMS)?** **Date** N/A (SaaS Solution supported by SI Vendor)
3. **For the proposed project, provide the page reference in your current AIMS and/or strategic business plan.** **Doc.** N/A **Page #** N/A
4. **Is the project reportable to control agencies?** ☒ **Yes** ☐ **No**

If YES, CHECK all that apply:

☐	a)	**The project involves a budget action.**
☐	b)	**A new system development or acquisition that is specifically required by legislative mandate or is subject to special legislative review as specified in budget control language or other legislation.**
☒	c)	**The estimated total development and acquisition costs exceed the Department of Technology's established Agency/state entity delegated cost threshold and the project does not meet the criteria of a desktop and mobile computing commodity expenditure (see SAM 4989 – 4989.3).**
☐	d)	**The project meets a condition previously imposed by the Department of Technology.**

2.4 Section D: Budget Information

Project #	2660-544
Doc Type	**SPR**

Budget Augmentation Required? ☒ No ☐ Yes

If yes, indicate fiscal year(s) and associated amount:

FY		FY		FY		FY		FY	
$ -		$ -		$ -		$ -		$ -	

PROJECT COSTS

1.	Fiscal Year	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	TOTAL
2.	**One-Time Cost**	$251,004	$1,297,505	$2,697,455	$1,870,372	$595,204	$5,214,308	$9,229,636	$4,738,754	$3,152,754	$163,225	**$29,210,208**
3.	**Continuing Costs**									$1,389,670	$1,381,095	**$2,770,765**
4.	**TOTAL PROJECT BUDGET**											**$31,980,973**

2.5 Section E: Vendor Project Budget

Project #	2660-544
Doc Type	**SPR**

Vendor Cost for SPR Development (if applicable)	N/A
Vendor Name	N/A

VENDOR PROJECT BUDGET

1.	Fiscal Year	FY 18/19	FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28	TOTAL
2.	Highlands Consulting Group LLC	-	-	$139,031	$87,847	-	-	-	-	-	-	$226,878
3.	Gartner	$10,000	$1,018,560	-	-	-	-	-	-	-	-	$1,028,560
4.	DTS (TAMS1)			$1,710,589	$938,695	$35,000	-	-	-	-	-	$2,684,284
5.	Rizing (TAMS2)	-	-	-	-	-	$4,094,118	$7,905,582	-	-	-	$11,999,700
6.	SI Vendor (TAMS3)	-	-	-	-	-	-	-	$2,000,000	$2,000,000	-	$4,000,000
7.	M&O (TAMS2)	-	-	-	-	-	-	-	$1,343,780	-	-	$1,343,780
8.	CDT	$76,440	$76,440	$101,374	$124,468	$146,328	$185,655	$211,536	$261,536	$211,536	$35,256	$1,430,589
9.	TMS (IV&V)	-	-	-	$241,280	$16,240	$174,220	$250,000	$250,000	$250,000	$41,667	$1,223,407
10.	**TOTAL VENDOR BUDGET**	**$86,440**	**$1,095,000**	**$1,950,994**	**$1,392,310**	**$197,568**	**$4,453,993**	**$8,367,118**	**$3,855,316**	**$2,461,536**	**$76,923**	**$23,937,198**

PRIMARY VENDOR HISTORY SPECIFIC TO THIS PROJECT

1.	**Primary Vendor**	Gartner
2.	**Contract Start Date**	June 30, 2019
3.	**Contract End Date (projected)**	December 31, 2020
4.	**Amount**	$1,028,560

5.	**Primary Vendor**	The Highlands Consulting Group, LLC.
6.	**Contract Start Date**	June 26, 2020
7.	**Contract End Date (projected)**	June 25, 2022
8.	**Amount**	$226,878

9.	**Primary Vendor**	Data Transfer Solutions (DTS), LLC.
10.	**Contract Start Date**	February 22, 2021
11.	**Contract End Date (projected)**	August 29, 2022
12.	**Amount**	$2,684,284

13.	**Primary Vendor**	Technology Management Solutions (TMS)
14.	**Contract Start Date**	June 9, 2021
15.	**Contract End Date (projected)**	June 8, 2024
16.	**Amount**	$1,223,407

17.	**Primary Vendor**	Rizing Geospatial, LLC.
18.	**Contract Start Date**	July 17, 2023
19.	**Contract End Date (projected)**	August 4, 2025
20.	**Amount**	$11,999,700.50

PRIMARY VENDOR CONTACTS

	Vendor	First Name	Last Name	Area Code	Phone #	E-mail
1.	Rizing LLC	Connie	Gurchiek	941	806-7976	Connie.Gurchiek@rizing.com
2	Rizing LLC	Anders	Nelson	339	933-2984	Anders.Nelson@rizing.com

2.6 Section F: Risk Assessment Information

Project #	2660-544
Doc Type	**SPR**

RISK ASSESSMENT

Has a Risk Management Plan been developed for this project?

☒ **Yes** ☐ **No**

General Comment(s)
The project has a formal Risk Management Plan which describes the process that is used to identify, analyze, track, and manage all project risks. The procurement, as detailed later, is split for TAMS2 and TAMS3 to help mitigate issues encountered in TAMS1 related to the scope of work requested from the TAMS1 System Integrator. Focusing on TAMS2 to establish the core data integration and functionality, allows the resulting analytics to be the focus of TAMS3.

3 Proposed Project Change

In accordance with the State Administrative Manual (SAM) Section 4819.36, the California Department of Transportation (Caltrans) is submitting this Special Project Report (SPR) to the California Department of Technology (CDT), outlining key updates to the Transportation Asset Management System (TAMS) project implementation and timeline.

3.1 Project Background/ Summary

Both State and Federal law have mandated that the Department implement a transportation asset management plan (TAMP) to guide selection of projects for the state highway operation and protection program (SHOPP). This TAMS project will provide the necessary tools and integrated data to efficiently meet State and Federal requirements.

The TAMS project consists of the development of a centralized data repository and tools system, called Transportation Asset Management System (TAMS) to meet the Strategic Goal to Strengthen Stewardship and Drive Efficiency, with outcomes that will improve asset condition, maximize the social equity of our investments, and improve performance of our resources. TAMS will replace the current Asset Management Tool (AMT) in addition to adding new, robust functionality and capabilities to maximize funding allocation for asset investment planning.

3.2 Project Status

The Project's inception was marked by the successful completion of the Project Approval Lifecycle (PAL) Stage 4 Project Readiness and Approval (S4PR&A) process in February 2021, followed by the System Integrator (SI) contract award, laying the groundwork for the TAMS project objectives.

As the project progressed, unforeseen challenges arose, and it became clear that changes were necessary to realize the project's objectives. These challenges prompted a thorough evaluation of the project's progress and delivery mechanisms, leading to a proactive move to amend and end the contract earlier than expected. The early ending of the contract was a strategic decision, enabling the project to reassess the approach and identify avenues for improvement. Despite the shift, the necessity for TAMS remains. The project collaborated closely with CDT STP to issue a new Request for Proposal (RFP) in December 2022 with a phased implementation to reduce risk. This proactive step resulted in the awarding of the contract to a new SI vendor in July 2023. This SPR captures this change and sets the stage for the continuation of the TAMS project.

3.3 Reason for Proposed Change

The change stems from the challenges requiring prompt and decisive actions for resolution. These challenges collectively contributed to the decision to end the contract and to propose substantial changes to the project's schedule, project cost, and the system development approach. The project responded to the TAMS1 challenges by adapting an execution strategy to reduce risk. Dividing the project in to two (2) distinct procurements, TAMS2 and TAMS3 is the key element of reducing this contract and execution risk. TAMS2 concentrates on delivering core end-user functionalities through a

Commercial Off-The-Shelf (COTS) solution. TAMS3 implements advanced analytics and modeling leveraging built-in features to improve cost-efficiency.

The key factors driving the proposed changes are:

A. Contract Amendment
B. Procurement Approach
C. Schedule Deviation
D. System Development Approach
E. Staffing Adjustments
F. Changes to Oversight Charges

These key factors are detailed below.

A. Contract Amendment

The initial phase of the project faced challenges that led to an early ending of the contract through a contract amendment. Because of this amendment, payment terms were adjusted to reflect the early conclusion of the contractual relationship. The TAMS1 contract amendment bought artifacts that could be utilized in TAMS2.

B. Procurement Approach

Recognizing the challenges posed by the TAMS1 System Integrator and to realign the project with its objectives and timeline, the project updated the procurement strategy to ensure the earlier program value and reduce risk. While the overall scope and requirements have not changed, one significant adjustment is the segmentation of the project scope between two (2) contracts identified as TAMS2 and TAM3. TAMS2 concentrates on delivering core functionality for data integration and repository with the implementation of a Commercial Off-The-Shelf (COTS) solution. TAMS3 builds upon the core functionality of TAMS2 to provide advanced analytics and modeling for advanced users. Substantial program value is attained with each implementation.

C. Schedule Deviation

The schedule change is necessitated by the transition to a new SI vendor, resulting in a re-assessment and reset of project timelines and a deviation from the PAL S4PR&A planned schedule. The shift in vendor partnership led to a reset of the project timeline and consideration of another procurement for TAMS3. The TAMS2 SI vendor, in collaboration with Caltrans, created a detailed project schedule outlining the deliverables, iterations, and resource allocation on which this SPR is based.

D. System Development Approach

The updated Financial Analysis Worksheet (FAW) includes the detailed TAMS2 projections based on the award to the TAMS2 SI vendor, Rizing. Changes reflected in the updated financials are due to the following system development approach characteristics:

- Waterfall for Initial Phases: The project will follow a Waterfall approach for all phases except during the build and development phase. This will allow for a structured planning process ensuring that all requirements are well-defined and understood before development begins.

- Iterative Approach: During the build and development phase, the project will embrace an iterative approach. This change will introduce regular checkpoints and demonstrations of functionality, providing opportunities for course correction and alignment with evolving understanding of the vendor products and Department of Transportation (DOT) data.

E. Staffing Adjustments

The updated FAW incorporates refined insights from the TAMS1 SI vendor regarding Department of Transportation resource requirements. While the project's core requirements remain consistent, this revision reflects a more accurate financial forecast based on the Department of Transportation resource requirements given the predominantly SaaS bid:

- Project Hosting Evolution and Data Refinement: The project's resource planning has progressed to include a reduction of on-premises systems and number of data sources. This reduction is reflected in the number of DOT IT staff required for implementation.
- Integrated Project Resource Management: The updated FAW provides a more refined approach to resource allocation. It considers the specific resource needs and workload variations expected in each phase of the project, rather than a flat annual average. Collaboration with the TAMS2 SI vendor has led to a refined project schedule that details DOT resource needs which is incorporated in the updated FAW.

F. Changes to Oversight Charges

As of August 2023, the California Department of Technology has increased oversight charges, which were unforeseen when the project was initiated. Additional augmented charges for additional Independent Verification & Validation (IV&V) time are increased due to the overall schedule increase. Although IV&V costs were paused during the interim from TAMS1 to the award of TAMS2, the overall duration is longer given the TAMS1, TAMS2, and TAMS3 overall schedule.

3.4 Proposed Project Change

The proposed changes are not only responsive to the challenges that arose during the early stages of the project but also reflect the project's commitment to overcoming these challenges and positioning the project for success. The following items outline the changes to the project:

A. Contract Amendment

The changes made to the TAMS1 SI vendor contract terms marked the completion of TAMS1. This amendment addressed the premature conclusion of the initial agreement, setting the stage for the redirection in TAMS2. Payment structures and contractual obligations have been recalibrated to seamlessly transition into the upcoming phases, ensuring the continued use of TAMS1 acquired resources where possible.

B. Procurement Strategy & New Procurement

- Procurement Strategy:

  Due to the challenges encounter in TAMS1 that resulted in an amendment, the project has undergone a strategic procurement change, informed by best practices, research, and insights gained from interviews with past bidders, aiming to focus on its distinct parts. By separating TAMS2 and TAM3, the project can make sure resources are optimally allocated to address the specific requirements of these different parts and deliver value to the DOT sooner.

  - TAMS2: TAMS2 will primarily handle the data integration and user-facing parts of the system, ensuring the immediate needs of the project's primary user groups across the Department are met. This approach allows for a more concentrated effort in delivering a robust solution that aligns with the project's core objectives.
  - TAMS3: TAMS3 tackles the more intricate modeling and analytics parts of the system. It is primarily intended for use by the TAM Office in Headquarters, with potential future expansion to super-users.

  Additionally, this decision draws on industry best practices for project management. It recognizes that by segmenting a complex project into distinct procurements, each with its unique goals and priorities, we can optimize resource allocation and streamline project delivery.

  Leveraging Best Practices:

  - Enhancing Quality and Accountability: This approach enhances quality and accountability. It enables the project to concentrate resources on the data integration and critical user-facing components in TAMS2. Simultaneously, it allows for in-depth modeling and analytics in TAMS3, serving the specialized needs of the TAMS Administrative staff. This division of labor helps prevent scope creep and facilitates clear ownership of project deliverables.
  - Flexibility for Out-of-the-Box Solutions: The consideration of out-of-the-box functionality from the new SI for TAMS2 reflects adaptability. It acknowledges that technology landscapes evolve, and vendors often introduce features that can meet project requirements without extensive customization. By remaining open to the possibilities, the project demonstrates a commitment to optimizing resource use and reducing project costs.

- New Procurement: With the ending of the TAMS1 contract, a new procurement was conducted for TAMS2 with CDT STP. This new procurement provided an opportunity to re-assess the project organization and work breakdown and the project was divided into two (2) procurements: TAMS2 and TAMS3. This separation allows for specialized focus on distinct project components.

C. Schedule

The transition to a new SI vendor required a new project timeline. The focus is on delivering project parts in sync with operational priorities. To accommodate these changes, the project timeline has been reset, and resource allocation reconsidered. This change ensures alignment with the capabilities and products of the TAMS2 SI vendor while also optimizing the resource allocation across the project's lifespan. Including both TAMS2 and TAMS3 in this schedule change is crucial, as it ensures a holistic approach to project delivery, accounting for interdependencies between the two parts and making sure they are both positioned for success and are each delivering business value.

D. New System Development Approach

The project is adopting a hybrid development methodology, combining the structured nature of the Waterfall model with the agility and adaptability of Agile practices. This approach will help ensure that the project has a solid foundation during the initial phases, while also affording the flexibility to iterate and refine as the project progresses, continuously aligning the development process.

E. Staffing Adjustments

Building on the need for clearer alignment in staffing, the project proposes a review and adjustment of resources. The FAW is updated, incorporating the latest data and insights gathered from the detailed project schedule and granular resource allocation methodology of TAMS2. The updated FAW provides a more accurate representation of staffing costs and alignment with TAMS2 requirements.

F. Cost

The financial blueprint of the project reflects the series of strategic shifts and procurement changes. The project has undergone a thorough reassessment of staffing needs, aiming for ideal alignment with the demands of each project phase and value delivery. The project achieves a reduction in staff costs due to better understanding of the resource requirements and SI vendor's capabilities and needs. In addition, the augmentation of oversight charges and more IV&V costs have been incorporated into the budget. The cost changes reflect the TAMS2 and future, TAMS3, financial landscape.

G. Risk Mitigation

Splitting the project into TAMS2 and TAMS3 is a strategic risk mitigation measure. It ensures that scope and value are delivered earlier by focusing the SI vendor more precisely. This approach aligns with the overarching project goal of achieving efficiency and cost-effectiveness through this risk mitigation.

3.4.1 Accessibility

No change from S4PR&A.

3.4.2 Impact of Proposed Change on the Project

Scope

The original scope of the project has not changed from the S4PR&A.

Cost

The proposed changes will increase the project costs, primarily due to the extension of the project to accommodate TAMS3, and the amendment of the original contract that led to a new procurement and a new SI vendor. The FAW has been updated to reflect the appropriate time and resources required for the completion of TAMS2 and TAMS3. Costs have also been added to the project oversight resources

and the appropriate resources for ongoing system maintenance for TAMS3. The new strategy has reduced the core project costs when you exclude the future operations costs.

The table below provides a FY comparison between the previously approved and planned financials.

TAMS PROJECT - EXECUTIVE SUMMARY COST		
Category	SPR FAW	S4PR&A FAW
	Amount	Amount
Planning Costs (One-Time)	$1,840,833	$4,601,075
Project Costs (One-Time)	$27,369,375	$21,575,434
Total Project Cost (One-Time)	$29,210,208	$26,176,509
Future Operations IT Staff & OE&E	$2,770,765	$2,101,284
Annual Fut. Ops. IT Costs (M&O)	$1,258,892	$1,947,986
TOTAL PROJECT COST	**$31,980,973**	**$28,277,793**

Schedule

The project schedule has been revised to include the addition of TAMS3 and is adjusted to accommodate the timeline extension due to the procurement and transition to a new SI vendor.

The table below provides a high-level comparison between the original TAMS1 project schedule and the proposed schedule for TAMS2 and TAMS3. A detailed project schedule is included as an attachment.

Transportation Asset Management System	Wed 7/26/23	Tue 7/18/28
TAMS 2	Wed 7/26/23	Mon 8/4/25
Phase 0 - Onboarding & Initiation	Wed 7/26/23	Wed 9/6/23
Phase 0 Deliverables Management	Wed 7/26/23	Mon 9/18/23
Phase 1- Planning	Wed 7/26/23	Thu 2/15/24
Phase 1 Deliverables Management	Tue 8/15/23	Tue 3/12/24
Phase 2 - Analysis & Design	Fri 10/13/23	Wed 6/5/24
Phase 2 Deliverables Management	Thu 9/21/23	Fri 6/7/24
Phase 3 - Build/Implementation (Iterative)	Wed 8/23/23	Tue 6/24/25
PHASE 4 - Transition to M&O / Closeout	Wed 5/21/25	Fri 8/1/25
Phase 4 Deliverables Management	Tue 1/28/25	Mon 8/4/25
TAMS 3	Tue 9/30/25	Mon 8/30/27
Phase 0 - Onboarding & Initiation	Tue 9/30/25	Mon 11/3/25
Phase 0 Deliverables Management	Tue 9/30/25	Fri 11/21/25
Phase 1- Planning	Fri 10/10/25	Fri 2/6/26
Phase 1 Deliverables Management	Wed 10/1/25	Wed 2/18/26
Phase 2 - Analysis & Design	Mon 2/2/26	Mon 7/27/26
Phase 2 Deliverables Management	Fri 1/30/26	Mon 8/10/26
Phase 3 - Build/Implementation (Iterative)	Wed 10/1/25	Fri 5/14/27
PHASE 4 - Transition to M&O / Closeout	Thu 4/8/27	Wed 8/25/27
Phase 4 Deliverables Management	Thu 4/1/27	Mon 8/30/27
PIER	Mon 8/16/27	Tue 7/18/28

3.4.3 Feasible Alternatives Considered

In the process of determining the most effective path forward for the project following TAMS1, several alternatives were considered. These alternatives were evaluated based on their potential impact on the project timeline, cost, quality, risk, and achieving the business objectives. Status quo, retaining the existing SI vendor, was not an option.

- Continuation of Single Contract Approach: The option of repeating the original procurement approach and scope of services was considered. However, given the challenges during the initial contract, it was determined that continuing with the same contracting approach posed substantial risk.

- Minimum Viable Product (selected alternative): Soliciting feedback from several external sources (post TAMS1 contract amendment), the determination was made to modify the approach to mitigate the risk triggered in TAMS1. After careful consideration, it was determined to split the procurement into two procurements with significant business value reached with each contract completion. TAMS2 will primarily handle the data integration and user-facing parts of the system, ensuring the immediate needs of the project's primary user groups across the Department is met. TAMS3 tackles the more intricate modeling and analytics parts of the system. It is primarily intended for use by the TAM Office in Headquarters, with potential future expansion to super-users.

3.5 Implementation Plan

The Project implementation plan for the overall project remains unchanged from the S4PR&A. The following implementation steps addressed the proposed changes that revolve around the amendment to the original contract, processing new procurements, revised schedules, and an enhanced system development approach. The key aspects are:

- Contract Amendment and Strategic Re-Evaluation
  - Finalize the TAMS1 contract amendment, ensuring all purchased artifacts are properly documented and ready for use in TAMS2.
  - Adjust payment terms and realign the project approach following the early conclusion of the initial contract.

  Status: The contract amendment of the TAMS1 was executed in August 2022. This officially concluded the relationship with the initial SI contractor. All project artifacts and deliverables from TAMS1 were handed over to the project team.

- Procurement for TAMS2 and TAMS3
  - Conduct a strategic re-evaluation of the project approach, considering the artifacts from the original contract.
  - Clearly define the project scopes for TAMS2 and TAMS3, ensuring all team members and stakeholders have a clear understanding of their respective focuses and deliverables.
  - Establish a clear procurement process for TAMS2 and TAMS3, ensuring a focused and specialized approach for different project components.
  - Initiate the procurement process for TAMS2, focusing on core functionalities and ensuring that RFP clearly defines the scope, objectives, and requirements.

  Status: The RFP for TAMS2 was released in December 2022 and a new contract was awarded in July 2023.

- Schedule Adjustments & Resources
  - Collaborate with the new SI vendor to assess current timelines, adjust schedules, and ensure alignment with project objectives.
  - Align the project schedule with the capabilities of the new SI vendor and reallocate resources as necessary.
  - Develop a detailed project schedule, outlining all tasks, deliverables, and milestones.
  - Ensure that resource allocation is aligned with the project's scope and timelines, avoiding over allocation, and ensuring efficient use of resources.
  - Engage in collaborative sessions with the project team and the new SI vendor to validate the scope and ensure alignment with project objectives.
  - Develop a contingency plan to address potential delays or disruptions in the project schedule

- Utilize granular resource allocation methodologies to provide a more accurate representation of staffing costs and requirements throughout the project lifecycle.
- Foster a collaborative environment to enhance understanding of requirements and resource needs.

Status: The updated TAMS2 project plan that accompany this SPR was updated by the SI vendor and provided to Caltrans on 10/24/2023.

- Enhanced System Development Approach
  - Implement a hybrid development approach, incorporating both Waterfall and Agile methodologies.
  - Follow a Waterfall approach for initial project phases, ensuring a structured planning process.
  - Transition to an agile/iterative approach during the development/build phases, ensuring flexibility and responsiveness to change.
  - Conduct training sessions, if necessary, to ensure that all project members are knowledgeable in the hybrid methodology and understand when and how to apply each component of the approach. Establish regular checkpoints and provide functionality demonstrations (when possible) to assess progress and make necessary adjustments.
- Cost Management
  - Collaborate with the SMEs to update the FAW and other financial documentation to reflect the changes.
  - Conduct a thorough review of the project's financial trajectory, considering all changes, adjustments, and new information.
  - Update FAW and documentation to reflect the revised project cost, ensuring accuracy and clarity.
  - Communicate budget adjustments and their implications to all stakeholders, ensuring transparency.
  - Establish a monitoring mechanism to track oversight charges and ensure they are accurately reflected.

Status: The updated cost management is in process.

- Monitoring and Evaluation
  - Establish regular checkpoints and reporting mechanisms to monitor the progress of the implementation plan, ensuring that all components are on track and any issues are promptly addressed.
  - Provide regular updates to stakeholders, and oversight agencies, ensuring transparency and accountability throughout the implementation process.
  - Encourage feedback from all project members and stakeholders. Use this input to make continuous improvements and adjustment to the implementation plan as needed.
  - Conduct post-implementation reviews to assess the effectiveness of the changes and identify areas for further improvement.

Status: The updated monitoring and evaluation is in process.

4 Updated Project Management Plan

The project recognizes that some project management (PM) plans must incorporate the TAMS2 SI vendor methodology. The project updated the PM plans that have established processes which the new SI vendor is simply expected to follow.

The project has updated the following PM Plans:

- Governance Plan
- Risk and Issues Management Plan
- Project Management Plan
- Document Management Plan
- Contract Management Plan
- Communications Management Plan
- Requirements Management Plan
- Schedule Management Plan

The project is in the process of completing the following Project Plans:

- Test Management Plan - Estimated Completion Date: 11/16/23
- Quality Management Plan - Estimated Completion Date: 12/7/23
- Change Management Plan - Estimated Completion Date: 12/22/23
- Organizational Change Management Plan - Estimated Completion Date: 1/16/24
- Training & Knowledge Transfer Plan - Estimated Completion Date: 2/12/2024

4.1 Project Manager Qualifications

Project Manager Level: 4

Experience: 5+ years working as a Project Manager or Project Director on large IT projects. Technical experience commensurate with the proposed technology.

Professional Knowledge: Strong working knowledge of the California Project Management Framework (CA-PMF), CA Budgeting, Procurement and Contracting processes; Department's methodology; and Software Development Life Cycle.

The Project Management Methodology used by Caltrans follows the (CA-PMF) guidelines as stipulated in Statewide Information Management Manual (SIMM), Section 17, and Project Management Institute's (PMI's) Project Management Body of Knowledge (PMBOK). The Project Manager(s) will ensure that Caltrans' project management policies, processes, documents, and best practices are followed. The integrated project schedule will be maintained in Microsoft Project and documentation will be uploaded to the project's SharePoint, accessible by all team members.

The vendor's key personnel will also provide project documentation as required by the contract. All

vendor deliverables will be subject to Caltrans' approval and will follow the guidelines as outlined in CA-PMF.

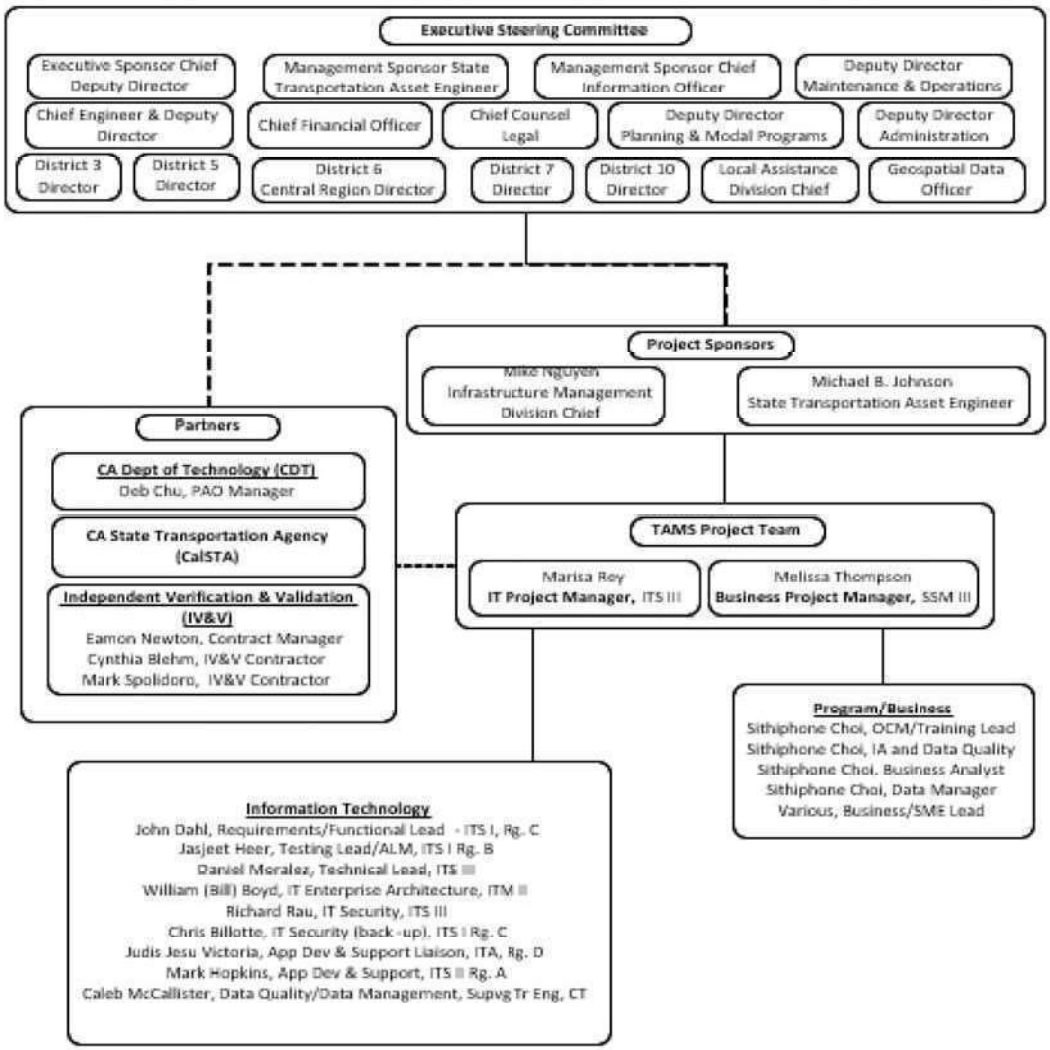
In the event of staff turnover, the project will make every effort to recruit a ready-qualified replacement that possesses the skills and knowledge necessary to lead the project through all phases of project management and the development and implementation lifecycles.

4.2 Project Management Methodology

The S4PR&A project approved methodology remains unchanged. The project will continue to follow the California Project Management Framework (CA-PMF). The CA-PMF follows best practices based on the State processes and the Project Management Body of Knowledge (PMBOK®).

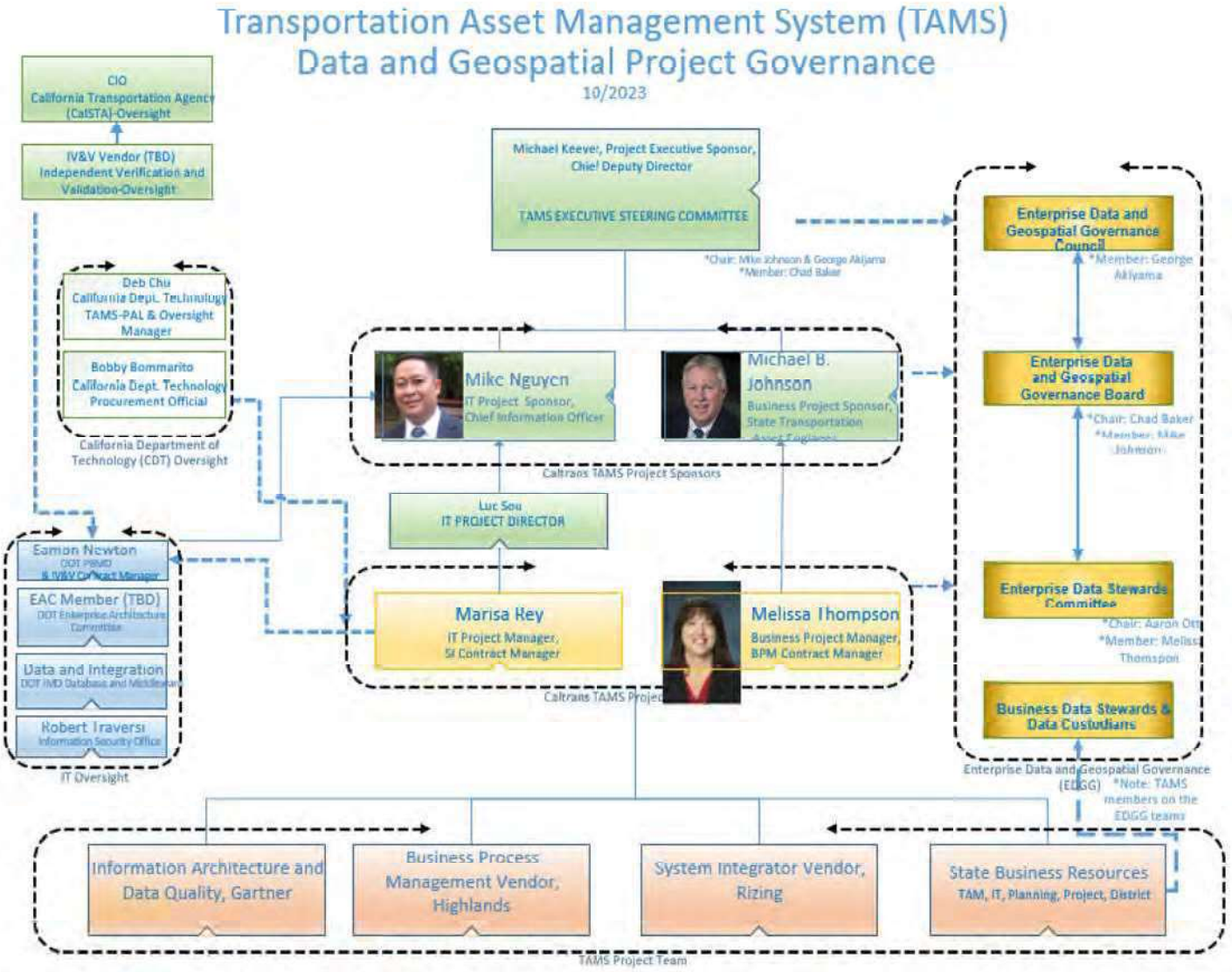
5 Project Organization

The following chart shows the project's current organizational structure including governance bodies.

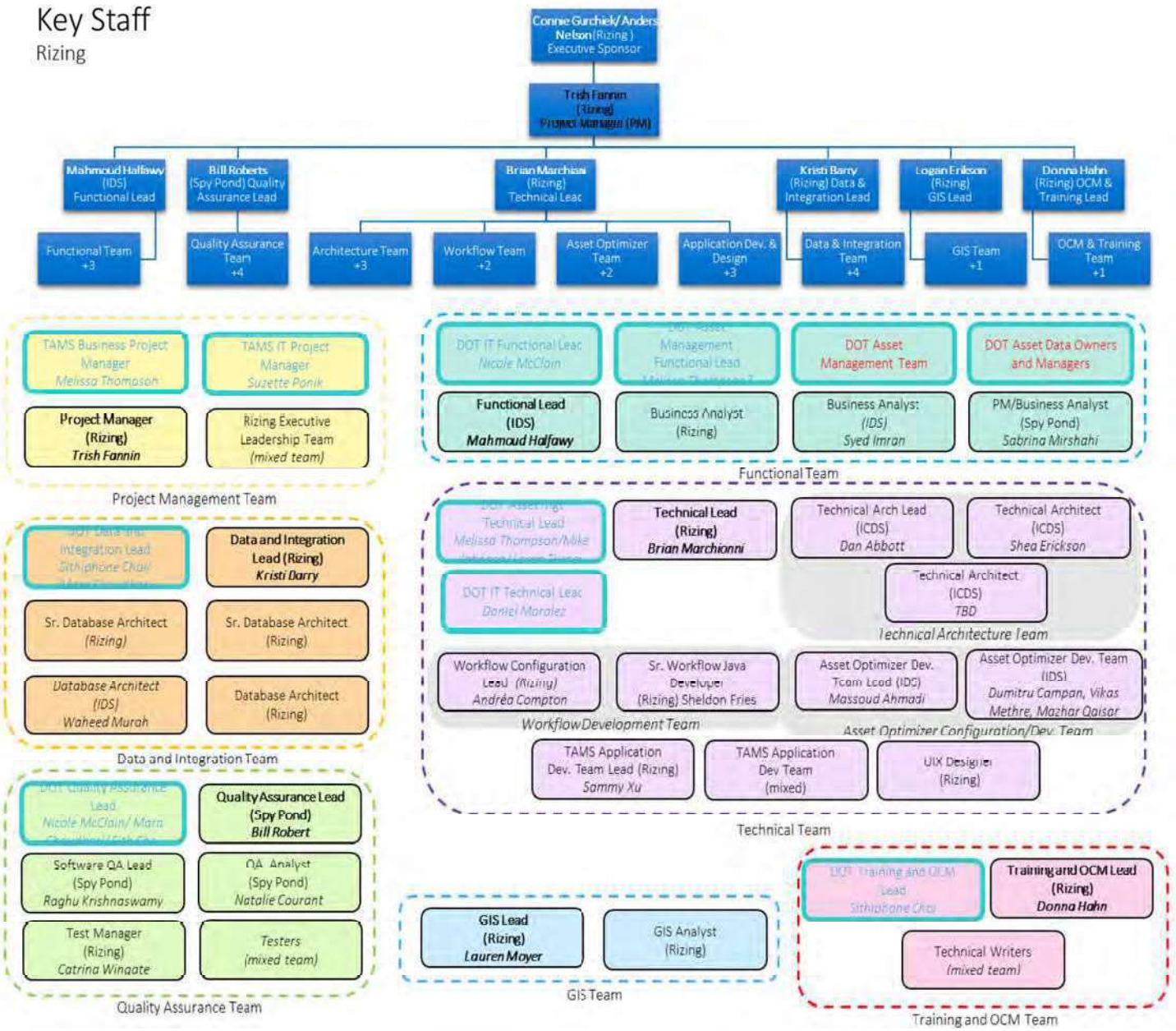


5.1 Project Team

The figure below shows the project team, including the number and classification of the team members.

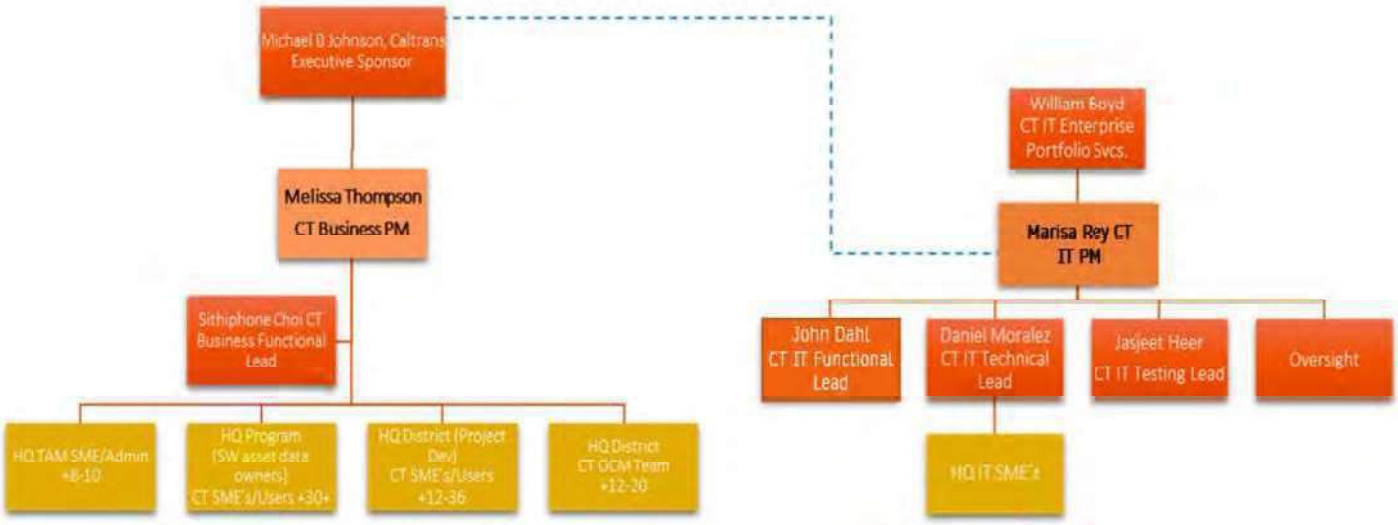


5.2 SI Vendor Project Team



5.3 Impacted Program Organization(s)

The following chart illustrates the impacted Program Organization(s) and the State entity.



5.4 Project Priorities

The project priorities have not changed since S4PR&A approval and are shown in Table 4-2 Trade-Off Matrix. This table shows the relative importance of each factor using priority of 1 (highest) to 4 (lowest) for each of the factors.

Table 4-2 Trade-Off Matrix

Factor	Schedule	Scope	Resources	Quality
Priority	1	2	4	3

5.5 Project Plan

5.5.1 Project Scope

Although the project has revised how the TAMS will be procured and developed, the overarching scope remains consistent with what was approved in the S4PR&A. Caltrans' vision for the project is still to establish and maintain an innovative statewide information technology application that will provide:

- A centralized data repository; and
- A system with functionality and tools to improve transportation asset management, project nomination, project prioritization, scoping, funding, workflow, and decision support.

The TAMS solution will replace the existing Asset Management Tool (AM Tool), which is an interactive and centralized collaborative software that records project information for Major State Highway

Operation and Protection Program (SHOPP), Minor SHOPP, Highway Maintenance (HM), and Broadband Middle Mile Network programs. The current AM Tool tracks project nominations, programming, award, and close out phases for cost and performance information that is manually keyed into the AM Tool.

The TAMS solution will integrate existing asset data from multiple source systems such as pavement, bridge, traffic management systems, and culverts into the TAMS solution, but will not replace any source asset systems. TAMS will also integrate spreadsheet-based assets into the TAMS solution.

The new solution will provide the information necessary for business units across Caltrans and both internal and external stakeholders to make more informed decisions to effectively allocate asset resources.

5.5.2 Project Assumptions

The major project assumptions have not changed since Stage Gate 4 project approval. New assumptions derived from the proposed changes have been added to the project.

Assumptions	Reason for Change
There will be a consistent access to required Caltrans and SI vendor resources throughout the duration of the project	This assumption builds upon the existing assumption that resources will be made available for the project. This change provides further clarity and specificity, With the introduction of a new SI vendor, this change underscores the need for continuous and consistent access to resources from both Caltrans and the SI vendor throughout the project's lifecycle
Stakeholder's expectations will be aligned with the proposed changes to the project.	Due to the proposed changes, there is a need to ensure that all stakeholder expectations are aligned with the proposed changes. This assumption is vital to maintain stakeholder support.
SI vendor, consultants, and State staff will perform their assignments related to the project in a competent and timely manner.	The proposed changes and the introduction of a new SI vendor necessitate a reassessment of roles and responsibilities to ensure the standard of work remains high, contributing to the overall success of the project.
Issues will be resolved, and risks mitigated on a timely basis.	The proposed changes to the project, including the segmentation of the project in two (2) procurements and the introduction of a new SI vendor, may present potential risks that must be managed proactively. By assuming that issues will be resolved, and risks mitigated promptly, the project is highlighting the commitment to maintaining project stability despite the changes.
CDT will continue to collaborate closely with Caltrans as needed.	Given the proposed changes, it is important to continue to maintain a strong collaborative relationship between CDT

Assumptions	Reason for Change
	and Caltrans. This ongoing collaboration is crucial to ensure that the project benefits from a consistent level of support.

5.5.3 Project Phasing

The project will mainly follow a waterfall phased approached, except for the build phase. The build phase will be developed in iterations so that the functionality can be developed, tested, and approved early and often. This will assist in ensuring the product meets business needs and the project can make course corrections sooner rather than later. A high-level overview of the planned activities during the various phases are shown below:

Project Phase	High Level Activities
Phase 0 – Onboarding and Initiation	Onboarding Confirm project resources Onboard vendor project staff Complete Security Training Provide access to Caltrans network Develop presentations for kick-off Conduct Project Kick-off Establish project team and Roles & Responsibilities Plan/Conduct regular Project Meetings (Ongoing) Review SOW and deliverables Review Project Plans Complete/Submit/Approve Phase 0 Deliverables
Phase 1 - Planning	Update/Develop Project Plans Plan/Conduct regular Project Meetings (Ongoing) Create/present status reports (Ongoing) Complete/Submit/Approve Phase 0 Deliverables Plan Workshop Develop Baseline Schedule Develop Roadmap Conduct Workshop Complete/Submit/Approve Phase 1 Deliverables
Phase 2 – Analysis and Design	Iterate on Requirements Stakeholders meetings (Ongoing) Refinement of requirements Gather Feedback (Ongoing) Gap Analysis Risk & Issues Assessment

	OCM & Training Planning Define Business Processes and Workflows Validation of Requirements (Ongoing) Update Project Plans (Ongoing) Conduct technical analysis Determine technical requirements ALM Octane Training Source to target mappings Sign-off on Requirements Identify Iterations Scope Prioritize & estimate efforts Data Dictionary Update Requirements Traceability Matrix UX Design/Wireframes/Mockups Data flow diagrams Iteration Planning Data Migration Design Source Systems and Data Database Schema Design Integration Design Database Metadata Content Management Design Environment Strategy/Specifications Infrastructure Design Physical & Logical Solution Diagrams Validation of Architecture & Environments Data Design Validation of Designs (Ongoing) Security Design QA Planning Create/Update Documents (Ongoing) Complete/Submit/Approve Phase 2 Deliverables
Phase 3 – Build/Implementation Iterative (Each Iteration produces an increment of the system. Testing is integrated into each iteration rather than separate. Specifications are progressively elaborated each iteration. Testing starts unit test focused and progresses	<u>During all Iterations 1 – 7</u> Develop Database Coding Iteration Scoping Update technical specifications Refine data models Develop Interfaces Configure Application Upload to version control

to integration testing regression testing occurs between iterations.)	Code reviews Bug tracking Develop Test cases (QA) Unit Testing (QA) Analyze Test Results (QA) Fix Defects (QA) Regression Testing (QA) Release Management Deploy to Dev/Test Environments Create test inputs Migrate data needed for Iteration Configuration Management Rollout of Software Releases Hosting Support User Support (Ongoing) Compliance Testing (QA) Error handling and logging (Ongoing) Risk and Issues Management (Ongoing) Stakeholder meetings (Ongoing) Project Status Reports (Ongoing) Create/update documents (Ongoing) OCM & Training Additional Activities During Iteration 1: Setup/configure DEV and TEST Environments Interfaces/Integration Install/ configure 3rd party software Implement Infrastructure Implement Security Controls Additional Activities During Iteration 4: Setup/configure UAT, Training and Production Environment. Install/ configure 3rd party software Implement Infrastructure Implement Security Controls Develop Test cases for Beta Testing Training and OCM Go/No-go Criteria/Decision Conduct Beta testing Collect feedback Fix defects

	Beta Release evaluation Beta Release Documentation Beta Release reporting Additional Activities During Iteration 7: Training Materials and Training Deployment and UAT Transition to Go-Live Planning Change Management Organization Readiness Approvals and Documentation Checklist Verification Go-No-Go Criteria/Decision Deployment and Go-Live Configuration Management Implementation Go-Live Report
Phase 4 – Transition to M&O/Closeout	Knowledge Transfer Sessions Training & OCM Transition Support Plans Post-Go Live Monitoring Optimization Assessment Operations, Maintenance and Support Service Desk Presentation Hosting Support Lessons Learned Contract Closure Activities Project Closeout & Final Documentation Release Notes PIER OCM Transition Readiness Assessment Report Final Training OCM Implementation Operations, Maintenance, & Support Guide and User and Admin Docs Service Desk Presentation Enterprise Architecture Presentation Post Go-Live Support Hosting Support

5.5.4 Project Roles and Responsibilities

The Project Management Roles and Responsibilities used by Caltrans follows the CA-PMF guidelines as stipulated in SIMM, Section 17.

Role	Responsibility
Steering Committee	• Provide executive intervention to overcome organizational roadblocks. • Key in driving the project goals and objectives to align with the Department's strategic direction. • Set strategy and direction so that the project's goals and objectives are met. • Oversee the establishment of planned governance processes and structures. • Ensure the project obtains the resources needed to proceed with project planning and execution. • Clarify priorities among schedule, cost, and project scope. • Ensure timely resolution of project issues when escalated to this level. • Review and approves the procurement strategy and related documents. • Review and approve funding documents. • Provide input, as needed, to ensure agreed-upon • outcomes are realized. • Provide direction and guidance in resolving strategic and major issues. • Ensure resources are made available to implement decisions made by the TAMS Steering Committee • Approve project artifacts and deliverables, as appropriate.
IT Project Sponsor	• Provide executive direction to Project Director, Project Managers, Business SMEs, and team. • Allocate resources to ensure project success. • Approve business outcomes and measurable objectives. • Ensure timely resolution of project issues. • Review and approve the Project Governance Plan and the Project Organizational Chart. • Review and approve funding documents. • Provide IT expertise for planning activities. • Provide input on project decisions related to technologies the project will employ. • Advocate for project funding and approval.

Business Project Sponsor	• Sets strategy and direction so that the project's goals and objectives are met. • Ultimate responsibility for overseeing project governance. • Ensure project funding is available and resources are made available to support objectives. • Establish and maintains planned communication with external stakeholders. • Review and approve the procurement strategy and related documents. • Resolve any escalation beyond the Business PM or IT PM control. • Provide final decision on issues, risks, and change requests if escalated to this level. • Approve baseline and changes to the project schedule, scope, cost, and quality when beyond the authority delegated to the IT PM.
Caltrans Business SMEs	• Assist with the definition of functional requirements. • Participate in project reviews and verify the accurate interpretation of requirements. • Participate in technical discussions in their specific area of technical expertise, as needed. • Review project documentation as needed and provide feedback to the project team. • Identify and escalate project issues to respective supervisors, and the Project Managers.
Business Project Manager	• Oversee the project's progress, ensure adherence to project plans PM for seamless execution. • Oversee overall project quality and deliverables • Facilitate the achievement of the project objectives and ensure adherence to project management plans. • Ensure the overall requirements management effort is being executed in accordance with the project plans and in alignment with business objectives. • Ensure requirements management activities are being performed in a timely manner. • Participate in the drafting and approval of all the project plans. • Provide updates and status reports to the Business Sponsor and stakeholders. • Ensure the SI Vendor delivers the project per the project plan to deliver the final product within the established time, scope, and budget.
IT Project Manager	• Develop the Project Charter with input from appropriate stakeholders.

	• Coordinate with all sponsoring organization stakeholders as the project takes shape. • Develop and maintains the Project Management Plan and sub-plans. Some sub-plans may be written by or in collaboration with the SI vendor and/or various SMEs such as procurement plan, and contract plan. • Establish and maintains communication with stakeholders. • Ensure the SI Vendor delivers the project per the project plan to deliver the final product within the established time, scope, and budget. • In the capacity of the Risk Manager, develop and maintain the Risk Management Plan. • Perform the activities as described in the Risk Management Plan. • Manage project issues following the methodology described in the Issue Management Plan. • Actively maintain the Risk Register and ensure all risks are properly managed through resolution. • Oversee the project lifecycle, ensuring the project stays on schedule, and within budget • Act as the main point of contact for the SI vendor and project team. • Conduct quality review of all project deliverables. • Responsible for the performance of the tasks described in the project plans. • Conduct weekly status meetings, risks and issues management meetings, and any required interim meetings. • Provide advance meeting agendas and subsequent meeting notes including action items and status. • Responsible for the implementation of the project plans. • Develop the weekly and monthly Project Status Reports (PSR) as well as other project management reports as needed.
Functional Lead/ Business Analyst (IT)	• Oversee requirements management. • Contribute to the generation of key project documents and ensure compliance with the project plans and Caltrans' requirements. • Ensure cross-team collaboration for requirements traceability. • Assist the PMs in the development of the Requirements Management Plan, Quality Management Plan, and Testing Management Plan. • Ensure the entire TAMS Project Team, and SI Vendor are following the project plans and ensure all project processes are being adhered to. • Assist the SI Vendor Quality Assurance Lead in validation and certification of requirements.

System Quality Management (SQM) Team	• Responsible for overseeing the project's quality control and quality assurance activities. • Support requirements and development management activities. • Validate requirements and support project progress. • Provide feedback in the development of project artifacts. • Provide input to the SI Vendor team to project decisions related to testing the project product. • Evaluate test plans, problem reporting and resolution process, including any developed by the SI Vendor. • Provide guidance regarding appropriate test measurements and metrics in the product.
Caltrans Technical Team (Infrastructure, Development, Information Security, and Privacy)	• Review and oversee the detailed requirements, technical solution, and implementation of the project. • Provide information to the Project Managers concerning technical design, requirements, and implementation problems. • Provide input related to schedule, scope, and technical risk. • Provide feedback on risk impact, probability, and mitigation steps. • Provide the SI Vendor with guidance on the required process of integrating IT systems to meet Caltrans' requirements. • Assess impact of proposed solutions on system maintenance and support. • Conduct system architecture evaluation and collaborate with the SI Vendor team to improve the architecture if needed. • Provide support in the evaluation of project constrains to find alternatives, alleviate risks as needed. • Provide the SI Vendor with details about any issues connected to the SI vendor proposed architecture. • Address issues related to the system requirements, design, and architecture as they arise. • Propose changes to the existing architecture until formal approval of the system architecture/solution design.
SI Vendor PM	• Ensure timely product/system delivery, ensure compliance with project processes, and identify issues to Caltrans Project Managers. • Conduct quality review of all SI Vendor project deliverables to ensure compliance with Caltrans and State IT standards and regulations. • Accountable for the overall execution of the project and delivery of products and services with required functionality and quality • Coordinate activities with the PMs including Caltrans resource identification, resource scheduling, and resource feedback Act as the main point of contact for the SI vendor staff and Caltrans.

	• Develop and maintains the project schedule in a weekly basis or as needed. • Perform risk mitigation activities as described in the Risk Management Plan. • Manage project issues following the methodology described in the Project Management Plan. • Responsible for the implementation of all approved project plans. • Actively maintain the Risk and issues register and ensure all risks and issues are properly managed through resolution. • Conduct weekly status meetings, risks and issues management meetings, and any required interim meetings. • Provide advance meeting agendas and subsequent meeting notes including action items and status. • Ensure SI vendor staff adheres to Caltrans processes and the project follows approved project plans. • Accountable for the formal submission of deliverables and status reports and manages the review and approval process for the SI Vendor. • Accountable and responsible for reporting project status at multiple levels including project, TAMS Steering Committee, Project Management Office, IT Governance (to include IT Executive Council and Enterprise Architecture Committee), and, as necessary oversight entities including IV&V, California Department of Technology, California State Transportation Agency, and the California Transportation Commission • Provide schedule risk and impact input related to project schedule, scope, budget, or SI vendor staff allocation or issues. • Establish and maintain communication with project team and stakeholders. • Lead the development of SI vendor deliverables. • Review SI Vendor deliverables and ensure compliance with Caltrans IT standards and regulations. • Participate in collaborative reviews and other meetings as needed by the project. • Ensure the project stays on track, on time, and on budget.
SI Vendor Functional Team	• Accountable for overall requirements management. • Accountable for business process management. • Responsible for requirements traceability from the Contract through testing and training completion. • As applicable, responsible for translating requirements to proposed implementation methodology (e.g., User Stories).

	• Responsible for resolving requirement ambiguity with Caltrans and Contractor and documenting change and initiating change control. • Responsible for resolving business process flow ambiguity with Caltrans and Contractor and documenting change and initiating change control. • Responsible for developing, documenting, and validating functional requirements and non-functional (technical) requirements. • Responsible for allocation of requirements to specific phases and releases. • Responsible for developing, documenting, and validating business process flows. • Responsible to identify requirements not in alignment with TAMS established goals, objectives, and targets. • Responsible for identifying and communicating functional alignment of requirements to software functional and configuration capabilities. • Responsible for identifying and communicating business process flow alignment of requirements to software functional and configuration capabilities.
SI Vendor Quality Assurance Team	• Responsible for validation and certification of requirements from the Contract through testing completion. • Responsible for requirements quality control definition, establishment, and validation throughout the TAMS project. • Responsible for the planning and execution of all testing, including the facilitation (defect logging and reporting) of user acceptance testing (or methodologically equivalent activity for accepting the system for production go-live). • Responsible for the creation of test scripts and scenarios fully traced to the validation of each TAMS functional and non-functional requirement. • Responsible for the validation of all identified defects no matter the resolution/mitigation including system training, business process training (OCM/BPM), data quality (integration or data migration), or data science. • Responsible for testing in support, and specific to, multiple TAMS roles including, but not limited to, TAMS Asset Managers (District and HQ), TAMS Administrators/Asset Performance Managers (Directors' Office of Asset Management), TAMS Project Managers, TAMS Planners, TAMS Programs (SB1, HM, SHOPP, etc.), TAMS dashboard consumers. • Responsible for collaborating with the TAMS project team to ensure business process validation required beyond TAMS system testing.
SI Vendor Testing Team	• Conduct requirements management and testing activities as needed.

	• Provide status reports and attend meetings. • Deploy and manage resources for testing. • Define the scope of testing within the context of each iteration/release / delivery. • Apply the appropriate test measurements and metrics in the product and the Testing Team. • Plan, deploy, and manage the testing effort for any given engagement. • Responsible for developing and maintaining the project Test Management Plan. • Responsible for overseeing the project's quality control and quality assurance activities
SI Vendor Technical Team	• Conduct requirements management, validate requirements with Caltrans, and support project progress. • Develop all detailed technical requirements, technical solution, and implementation of the project • Provide input related to schedule, scope, and technical risk. • Provide feedback on risk impact, probability, and mitigation steps. • Develop the process of integrating IT systems to ensure it meets the requirements of the Department. • Conduct system architecture evaluation and collaborates with Caltrans IT SMEs to improve the architecture if needed. • Evaluate project constrains to find alternatives, alleviate risks, and perform re-engineering if required. • Update SI Vendor PM about any issues connected to the development and implementation activities and provide the needed support. • Analyze the business impact that technical decisions may have on the business processes.
SI Vendor Data and Integration Team	• Accountable for the delivery of technology and processes for both integration and data availability in support of TAMS goals/objectives. • Responsible for collaborating with Project Managers, Data Scientist, Functional Lead and Technical Lead to ensure Caltrans requirements are met through the integration and data availability in support of the TAMS requirements. • Responsible for establishing and maintaining sustainable integration technologies and processes recognizing the significant system movement (upgrades and replacements) at Caltrans. • Responsible for the data migration and integration to meet requirements of TAMS including consulting for integration of both

	technologies and processes for existing Caltrans' systems, databases, and documents to the TAMS solutions. • Responsible for quality assurance technologies and processes to assist with assurance of appropriate data to meet TAMS requirements
SI Vendor Training and OCM Team	• Accountable for the training of the TAMS solution required for meeting, or exceeding, established goals and objectives. (User training in support of activities specifically required for attaining TAMS goals and objectives). • Responsible for the planning and execution of all TAMS functional and technical training. • Responsible for training in support, and specific to, multiple TAMS roles including, but not limited to, TAMS Asset Managers (District and HQ), TAMS Administrators/Asset Performance Managers (Directors' Office of Asset Management), TAMS Project Managers, TAMS Planners, TAMS Programs (SB1, HM, SHOPP, etc.), TAMS dashboard consumers. • Responsible for collaborating with the TAMS BPM Contractor to ensure business process training alignment beyond TAMS solution implementation training. • Responsible for the creation of all training material in support of super user AND end user training. • Responsible to ascertain the effectiveness super user training • Responsible to ascertain the effectiveness of end user functional training delivered. • Accountable for organizational change management related to the TAMS solution implementation phases including transformational, operational, and technical impacts. • Responsible to identify Stakeholders. • Responsible to assess stakeholder engagement and incorporate mitigation activities in OCM plan. • Responsible for the communications of the TAMS vision. • Responsible for the development of communication and organizational change management methodology, plans, and techniques. • Responsible for assessing TAMS solution impact on Caltrans' culture, organizational structure, processes, positions, roles, and responsibilities. • Responsible to assess change resistance based on TAMS solution impact. • Responsible to develop change resistance mitigation plans including communications, training, and recommendations (business process and user experience). • Responsible for OCM governance establishment and policy management.

California Department of Technology	• Ensure the Department specifies business and technical level requirements, develops the procurement documents, and assembles the solicitation package. • Ensure the Department selects vendor, awards the contract, updates the final budget, project plans and schedule. • Ensure the Department conducts procurement while continuing with project readiness tasks. • Evaluate the strength and health of the project throughout its duration by attending project meetings; review project plans, documents, reports, and processes; and collaborate with the project management team. • Identify and review project issues and risks and provide feedback on the mitigation strategies developed by the project management team. • Compare actual project status to the planning assumptions approved through the Project Approval documents. • Provides reports and assessments of the project's health and progress. • Review and provide feedback on project approval requests and project planning documents. • Escalate, track, and monitor project risks and issues.
CDT-Statewide Technology Procurements	• Approve projects when initiated. • Conduct IT procurements (when appropriate) • Approve IT contracts and related amendment. • Provide ongoing project support and oversight.
Independent Verification and Validation Consultant	• Conduct product and deliverables reviews throughout all the phases of the project. • Verify and validate that project and the SI Vendor products adhere to Caltrans, State, and industry standards. • Ensure that all deliverables meet defined requirements and/or specifications.

5.5.5 Project Schedule

The project will use Microsoft (MS) Project to track and manage the schedule. The attached, TAMS Project Schedule serves as the Master Schedule and represents project activities and progress of those activities.

5.6 Project Monitoring and Oversight

The project approach to tracking and reporting on the status of the project deliverables, project schedule, and project budget are unchanged since the S4PR&A. The project continues to use Independent Project Oversight Consultant (IPOC) services from CDT, and the project is also independently reviewed by an Independent Verification and Validation (IV&V) services consultant.

5.7 Project Quality

The project follows the Institute of Electrical and Electronic Engineers (IEEE) 1061-2004 for the methodology for establishing quality requirements and identifying, implementing, analyzing, and validating process and product software quality metrics. The project also follows PMBOK® and CA-PMM framework to govern all major processes related to quality management.

To measure success, the project has implemented several metrics to measure the quality of a product or process or measure the effectiveness or efficiency of a system product. Quality metrics provide for a common language to assess progress about quality and need to be objective to provide clarity to all stakeholders. The project will begin to implement performance metrics for quality assurance in the following areas:

- Schedule and progress;
- Conformance to requirements;
- Technology effectiveness; and
- Customer satisfaction.

5.8 Change Management

The TAMS Project change management processes remain unchanged from S4PR&A, and changes are governed by a change management process that is approved by the project's governance bodies.

5.9 Authorization Required

Authorization for this proposed change is only needed from California Department of Technology. There are no review or authorizations needed from Federal Agencies or State Legislature.

6 Updated Risk Management Plan

The project has a formal Risk Management Plan which describes the process that is used to identify, analyze, track, and manage all project risks. The project's complete risk and issue register is available via its SharePoint repository. It is accessible to stakeholders, project team, and others who may access the TAMS project repository such as the CDT IPOC team and the IV&V Services Consultants.

6.1 Risk Register

There are no current risks or issues that are high impact or critical in nature.

7 Updated Financial Analysis Worksheets (FAWs)

See Appendix A for the FAWs approved in the S4PR&A, and Appendix B for the revised FAWs for the proposed changes in this SPR.

APPENDIX A

EXECUTIVE COST SUMMARY			
Project Name:	**Transportation Asset Management System (TAMS)**		
Department Name:	**California Departmen of Transportation (CalTrans)**		Stage 4/ Version 4.4
Project Number:	**2660-544**	**Date:**	12/9/2020
PROJECT COSTS			
Planning Costs (One-Time)		$	4,601,075
Project Costs (One-Time)		$	21,575,434
Future Operations IT Staff & OE&E Costs (Continuing)		$	2,101,284
	TOTAL PROJECT COSTS:	**$**	**28,277,793**
Annual Fut. Ops. IT Costs (M&O):		$	1,947,986
			PROJECT
Project Costs (One-Time)			
Staff (Salaries & Benefits)		$	6,216,471
Staff OE&E Rollup			
Consulting & Prof. Services: Interdepartmental		**$**	**1,558,830**
	CDT-IPO Manager (Oversight)	$	707,070
	CDT-SPD	$	393,120
	CDT-PAL Manager	$	458,640
Consulting & Prof. Services: External		**$**	**10,401,200**
	Procurement 1-Enterprise Architecture and Data Quality	$	1,266,500
	Procurement 2-Visualization & Requirements development	$	172,400
	Procurement 3-Business Process Management	$	750,000
	Procurement 4-System Integrator (SI) & Solutions Vendor	$	15,462,308
	Procurement 5-IV&V	$	750,000
	Procurement 6-Maintenance and Operations	$	-
		$	-
Misc. OE&E Rollup (Departmental Services; Central Administrative Services; Office Equipment; Other; Unclassified/Special Adjustment; Local Assistance)		**$**	-
	Total Project Costs (One-Time):	**$**	**26,176,509**
Future Ops. IT Staff & OE&E Costs (Continuing)			
Staff (Salaries & Benefits)		$	370,715
Staff OE&E Rollup			
Consulting & Prof. Services: External		**$**	**1,730,569**
	Procurement 2-Visualization & Requirements development	$	45,000
	Procurement 6-Maintenance and Operations (Hosting & HW/SW)	$	1,685,569
Misc. OE&E Rollup (Departmental Services; Central Administrative Services; Office Equipment; Other; Unclassified/Special Adjustment; Local Assistance)			
	Total Future Ops. IT Staff & OE&E (Continuing):	**$**	**2,101,284**

APPENDIX B

EXECUTIVE COST SUMMARY

Project Name:	**Transportation Asset Management System (TAMS)**		
Department Name:	**California Department of Transportation (Caltrans)**		
Project Number:	**2660-544**	**Date:**	10/30/2023
PROJECT COSTS			
Planning Costs (One-Time)		$	1,840,833
Project Costs (One-Time)		$	27,369,375
Future Operations IT Staff & OE&E Costs (Continuing)		$	2,770,765
	TOTAL PROJECT COSTS:	**$**	**31,980,973**
Annual Fut. Ops. IT Costs (M&O):		$	1,258,892

		PROJECT BUDGET
Project Costs (One-Time)		
Staff (Salaries & Benefits)	$	5,273,010
Staff OE&E Rollup		
Consulting & Prof. Services: Interdepartmental	**$**	**1,430,589**
CDT - PAL Mgr: $147/hr $25,480/Mo $305,760/Annual	$	243,334
CDT - STP and/or Consulting: $126/hr $21,840/Mo $262,080/Annual	$	281,736
CDT/PAO Mgr (Oversight): 1/2 Engagement $11,752 from 11/1/23 - 4/30/24. 3/4	$	846,144
CDT/STP: 1.25% Procurement/Amendment Amt. Effective 8/1/23	$	59,375
Consulting & Prof. Services: External	**$**	**22,506,609**
Procurement 1-Enterprise Architecture and Data Quality (Gardner)	$	1,028,560
Procurement 2-Business Process Management (Highlands)	$	226,878
Procurement 3-System Integrator (SI) & Solutions Vendor (TAMS1) (DTS)	$	2,684,284
Procurement 4-IV&V (TMS)	$	1,223,407
TAMS 2 - Procurement 5 - System Integrator (Rizing)	$	11,999,700
TAMS 3 - Procurement 6 - Analytics	$	4,000,000
TAMS 2 - Procurement 7 - Maintenance and Operations	$	1,343,780
	$	-
Misc. OE&E Rollup (Departmental Services; Central Administrative Services; Office Equipment; Other; Unclassified/Special Adjustment; Local Assistance)	**$**	-
Total Project Costs (One-Time):	**$**	**29,210,208**
Future Ops. IT Staff & OE&E Costs (Continuing)		
Staff (Salaries & Benefits)	$	379,400
Staff OE&E Rollup		
Consulting & Prof. Services: Interdepartmental		
	$	-
Consulting & Prof. Services: External	**$**	**2,391,365**
TAMS 2 - Procurement 7 - Maintenance and Operations	$	1,344,228
TAMS 2 & 3 - Maintenance & Operations	$	1,047,137
	$	-
Misc. OE&E Rollup (Departmental Services; Central Administrative Services; Office Equipment; Other; Unclassified/Special Adjustment; Local Assistance)		
Total Future Ops. IT Staff & OE&E (Continuing):	**$**	**2,770,765**

EXECUTIVE COST SUMMARY

Project Name:	**Transportation Asset Management System (TAMS)**		
Department Name:	**California Department of Transportation (Caltrans)**		
Project Number:	**2660-544**	**Date:**	10/30/2023

PROJECT COSTS		
Planning Costs (One-Time)	$	1,840,833
Project Costs (One-Time)	$	27,369,375
Future Operations IT Staff & OE&E Costs (Continuing)	$	2,770,765
TOTAL PROJECT COSTS:	**$**	**31,980,973**
Annual Fut. Ops. IT Costs (M&O):	$	1,258,892

	PROJECT BUDGET	
Project Costs (One-Time)		
Staff (Salaries & Benefits)	$	5,273,010
Staff OE&E Rollup		
Consulting & Prof. Services: Interdepartmental	**$**	**1,430,589**
CDT - PAL Mgr: $147/hr $25,480/Mo $305,760/Annual	$	243,334
CDT - STP and/or Consulting: $126/hr $21,840/Mo $262,080/Annual	$	281,736
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Procurement 4-IV&V (TMS)	$	1,223,407
TAMS 2 - Procurement 5 - System Integrator (Rizing)	$	11,999,700
TAMS 3 - Procurement 6 - Analytics	$	4,000,000
TAMS 2 - Procurement 7 - Maintenance and Operations	$	1,343,780
	$	-
Misc. OE&E Rollup (Departmental Services; Central Administrative Services; Office Equipment; Other; Unclassified/Special Adjustment; Local Assistance)	**$**	**-**
Total Project Costs (One-Time):	**$**	**29,210,208**
Future Ops. IT Staff & OE&E Costs (Continuing)		
Staff (Salaries & Benefits)	$	379,400
Staff OE&E Rollup		
Consulting & Prof. Services: Interdepartmental		
	$	-
Consulting & Prof. Services: External	**$**	**2,391,365**
TAMS 2 - Procurement 7 - Maintenance and Operations	$	1,344,228
TAMS 2 & 3 - Maintenance & Operations	$	1,047,137
	$	-
Misc. OE&E Rollup (Departmental Services; Central Administrative Services; Office Equipment; Other; Unclassified/Special Adjustment; Local Assistance)		
Total Future Ops. IT Staff & OE&E (Continuing):	**$**	**2,770,765**

Urgent: DOTS_2023010424_ Approval of the Special Project Report (SPR) for the Transportation Asset Management (TAMS) Project

Final Audit Report 2023-12-05

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