

Multimodal for All Travelers (MAT) Standards PMP v4.0

Project Management Plan (PMP) for Multimodal for All Travelers Standards Support Project

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Multimodal for All Travelers Standards Support (MAT-2)

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CHANGE HISTORY

Version	DATE	EDIT	NOTE
Draft v0.01	11/09/2023	Okunieff	Initial Draft for this Project Management Plan (PMP) v0.01.
Draft 1.0	12/1/2023	Benison	Review and QC
Draft 2.0	6/13/2034	Okunieff + Abounassif	Incorporate scope change
Draft 3.0	3/14/2025	Okunieff + Ahmed	Update scope and schedule based on schedule break
Draft 4.0	12/11/2025	Narla + Nimmagadda + Okunieff + Schweiger	Update following phase 2 extension

Table of Contents

1	INTRODUCTION	5
1.1	Purpose of the Project Management Plan	5
1.2	Background of Project	5
2	SCOPE MANAGEMENT PLAN	7
2.1	Purpose of the Scope Management Plan	7
2.2	Scope Statement	7
2.2.1	<i>Project Scope Description</i>	<i>7</i>
2.3	Task 1 Project Management [PWS Task 1]	7
2.3.1	<i>Task 1.1 Kick-off Meeting</i>	<i>7</i>
2.3.2	<i>Task 1.2 Project Management Plan (PMP)</i>	<i>7</i>
2.4	Task 2 Multimodal for All Travelers Standards Coordination [PWS Task 2]	9
2.5	Task 3 MAT Systems Engineering Document Development [PWS Task3]	9
2.6	Task 4 General Analysis [PWS Task 4]	12
2.7	Project Acceptance Criteria	12
2.8	Project Exclusions	13
2.9	Project Constraints	13
2.10	Project Assumptions	13
2.11	Scope Verification	13
2.12	Scope Control	13
3	COMMUNICATIONS PLAN	14
3.1	Purpose of the Communications Plan	14
3.2	Stakeholder Points of Contact	14
3.3	Project Team and Committee Communications	15
3.4	Communications with ITS JPO	15
4	DELIVERABLES AND MILESTONES	15
4.1	Monthly Progress Reports	15
4.2	Deliverable Summary	16
4.3	Project Schedule	17
5	QUALITY MANAGEMENT PLAN	20
5.1	Purpose of the Quality Management Plan	20
5.2	Quality Planning	20
5.3	Quality Control	20
5.4	Quality Assurance	20
6	HUMAN RESOURCES MANAGEMENT PLAN	21
6.1	Purpose of the Human Resources Management Plan	21
6.2	Roles, Responsibilities and Reporting	21
6.3	Risk Management Plan	22
	APPENDIX A – REFERENCES	25
	APPENDIX B – GLOSSARY, ACRONYMS AND ABBREVIATIONS	26

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1 INTRODUCTION

1.1 Purpose of the Project Management Plan

This document defines a Project Management Plan (PMP) for the Multimodal for All Travel Standards Support Project under the United States Department of Transportation (USDOT) Contract Number FHWA#693JJ321D000005, Task Order # 693JJ323F00344N. This PMP identifies the activities for the Multimodal for All Travelers (MAT) Standards Support Project and establishes a common understanding for the management of the project for:

- a) The USDOT Intelligent Transportation Systems (ITS) Joint Program Office (JPO) who is sponsoring the work.
- b) The partner Standard Development Organizations (SDOs) who are representing stakeholders for this project.
- c) The sub-consultant team contracted to perform the work; and
- d) The mobility stakeholder community, which includes transport service providers (e.g., public transit, paratransit), mobility service providers (e.g., bike sharing, scooter-sharing, carsharing, and ride sourcing), and mobility service customers representative who may use the deliverables from this PMP.

This PMP is based on the Performance Work Statement (PWS) for the 693JJ323F00344N project provided by the USDOT. The PMP includes plans for scope management; communications; deliverables and milestones; quality management; human resource management; and a Systems Engineering Management Plan (SEMP). Portions of this PMP may be updated during the course of the project if the Project Management Team or the USDOT determines that modification would significantly facilitate the project management functions. The PMP is not intended to be a progress tracking tool or to be modified for minor changes in schedule once the project has started.

1.2 Background of Project

USDOT and ITE and their standards development partners have worked on ITS standards since the inception of the ITS Standards Program over 20 years ago. In recent years traditional ITS technologies have started to integrate with multimodal travel and support for all travelers using any mode. Working with the multimodal community to survey existing standards and how they can support/augment ITS implementations is a necessary step. In recent years traditional ITS technologies have been a key enabler supporting the integration of multimodal and all access forms of transportation with more established forms of public-sector transportation. MAT use cases and systems tend to incorporate a wide range of transportation options – vehicles, walking, bicycling, e-scooters, assistive devices, and other, which tend to utilize the roadways and public ways (i.e., sidewalks) but in a manner that could expose travelers to greater vulnerabilities. Additionally, ensuring that the security needs of travelers are addressed in both standards and ITS deployments. USDOT previously had a MAT Standards project that produced a MAT Standards and Cybersecurity Coordination Plan which this project is expected to build on. This project is to define and implement critical activities to better address ongoing convergence of ITS technologies with multimodal and All Travelers and the future integration of new innovative forms of MAT.

The objective of this project is to continue the work, started under the MAT Standards project, to address, plan for and execute development of the near-term necessary standards with a focus on ensuring appropriate interoperability to make MAT experience seamless and secure for users. Further, correct interpretation and adoption includes describing a common understanding of the underlying governance processes that may be by Federal, State, regional, or local in nature and are likely multi-disciplinary.

Additionally, the MAT Standards and Cybersecurity Coordination Plan (SCP) recommended the

establishment of a standards coordination committee (SCC) to address standards including the inclusion of traditional Standards Development Organizations (SDOs) as well as advocacy groups that may be working on broader specifications and Community-Based specification Development Organizations (CBDOS).

The SCP also recommended the development of Systems Engineering documents to support developers of the standards. These include the development of Concept of Operations (ConOps) that support the standards / specifications development efforts as is consistent with other coordinated standards efforts like Connected Intersections and Connected Vehicles.

Finally, the Phase 1 Mobility on Demand (MOD) Operational Readiness Framework (ORF) report highlighted assessment methods for technical, integration, institutional and cybersecurity / privacy. Implementation or best practice guides will support organizations in using them particularly as cybersecurity and privacy are critical to many of these systems. These operational readiness levels and checklists overlap with several ongoing efforts by the USDOT. Coordination with those groups has the opportunity to provide more coherent and consistent strategies for assessing multimodal and interoperability transportation systems.

2 SCOPE MANAGEMENT PLAN

2.1 Purpose of the Scope Management Plan

This Scope Management Plan establishes the scope management approach and processes as they pertain to scope description, verification, and control measures. It establishes the processes which ensure that the MAT Standards Support Project includes all of the tasks required to complete the work identified while excluding all work that is unnecessary. Each of the major project tasks are listed below with the objectives, approach and deliverables identified. Tasks specifically identified in the PWS are identified in brackets with the PWS task number (i.e., [PWS Task #]). Specific deliverables identified in the PWS are identified in brackets as “[PWS Deliverable]”

2.2 Scope Statement

2.2.1 Project Scope Description

The subsections below describe the project activities listed in the Gantt Charts in Section 4.3 Project Schedule. The development of the deliverable documents is carried out using a cyclical draft-review-update process with a MAT Standards Support Project Committee of qualified reviewers that is not a part of the sub-consultant team.

2.3 Task 1 Project Management [PWS Task 1]

The purpose of this task is to establish the management processes for the MAT Standards Support. The project management activities include the development of a PMP. The following stipulations apply:

- The approved version of the PMP and project schedule only with pre-approval from the Contracting Officer's Representative (COR) and any modified version will be delivered to the COR within 10 working days after receiving COR approval.
- Once the draft PMP and project schedule are ready for review, a meeting with the USDOT and its representatives will be scheduled to review each document and ensure that all parties are in agreement on the overall approach to project execution.
- The revised version of each contract deliverable (including the detailed project schedule) will be under document configuration control with version numbers assigned to each document. All documents submitted to and approved by the USDOT will be assigned a unique version number.
- An Authorization to Proceed (ATP) is pursuant to USDOT's approval of a revised PMP and schedule.

2.3.1 Task 1.1 Kick-off Meeting

Objectives

- Ensure all parties have a clear understanding of the requirements of this PWS and what the USDOT's expectations are.

Approach

- The kick-off meeting will take place within 30 working days of the ATP unless otherwise agreed to by the Government.

Deliverables

- Agenda and Meeting Notes

2.3.2 Task 1.2 Project Management Plan (PMP)

Objectives

- Develop a PMP that describes the overall approach to managing the MAT Standards Support Project and coordinating the work performed by all subcontractors.

Approach

- The PMP contains a **Communications Plan** that describes how ITE will coordinate their efforts with the USDOT, particularly the Contracting Officer's Representative (COR) and the Contracting Officer (CO).
- The PMP includes a **Human Resources Management Plan** that describes the overall structure of the Project Development Team including how to leverage key experience and capabilities, explain the roles and responsibilities of all key individuals, and describe the reporting relationships among the team. The Human Resources Management Plan will contain team resumes, representing domain experts and a qualified technical editor. The Human Resources Management Plan, including team members, is subject to USDOT approval as part of the overall approval of the PMP.
- The PMP includes a **Quality Management Plan** to ensure that the documents submitted as deliverables will:
 - contain suitable material for the target audience
 - be organized in presentation
 - contain proper word use and English diction
 - contain detailed illustrations
 - be comprehensive, complete, and correct; and
 - be edited for grammatical and editorial errors.

The Quality Management section is subject to USDOT approval as part of the overall approval of the PMP.

- The PMP includes the **Risk Management Plan** that identifies risks that might affect the project and the characteristics of the risk. Types of risks considered include risks potentially impacting: technical, project schedule, scope, and costs. A Risk Management Log will be maintained on an on-going basis during the entire period of performance to track risks, mitigation plans and status. Each risk will have a unique number, probability of occurrence and impact of occurrence rating.
- The PMP includes a detailed **project schedule** in Microsoft Project 2010 format that contains all of the planned tasks and milestones for the project. The project schedule will address all project management activities. The project schedule will reflect a work breakdown structure (WBS) comprised of at least three levels. An updated project schedule reflecting actual work performed for the previous month will be included with every monthly report. The monthly updated project schedule will reflect both the baselined task start and end dates and the actual start and end dates for each task. The project schedule will be provided as both a Microsoft Project Document (MPP) and a Portable Document Format (PDF).

The draft PMP will be presented at the kick-off meeting.

The approved version of the PMP and project schedule will only be revised with pre-approval from the COR. Any modified version of the project schedule will be delivered to the COR within 10 working days after receiving COR approval.

Once the draft PMP and project schedule are ready for review, ITE will schedule the kick-off meeting with USDOT and its representatives, AASHTO, NEMA and subcontracted SMEs to review each document and ensure that all parties are in agreement on the overall approach to project execution.

ITE will put the revised version of each contract deliverable (including the project schedule) under document configuration control, with version numbers assigned to each document. All documents submitted to, and approved by, the USDOT will be assigned a unique version number.

ITE will develop a monthly progress report that reports on project activities and financial progress. In addition, ITE will schedule and host, in coordination with the USDOT, a monthly task order

coordinating meeting to report on task progress.

Deliverables

- Draft PMP [PWS Deliverable]
- Final PMP [PWS Deliverable]
- Monthly Progress Reports [PWS Deliverable]
- Monthly Task Order Coordination Meetings [PWS Deliverable]

2.4 Task 2 Multimodal for All Travelers Standards Coordination [PWS Task 2]

The purpose of this task is to set up a Standards Coordination Committee (SCC) whose purpose is to set up a coordination process to govern and facilitate community participation in developing MAT standards. The effort includes two tasks to set up and support the facilitation of the SCC (Task 2.1) and ballot these documents with the SCC (Task 2.2).

Objectives

- Support the SCC and RSD subcommittees in fulfilling their responsibilities including reviewing and balloting System Engineering documents and conducting committee business.

Task Descriptions

- **Task 2.1: Facilitate SCC / RSD Subcommittees.** ITE will organize, coordinate, and facilitate meetings for the SCC and RSD subcommittees. This includes working with co-chairs to develop draft agendas, presentation, develop and distribute invitations and meeting materials, prepare and conduct polls and interactive activities, and publicizing the meetings. Following meetings, the ITE will review the minutes and action items with the co-chairs and publish the minutes.
- **Task 2.2: Prepare to ballot and publish SE documents.** ITE will prepare subcommittee approved Systems Engineering materials for submission to SCC ballot. This includes collecting and aggregating comments, completing the boiler plate language and review process, and managing the SE documents through the balloting process.

Deliverables

- Meeting Agenda and Materials
- Meeting Notes and Action Items
- Ballot Ready RSD Documents (Committee Approved documents)
- Publication Ready Documents (Notice of Intent)

2.5 Task 3 MAT Systems Engineering Document Development [PWS Task3]

Task 3 is composed of ITE developing System Engineering document for the relevant subcommittees. In this phase, the Reservations/Schedule/Dispatch (RSD) subcommittee requires a full set of SE documents including Needs Assessment, Concept of Operations (ConOps), System Requirements (SysR), and System Design (SDD). These will be developed sequentially, but balloted at the same time to ensure consistency and traceability throughout the process.

Objectives

- The objective of this task is to develop the systems engineering documents using a robust system engineering process that support the RSD standards. The documents include elements from reservations, scheduling, and dispatch for single and multiple organizations as well as cybersecurity and physical security considerations.

Approach

The system engineering processes will be guided by the following standardized processes:

- Institute of Electrical and Electronics Engineers (IEEE) 1362-1998 – IEEE Guide for Information

Technology – System Definition – Concept of Operations (ConOps) document.

- IEEE 1016-2009 - IEEE Standard for Information Technology--Systems Design--Software Design Descriptions.
- IEEE Standard 1012-2016 Standard for System, Software, and Hardware Verification and Validation.
- IEEE 1028-2008 - IEEE Standard for Software Reviews and Audits.
- IEEE/ISO/IEC 42010-2011 - ISO/IEC/IEEE Systems and software engineering -- Architecture description
- ISO/IEC/IEEE 15288:2015 Systems and software engineering — System life cycle processes.
- ISO/IEC/IEEE 29119™ Software and systems engineering - Software testing – series.
- INCOSE Systems Engineering Handbook, 4th Edition (<https://www.incose.org/products-and-publications/se-handbook>).
- Guide to the Systems Engineering Body of Knowledge (SEBoK) ([https://www.sebokwiki.org/wiki/Guide_to_the_Systems_Engineering_Body_of_Knowledge_\(SEBoK\)](https://www.sebokwiki.org/wiki/Guide_to_the_Systems_Engineering_Body_of_Knowledge_(SEBoK))).

Task Descriptions

- Task 3.1: Needs Assessment. This subtask includes identifying technical, operational, security, privacy, and organizational needs necessary by key stakeholders and users of the system. The task will evaluate current practices, stakeholder priorities, and gaps that provide user-centered and owner/operator-centered needs required to operate and coordinate services for paratransit and demand responsive transportation. Task 3.1 will include the following activities:
 - Draft User Needs Assessments
 - Disseminate User Needs draft to RSD co-chairs
 - Collect and incorporate comments and feedback per RSD co-chairs; this activity may require more than one review process
 - Disseminate Final User Needs Assessment

Deliverables:

- Draft User Needs Assessment
- Final User Needs Assessment
- Task 3.2: Concept of Operations. This task will focus on describing needs, actors, context, information flows and use cases of the RSD system as described by this ConOps. The document will also identify existing specifications and gaps where standards are needed to be consistent and complete. Task 3.2 will include the following activities:
 - Draft ConOps and ConOps walkthrough documents
 - Review Draft ConOps with RSD co-chairs and incorporate their feedback
 - Disseminate Draft ConOps to RSD SC at least 2 week in advance to the Walkthrough meeting; collect any comments submitted prior to the walkthrough and incorporate these into the walk through document
 - Hold ConOps Walkthrough, Activities include take notes on comments and changes, and publish these within a week of the walkthrough
 - Incorporate comments in red-lined ConOps and comment resolution into a Comment-Resolution matrix (CRM)
 - Review changes with RSD co-chairs prior to release notes and CRM
 - Disseminate Final Draft ConOps to RSD members per RSD co-chairs
 - Update Final Draft ConOps incorporating additional comments

Deliverables:

- Draft ConOps
- ConOps Walkthrough Document
- ConOps Walkthrough Notes

- Comment Resolution Matrix
- Final Draft ConOps
- Task 3.3: System Requirements (SysR). This task will define the functional, security (cybersecurity and physical security), privacy, data, and other technical requirements needed to describe the RSD standard. Requirements will be traced to the functional elements, needs, and information flows described in the RSD per INCOSE principles. Task 3.3 will include the following activities:
 - Draft SysR and SysR walkthrough documents
 - Review Draft SysR with RSD co-chairs and incorporate their feedback
 - Disseminate Draft SysR to RSD SC at least 2 weeks in advance to the Walkthrough meeting; collect any comments submitted prior to the walkthrough and incorporate these into the walk through document
 - Hold SysR Walkthrough. Activities include taking notes on comments and changes, and publishing these within a week of the walkthrough
 - Incorporate comments in red-lined SysR and comment resolution into a Comment-Resolution matrix (CRM)
 - Review changes with RSD co-chairs prior to release notes and CRM
 - Disseminate Final Draft SysR to RSD members per RSD co-chairs
 - Update Final Draft SysR incorporating additional comments

Deliverables:

- Draft Requirements Document
- Requirements Walkthrough Document
- Requirements Walkthrough Notes
- Comment Resolution Matrix
- Final Draft SysR
- Task 3.4: System Design Document (SDD) for RSD. This task will convert requirements into RSD technical architecture and specifications. Cybersecurity, physical security and privacy considerations will also be taken into account in the design. Task 3.4 will include the following activities:
 - Draft SDD and SDD walkthrough documents
 - Review Draft SDD with RSD co-chairs and incorporate their feedback
 - Disseminate Draft SDD to RSD SC at least 2 weeks in advance to the Walkthrough meeting; collect any comments submitted prior to the walkthrough and incorporate these into the walk through document
 - Hold SDD Walkthrough. Activities include taking notes on comments and changes, and publishing these within a week of the walkthrough
 - Incorporate comments in red-lined SDD and comment resolution into a Comment-Resolution matrix (CRM)
 - Review changes with RSD co-chairs prior to release notes and CRM
 - Disseminate Final Draft SDD to RSD members per RSD co-chairs
 - Update Final Draft SDD incorporating additional comments

Deliverables:

- Draft SDD Document
- SDD Walkthrough Document
- SDD Walkthrough Notes
- CRM
- Final Draft SDD

Task 3.5: Configuration Management for RSD SE Documents. This task will occur through the duration of the SE document development. A key staff will be responsible for reviewing and ensuring

traceability of the Needs to Requirements to Design elements. The result will be a Needs to Requirements Traceability Matrix (RTM). The tool may be an Excel spreadsheet that shows forward and backward traceability. Any change to the needs after completion of the Final Draft Needs Assessment or change to the requirements following completion of the Final Draft System Requirements document will require review by the RSD co-chairs prior to updating. All changes will be documented in a change log.

Deliverables:

- Requirements Traceability Matrix (updated after each task 3 subtask)
- RTM Change Log

2.6 Task 4 General Analysis [PWS Task 4]

Task 4.1 General Analysis

Objectives

- As directed, develop technical and policy briefs or presentations for strategic development about the project and standards development roadmap and activities.

Approach

- Development of presentations support USDOT and ITE to communicate this project at a variety of forums. Technical briefs support USDOT in understanding existing and emerging trends and trade-offs in technology related to MAT standards development. As directed by the COR, the project team will work with the COR to understand the needs or messaging associated with the materials, propose an approach, provide a draft for review, and generate a final of the material within the timeframe proposed by the COR.

Deliverables

- MAT Technical Briefs and Presentations (Draft and Final) [PWS Deliverable]

Task 4.2: Standards Roadmap Development

Objectives

- As directed, Task 4.2 includes roadmap-related documents that may be commissioned as directed by the COR. The scope of task 4.2 includes developing and updating MAT use cases, developing additional white papers on high priority topics that require standardization., and/or developing a five-year roadmap that identifies gaps in standards and standardization activities. The roadmap may also include input from the use case white papers, and input from the SCC and other organizations developing strategic standard roadmap documentation.

Approach

- Gather documentation on projects and new material on gaps in standardization for MAT.
- Develop use case descriptions for use cases that present gaps in existing standards

Deliverables

- MAT Standards Roadmap [PWS Deliverable]
- New MAT use case White Papers [PWS Deliverable]

2.7 Project Acceptance Criteria

Overall project acceptance is based on acceptance of the deliverables. Table 1 identifies the acceptance criteria and the accepting entity for each type of deliverable identified in Section 2.2 Project Scope

Description.

Table 1. Deliverable Acceptance Criteria and Accepting Entity

Deliverable Type	Acceptance Criteria	Acceptance By
Monthly Progress Reports	- Adherence to Sections 2.3 and 4.1 - Meets quality control criteria as described in Section 5.3.	COR
Project Management Plan	- Adherence to Section 2.3. - Meets quality control criteria as described in Section 5.3.	USDOT
Comment Disposition Reports	- Criteria to be established by the Project Manager. - Meets quality control criteria as described in Section 5.3.	USDOT
All Deliverable Documents	- Meets the objectives of the applicable project task (see Sections 2.2.3-2.2.6) - Meets quality control criteria as described in Section 5.3.	USDOT

2.8 Project Exclusions

No exclusions have been identified.

2.9 Project Constraints

The following constraints have been established for the MAT Standards Support Project:

- The project schedule may not extend beyond August 14, 2027 without prior formal approval from the ITS JPO, COR, and CO).
- No capital expenditures are available for the project.
- Project travel must be preapproved by ITE.

2.10 Project Assumptions

The following assumptions are being made for the MAT Standards Support Project:

- Additional web conferences will be used as needed to meet the project goals.
- Time has been built into many of the tasks due to DOT review.
- Throughout the project, there may be various versions of the project schedule produced to take advantage of economies discovered or to account for anomalies unforeseen. As long as there is no change in scope, this PMP does not need to be modified.

2.11 Scope Verification

It is the responsibility of the Project Manager to verify interim project deliverables against the original scope as defined in the scope description (see Section 2.2.1). If there is a proposed change of scope (see Section 2.10), ITS JPO must formally accept the change prior to its incorporation into the project.

2.12 Scope Control

The Project Manager and the Project Development Team will work together to control the scope of the project. The Project Development Team will leverage the project scope description (see Section 2.2.1) and the project schedule (see Section 4.3) as a statement of work for each task. The Project Development Team and subject matter experts will ensure that they perform only the work described in the project scope description and generate the deliverables identified. The Project Manager will oversee the Subcontracted

Subject Matter Experts (“sub-consultant team”) and the progression of the project to ensure that this scope control process is followed.

A change in scope is defined by a change in the overall budget, a change that extends the overall schedule, or a change in the work to be performed. Any member of the Project Management Team, the sub-consultant team, the Committee, or the ITS JPO may propose a change in scope. The proposed change is assessed by the Project Management Team and sub-consultant team. If the Project Management Team and sub-consultant team determine that a change in scope is warranted, formal approval from ITS JPO is required. This PMP is to be updated in case of an approved change in scope.

3 COMMUNICATIONS PLAN

3.1 Purpose of the Communications Plan

This Communications Management Plan sets the communications framework for the administration of the MAT Standards Support Project. It identifies the key stakeholders, their roles, and contact information.

3.2 Stakeholder Points of Contact

ITS JPO Contracting Officer’s Representative (COR)

Robert Sheehan
United States Department of
Transportation 1200 New Jersey Avenue,
SE
Washington, DC 20590
Phone: 202-366-6817
Email: Robert.sheehan@dot.gov

Federal Transit Administration (FTA) Representative

Todd Allen
Senior Transportation Program Analyst
Office of Research, Demonstration, and Innovation
Federal Transit Administration
Phone: (202) 366-3793
Email: todd.allen@dot.gov

Hendrik (Rik) Opstelten
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 Technical Standards Program Associate
 Institute of Transportation Engineers
 1627 I ("Eye") Street, NW,
 Suite 550 Washington, DC
 20006
 Phone: 202-464-6211
 Email: pmorrison@ite.org

3.3 Project Team and Committee Communications

Communications within the sub-consultant team is on an ad hoc basis. Meetings of the MAT Project Committee will typically use web conferencing. Throughout the project, the Committee will provide technical guidance and document reviews. The Project Manager will work to ensure that Committee meetings and web conferences are carried out according to the project needs.

3.4 Communications with ITS JPO

Communications between the Project Development Team and ITS JPO will formally take place once monthly and as deliverables occur as described in Section 4. It is anticipated that ITS JPO will have one or more technical staff participating in the Committee meetings and web conferences where they will have extemporaneous and informal communication with the Project Development Team. Official communications between ITS JPO and the Project Development Team should be made through the Project Administrator/Coordinator and the COR (see Section 3.2).

4 DELIVERABLES AND MILESTONES

4.1 Monthly Progress Reports

ITE will provide monthly progress reports as follows:

- 4.1.1 **Monthly Status Reports** – ITE will submit monthly progress reports no later than 30 days after the end of the month being reported on in the format specified by the COR. The progress report will describe work completed during the period, anticipated work, problems encountered and/or anticipated as well as financial status including at least hours expended and other costs.
- 4.1.2 **Project Schedule** – ITE will submit, to the Government, an initial project schedule in Microsoft Project Document (MPP) format within thirty (30) days after the effective date of the contract and updates showing the percent complete of major deliverables every thirty (30) days thereafter. The schedule will include at a minimum the major deliverables and milestones and adhere to the Microsoft Project template structure provided by the COR. Any changes to due dates after the initial project schedule baseline must be approved by the Government. ITE will support the identification of schedule dependencies related to the project and in accordance with the Government defined process.
- 4.1.3 **Risk Register** – ITE will document risks that might affect the project and the characteristics of the risk defined by the ITS JPO. The COR will provide a Microsoft Excel-based Risk Register template for ITE to populate and update as necessary. Each risk will have a unique number, probability of occurrence and impact of occurrence rating. The risk log will be updated monthly and submitted with monthly progress reports.

ITS JPO templates are available at http://www.its.dot.gov/project_mang/index.htm.

The Project Manager will provide a monthly summary of the sub-consultant team progress reports to the Project Administrator/Coordinator and an updated project schedule per the requirements for the Project

Administrator/Coordinator's monthly reporting.

4.2 Deliverable Summary

Documents and software deliverables are to be sent electronically to the COR. Table 2 identifies the deliverables based on the project tasks identified on the Gantt Chart in Figure 1 and Figure 2.

Table 2. Deliverables by Project and Task

Proj Task	Deliverable Item	Delivery Date
	ATP: October 9, 2025 POP End Date: August 14, 2027	
1	Monthly Progress Reporting	10 days after the end of each month
1	Project Management Plan Draft	December 12, 2025
1	Project Management Plan Final	January 15, 2026
2	SCC / SC RSD Meeting Agenda	per meeting schedule
2	SCC / SC RSD Meeting Notes	7 days after each meeting
2	RSD Systems Engineering Documents – Ballot Documents (Committee Approved Documents)	December 2026
2	RSD Systems Engineering Documents – Publication Ready Documents (Notice of Intent)	February 2027
3	RSD Needs Assessment – Draft	January 14, 2026
3	RSD Needs Assessment – Final Draft	March 31, 2026
3	RSD Concept of Operations – Draft	March 3, 2026
3	RSD ConOps – Walkthrough Document	March 3, 2026
3	RSD ConOps – Walkthrough Notes	April 22, 2026
3	RSD ConOps – CRM	May 13, 2026
3	RSD ConOps – Final Draft	April 6, 2026
3	RSD System Requirements – Draft	April 27, 2026
3	RSD SysR – Walkthrough Document	April 27, 2026
3	RSD SysR – Walkthrough Notes	June 18, 2026
3	RSD SysR – CRM	July 10, 2026
3	RSD SysR – Final Draft	July 10, 2026
3	RSD System Design Document – Draft	August 18, 2026
3	RSD SDD – Walkthrough Document	August 18, 2026
3	RSD SDD – Walkthrough Notes	October 9, 2026
3	RSD SDD – CRM	November 2, 2026
3	RSD SDD – Final Draft	November 2, 2026
3	Requirements – Needs Traceability Matrix	November 2026
3	RTM Change Log	November 2026
4	MAT Technical Briefs and Presentations	As directed
4	MAT Standards Roadmap	As directed
4	New MAT use case White Papers	As directed

4.3 Project Schedule

The Gantt Charts in Figure 1 through Figure 3 provide the schedule for the MAT Standards Support project. *It must be emphasized that these projects are not “leveled” based on personnel or priority as funding levels have not been solidified. This means that the dates of projects do not reflect the makeup of the sub-consultant team, their skills and their availability. Once funding levels and priorities are established the project schedule will be adjusted.*

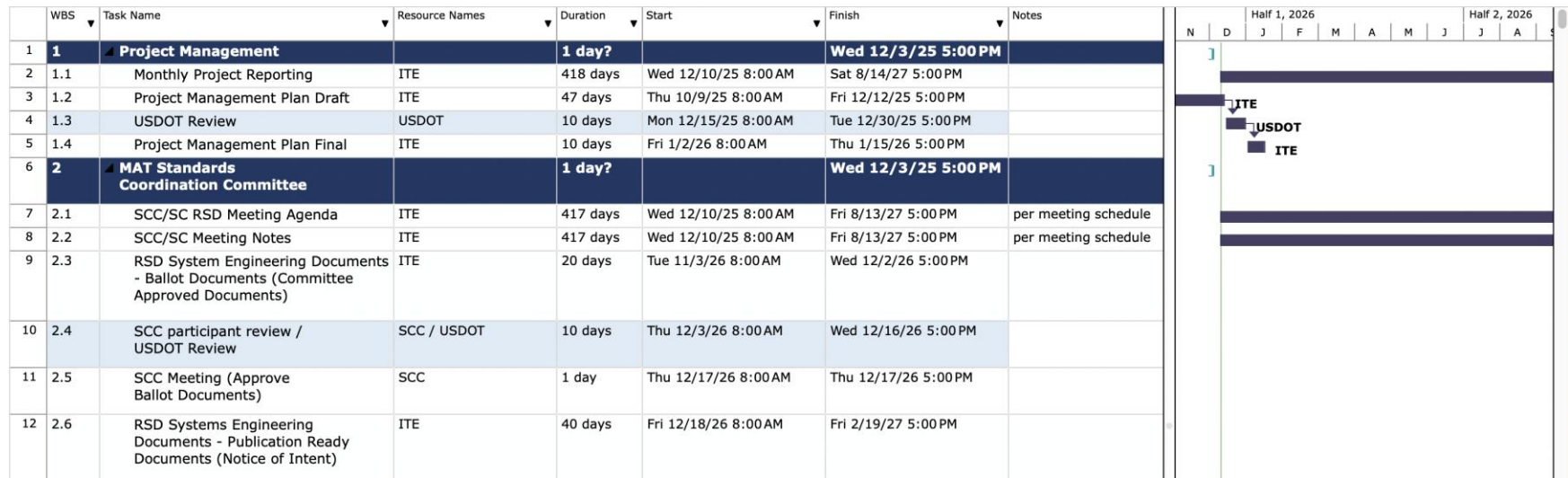


Figure 1. Project Schedule (Part 1 of 2)



Figure 2. Project Schedule (Part 2 of 3)



Figure 3. Project Schedule (Part 3 of 3)

5 QUALITY MANAGEMENT PLAN

5.1 Purpose of the Quality Management Plan

This Quality Management Plan describes how quality will be managed throughout the life of the project. It includes processes and practices for ensuring quality planning, quality control and quality assurance.

5.2 Quality Planning

In order to be successful, this PMP has integrated a quality system into the project tasks, project schedule, project deliverables and Project Development Team. The Project Manager and sub-consultant team have been selected for their experience with MAT.

There are two types of “quality” addressed by this plan: “product quality” and “process quality.” Product quality focuses on the project deliverables. Product quality will be insured by the Committee as described in the previous paragraph. Process quality focuses on how the project deliverables will be produced. The project scope description establishes multiple cycles of Committee review, comment, and comment resolution periods all directed at the aspect of quality.

5.3 Quality Control

This section describes the process for monitoring and recording the results of executing the quality activities. It applies to the project’s products as opposed to its processes.

The Committee review of all project deliverables will be performed according to the project schedule. Additional reviews may be required to meet project objectives. Reviewers will verify that deliverable documents:

- 5.3.1 contain suitable material for the target audience;
- 5.3.2 are organized in presentation;
- 5.3.3 contain proper word use and English diction;
- 5.3.4 contain detailed illustrations;
- 5.3.5 are comprehensive, complete and technically correct; and
- 5.3.6 are edited for grammatical and editorial errors.

Project deliverables will be judged on a “suitable for purpose” basis. The Project Development Team may identify more items or make suggestions for changes to a document that are needed to meet the project goals. In some cases, gaining consensus on technical matters within a committee can be time consuming. If any undertaking by a committee may jeopardize the project schedule, the Project Manager or Project Coordinator/Administrator may make decisions and recommendations to move the project forward.

5.4 Quality Assurance

A Quality Checklist will be established and maintained by the Project Manager to assist in identifying specific items to be reviewed by the Committee. A Project Issue Log will be established and maintained by the Project Manager to capture any issue regarding the project that should be addressed by the Project Management Team including items that pertain to quality. Items for the Quality Checklist and Project Issue Log may be proposed by any member of the Project Development Team. It is up to the Project Management Team to determine if these items should be included on these lists and if any action should be taken. The Project Management Team will discuss any quality items on a bi-weekly basis.

6 HUMAN RESOURCES MANAGEMENT PLAN

6.1 Purpose of the Human Resources Management Plan

This Human Resources Management Plan is a tool which aids in the management of human resources throughout the MAT Standards and Cybersecurity Support project. It contains the roles, responsibilities and reporting on the project.

6.2 Roles, Responsibilities and Reporting

Table 3 identifies the members of the MAT Standards and Cybersecurity Support Project Development Team, their roles within the project, their project responsibilities, and their reporting responsibilities.

Table 3. Multimodal for All Travelers Project Development Team and Reporting

Name	Project Role	Responsibility	Reporting
Siva Narla ITE (202) 464-6219 snarla@ite.org	Project Administrator /Coordinator	- Part of the Project Management Team. - Official administration and coordination of the project from a contract's perspective. - Monitors project expenditures in labor, travel expenses and capital expenses. - Official project communications channel to the COR. - Coordinates and supports the Connected Intersections Committee.	Provides monthly progress reports to the COR per Section 2.3 including an updated Microsoft Project Schedule.
Patrick Morrison ITE (202) 464-6211 pmorrison@ite.org	Technical Standards Program Associate / Coordinator	- Part of the Project Management Team. - Official administration and coordination of the project from a contract's perspective. - Monitors project expenditures in labor, travel expenses and capital expenses. - Official project communications channel to the COR. - Supports the Project Committee.	Provides monthly progress reports to the COR per Section 2.3 including an updated Microsoft Project Schedule.
Ed Stollof ITE (202) 785-0060x604 edstollof@ite.org	Contracts Manager	- Part of the Project Management Team. - Official administration and coordination of the project from a contract's perspective. - Prepares project policies and procedures to fulfil contract requirements.	Provides monthly progress reports to the COR per Section 2.3 including an updated Microsoft Project Schedule.
Patrick Chan, P.E. ConSysTec (917) 497-6718 Patrick.chan@consystec.com	SME	- Part of the Sub-Consultant Team. - Provide feedback on technical deliverables as appropriate. For example, use cases and reports.	Weekly progress reports with Project Team
Douglas Benison, ConSysTec (516) 581-7850 Doug.benison@consystec.com	SME	- Part of the Sub-Consultant Team. - Provide feedback on technical deliverables as appropriate. For example, develop SE documents and reports.	Weekly progress reports with Project Team
Paula (Polly) Okunieff, ICF (617) 983-3364 Polly.okunieff@icf.com	Technical Lead, SE, SME	- Part of the Project Management Team. - Part of the Subconsultant Team. - Assists ITE to maintain project reporting required by the USDOT. - Quality management function on deliverables. - Provides leadership for the rest of the consulting team. - Coordinates with the Chairs of the ISC, SCC and	- Weekly progress meetings with Project Team. - Provides monthly project status reports and schedule updates to the PM per

Name	Project Role	Responsibility	Reporting
		SC. • Creation and maintenance of PMP preparation. • Provides expertise in MAT domains.	Section 2.3.
Carol Schweiger (781) 424-2208 Carol@tech4transit.com	SME	• Part of the Subconsultant Team. • Provide feedback on technical deliverables as appropriate. For example, ConOps, SyRS, SDD • Participates in technical reviews (e.g., walkthroughs) of the technical deliverables	• Weekly progress reports with Project Team.
Tiffany Rad ELC networks (202) 507-9441 tiffany@anatropo.com	SME	• Part of the Subconsultant Team. • Provide feedback on Cybersecurity and Privacy related to technical deliverables as appropriate. • Participates in technical reviews (e.g., walkthroughs) of the technical deliverables.	• Weekly progress reports with Project Team.
Himaja Nimmagadda Gurus Infotech 703-786-0073 hcn@gurusinfotech.com	SME/PM Support	• Part of the Subconsultant Team. • Supports PGM, PM and Technical Lead. • Meetings, records, collaboration tools • Participates in technical reviews (e.g., walkthroughs) of the technical deliverables.	• Weekly progress reports with Project Team.

6.3 Risk Management Plan

This section identifies potential problems in the project before they occur, plans for their occurrence, and monitors the system development so that early actions can be taken. A Risk Log has been established as shown in Table 4. Using this log risks can be identified, analyzed, prioritized, and mitigated. Note: The Risk Log will be initiated with risk items once funding levels and priorities are established for MAT Standards Support Project.

Risk monitoring will be performed by the project manager on a bi-weekly basis. Each risk area addressed in this PMP will be reviewed along with any new risk area that is identified during the execution of the project. At any time during the project any member of the Committee or interested parties may alert the management team of the occurrence of a risk item or identify new risk areas. New risk areas identified will be added to a Risk Log Table maintained by the project manager.

Table 4. Risk Log Table format

ID#	Project Work Stream	Status	Risk Category	Description	Impacts	Owner	Mitigation (update where applicable)	(P)	(I)	P*I	Date Assessed
01	N	NA	Schedule	Delays as a result of scheduling conflicts by unavailability of co-chairs	Cannot ballot SE documents before the end of the contract	ITE	Attempt to make up time on other tasks or shorten review periods	2	2	4	2025-12-01
02	N	NA	Schedule	Mobilization of SCC / SC RSD participants	Cannot gain a plurality of interest, comments or votes for balloting	ITE	May need to delay votes and recruit additional participants prior to review or voting.	2	2	4	2025-12-01
03	N	NA	Technical / Deployment	Need to produce guidance or supplemental materials to accelerate stakeholder engagement and adoption of standard.	Vendors and stakeholders may have a difficult time transitioning or deploying the standard consistently without guidance provided in supplemental materials.	ITE	We may need to seek supplemental funding and solicit early deployers to share their experience. We may also engage a Community Based Specification Development Organization to post information about their experiences and guidance on their website.	1	2	2	2025-12-01
04	N	NA	Cost / Deployment	May need to survey participants and stakeholders to obtain current state of deployment.	The benefits and obstacles to deployment may be mitigated by soliciting a questionnaire to stakeholders (vendors and operators). The cost to analyze and publish the results may in additional hours and resources that are not accounted for in this Scope.	ITE	ITE has a survey tool and an extensive mailing SCC list to access stakeholders.	1	1	1	2025-12-01

LEGEND:

ID# – Unique identifier for each identified risk item.

Project Work Stream – Specific contract/task order activity and/or deliverable to which the risk item applies.

Status –

N: New

R: Retired

IDPMP: Identified in PMP or SEMP

Risk Category –

- a) Schedule – Risks that cause schedule slippage of the project;
- b) Cost – Risks that cause cost to exceed budget of the project; and

Description – Risks affecting the completeness or correctness of the product. Description – Concise description of the risk item.

Impacts – Impacts on the task or program if the identified risk occurs. Owner – Individual or entity with authority to resolve risk.

Risk Response Plan (Mitigation) – Description of the planned response should an identified risk occur. This column can be a reference to a specific plan document.

Date Assessed – Most recent date the risk and/or risk response plan was updated.

(P) – See Table 5 below.

(I) – See Table 5 below.

P*I – Risk probability

(P) multiplied by impact of risk

(I). Priority - Identifies priority based on the P*I.

Table 5. Values Assigned for Probability of Risk and Impact of Risk

Probability of Occurrence (P)	Impact of Risk (I)
3 = High Certain or very likely to occur	3 = High Major impact on cost, schedule, or scope
2 = Medium 50/50 chance of occurring	2 = Medium Significant impact on cost, schedule or scope
1 = Low Possible, but unlikely to occur	1 = Low Insignificant impact on cost, schedule, or scope

APPENDIX A – REFERENCES

USDOT ITS Joint Program Office, Task Order No. HOIT210145PR for Multimodal and All Travelers Standards and Cybersecurity Support

Contract Number FHWA#693JJ321D000005 , Task Order # 693JJ323F00344N

ITS JPO templates are available at http://www.its.dot.gov/project_mang/index.htm

Projects Referenced : Multimodal and All Travelers Standards Assessment (MATSA); All Travelers Technology Research Initiative (ATTRI); ITS4US Deployment Program (among other USDOT programs/areas such as Mobility Services for All Americans, and Vehicle-to-Infrastructure (V2I) and Connected Vehicle resources); CALACT; ISO TC204 WG 8; The Integrated Mobility Innovation (IMI), Accelerating Innovative Mobility (AIM) and CTAA grants; ISO TC204 WG19; Work Zone Data Exchange (WZDx); Multimodal and All Access Travel Standards and Cybersecurity for s Support Project (MAT-1).

APPENDIX B – GLOSSARY, ACRONYMS AND ABBREVIATIONS

Term	Definition
AASHTO	American Association of State Highway and Transportation Officials
AIM	Accelerating Innovative Mobility
ATP	Authorization to Proceed
ATTRI	All Travelers Technology Research Initiative
CALACT	California Association for Coordinated Transportation
CO	Contracting Officer
ConOps	Concept of Operations
COR	Contract Officer's Representative
CTAA	Community Transportation Association of America
CV	Connected Vehicles
ITE	Institute of Transportation Engineers
DOT	Department of Transportation
IMI	Integrated Mobility Innovation
ITS	Intelligent Transportation Systems
JPO	Joint Program Office
MAT	Multimodal All Travelers
MOD	Mobility-On-Demand
MATSA	Multimodal and All Travelers Standards Assessment
N/A	Not Applicable
NEMA	National Electrical Manufacturers Association
PMP	Project Management Plan
PROW	Public Right of Way
PWS	Performance Work Statement
SDO	Standards Development Organization
SE	Systems Engineering
SEMP	Systems Engineering Management Plan
SEMS	Systems Engineering Master Schedule
SEP	Systems Engineering Process
SME	Subject Matter Expert
SRS	System Requirements Specification
TBD	To Be Determined
TOCOR	Task Order Contracting Officer's Representative
USDOT	United States Department of Transportation
V2I	Vehicle-to-Infrastructure
WBS	Work Breakdown Structure