Oversight Procedure 54 — Readiness for Service

1.0 PURPOSE

The purpose of this Oversight Procedure (OP) is to describe the review, analysis, and recommended procedures that the Federal Transit Administration (FTA) expects the Project Management Oversight Contractor (PMOC) to follow when evaluating the project sponsor's readiness for service. For the purposes of this OP, readiness to enter service is the completion of System Integration Testing (SIT) of project components, equipment, subassemblies, assemblies, subsystems, and systems; fulfillment of safety and security certification requirements; completion of Pre-Revenue Operations (PRO); and confirmation that the project sponsor (or operator, if different) has the Management Capacity and Capability (MCC) to operate the new transit facility (collectively, this evaluation is referred to as a "Readiness Review").

Through early performance of this OP, the PMOC can help the project sponsor to avoid "11th hour" testing, untimely surfacing of operational, maintenance, and safety problems, and related delays of the revenue service date. Planning for SIT and PRO should start at least 12 months prior to substantial completion of project construction. These planning activities should include the development of an Operational Hazard Analysis (OHA), SIT Plan, and PRO Plan and workarounds. Further, the Project Management Plan (PMP) and referenced subplans should be reviewed prior to revenue operations to ensure the processes are sufficient for operations.

Note that this OP is comprehensive and not all sections will apply or apply equally in terms of level of details to all transit modes. For example, there are sections for which the same level of detail may not apply to bus rapid transit projects as will be the case for rail projects. Based on the mode of transit, the Alternate Contractor's Representative will provide additional details of the scope of work through the Implementation Plan issued to the PMOC.

While this OP focuses on Capital Investment Grant (CIG) projects, which have specific requirements by law, it also applies to all capital projects. FTA will issue Implementation Plans (IPs) to clarify the specific reviews and expected deliverables based on the project types.

2.0 BACKGROUND

Early planning for SIT and PRO training and testing is essential. This avoids public safety concerns associated with conforming to industry standards, standard of care, and conformance with contractual requirements, impacts to construction, and delays to the revenue service date. All involved stakeholders including safety personnel, operations, maintenance, engineering, construction managers, and construction contractors should be aware of the testing and PRO processes. Further, the project sponsor is responsible for informing the affected community and public of the safety and security concerns associated with the operation of the new transit system. This is essential prior to and during the testing and PRO phase when the facilities present new and unknown risks to the community, as well as to the workers.

It is important for project sponsors to continually refer to hazard analyses and provide evidence that the hazard resolution process has been implemented, tracked, and monitored throughout the project life cycle. Safety devices, warning devices, updated procedures, and rules should all be

in place before any train movement is allowed. If such items are outstanding prior to testing, the project sponsor must review the hazards and provide detailed workarounds to mitigate these hazards until final resolution. Safety certification should not be left for final approval until just days before a project opens for revenue service.

Testing verifies that all systems, subsystems, components, equipment, and materials conform to the requirements of the contract documents. Successful completion of the PRO testing, certifying, and permitting helps to assure that the transit project will operate and can be maintained as an integrated whole at acceptable levels of safety and security, to the extent possible in conformance to industry standards, standard of care, and conformance with contractual requirements, for the public at large as well as the workforce.

3.0 OBJECTIVES

The objectives are to generally assess the following:

- All systems, subsystems, components, equipment, and materials furnished and installed conform to the requirements of the contract documents;
- The entire transit system, with all interfaces, operates as an integrated whole and is capable of functioning effectively to provide dependable service;
- The system is safe for use by patrons to the extent possible, in conformance to industry standards, standards of care, and conformance with contractual requirements;
- The system will operate safely through the host communities; and
- The operator has showed the MCC how to safely operate and maintain the system to the extent possible through hiring sufficient numbers of experienced staff to operate and maintain the new system and all employees have been adequately trained and protected.

4.0 REFERENCES

The PMOC shall become familiar with the following references to Federal legislation, regulation, and guidance before reviewing the project sponsor's work. These are the principal references, but this list is not exhaustive:

4.1 Legislative

- Infrastructure and Investment Jobs Act (IIJA), Public Law 117-58, effective November 15, 2021 (also known as the "Bipartisan Infrastructure Law")

4.2 Regulations

- 49 CFR Part 633, Project Management Oversight
- 49 CFR Part 673, Public Transportation Agency Safety Plans
- 49 CFR Part 674, State Safety Oversight

4.3 Guidance

- FTA Project and Construction Management Guidelines (2016)
- Handbook for Transit Safety and Security Certification (2002)

5.0 PROJECT SPONSOR'S SUBMITTALS

In advance of performing the Readiness Review, the PMOC should obtain and study the following project documents. The PMOC should notify FTA of important discrepancies in the project information that would hinder the review. (For example, if there was a mismatch between the drawings and the actual construction in which the drawings do not reflect field conditions.)

5.1 Project Documents

- **Scope / Project Definition**
  - Contract documents (plans and specifications)
  - Documentation of changes to scope that have occurred since last milestone
  - Operating plan; operating rules
  - Applicable standards, codes, and regulations
  - Project design criteria
  - Quality control procedures
- **System Integration Testing (SIT)**
  - Agency policies related to testing and operations
  - Systems/facilities integration and coordination plan
  - SIT plan
  - Schedule for SIT activities
  - Test procedures signed test reports
- **Safety and Security**
  - Public Transportation Agency Safety Plan (PTASP)
  - System Emergency Management Plan if not included in PTASP
  - Security and Emergency Preparedness Plan(s) and/or System Security Plan (SPP)
  - Safety and Security Management Plan (SSMP)
  - Safety and Security Certification Plan (SSCP)
  - Safety Certifiable Items List (CIL)
  - Preliminary Hazard Analysis (PHA), including updates
  - Threat and Vulnerability Analysis (TVA), including updates
  - Operational Hazard Analysis (OHA)
  - Safety and security related design criteria
- **Pre-Revenue Operations**
  - Rail/Bus Activation Plan (RAP/BAP)/PRO Plan
  - Fleet Management Plan
  - Schedule for PRO Activities Training Program
  - Rulebook
  - Standard Operating Procedures (SOPs)
  - Public Awareness / Outreach Plan
  - Workarounds
- **Management Capacity and Capability**

- PMP and subplans
- Signed agreements with railroads, utilities, or other third parties
- Quality Assurance/Quality Control (QA/QC) Plan

5.2 Timing of the Process

Figure 1 shows the ideal timeline for implementing the SIT, Safety and Security, and PRO processes. Ideally, the processes are complementary with the intent of completing the work comfortably in time for revenue operations. **Prior to any trains operating on the alignment for PRO, all system safety and security elements or effective workarounds should be in place.**

Depending on the project's scope and schedule, FTA and the PMOC may consider conducting the Readiness Review as (i) a single complete review, (ii) multiple complete reviews, or (iii) multiple partial reviews, as described below:

i. When conducting a single review that completely addresses the Readiness Review scope, FTA and the PMOC should schedule the review prior to the start of SIT, typically three-to-six months prior to the start of revenue operations.
ii. When conducting multiple readiness reviews, with each review completely addressing the Readiness Review scope, the reviews should be conducted as the SIT and PRO phases progress and the project documents and activities advance. The PMOC Readiness Review Report should be revised or updated to reflect the subsequent review findings.
iii. When conducting multiple readiness reviews, with each review partially addressing the Readiness Review scope, the PMOC should review a limited scope of the project documents and activities. An example may include conducting the partial Readiness Review to address the SIT activities, then scheduling another review to address the PRO activities, etc. as the project schedule advances.

Figure 1: Systems Integration and Pre-Revenue Operations Integrated Process

Activity/ Phase	Project Development	Engineering	Start Construction	50% Construction	90% Construction		Pre-Revenue Operations	Revenue Service
Project Management Plan (PMP)								
Update PMP & Subplans	Develop Outline	Finalize Plans			Update			
Quality Control Procedures		Develop	Finalize		Update			
Safety & Security								
SSMP	Develop Outline	Finalize Plan			Update			
Design Criteria	Develop	Finalize						Update
Preliminary Hazard Analysis		Finalize	Update					
Threat & Vulnerability Assessment		Finalize	Update					
Safety & Security Certification Plan	Develop Outline	Finalize Plan						
Safety Certifiable Items List (SCIL)	Develop	Finalize	Safety & Security Certification Activities and Documentation					
Operational Hazard Analysis					Develop		Finalize	
Public Transportation Agency Safety Plan (49 CFR 673)		Develop					Finalize	

Activity/ Phase	Project Development	Engineering	Start Construction	50% Construction	90% Construction		Pre-Revenue Operations	Revenue Service
SCIL Documentation		Safety & Security Certification Activities and Documentation						
System Integration Test (SIT) Planning								
SIT Plan			Develop	Finalize			Update	
Schedule for SIT Activities				Develop	Finalize		Update	
Test Procedures				Develop	Finalize		Update	
Testing								
Pre-Revenue Operations (PRO) Planning								
PRO Plan & Schedule				Develop 12-months prior to substantial completion				
Emergency Preparedness Plan				Develop				
Update Rulebook					Finalize / Update			
Standard Operating Procedures					Finalize / Update	→		
Training Program					Conduct Training			
Public Awareness Plan					Develop	→		
PRO					PRO is typically 34 months after substantial completion			

Activity/ Phase	Project Development	Engineering	Start Construction	50% Construction	90% Construction	Pre-Revenue Operations	Revenue Service
Final Safety & Security Certification							
Safety Certification Verification Report State Safety Oversight (SSO) approvals (as applicable)						Finalize Complete	
Revenue Service							

6.0 SCOPE OF WORK

The PMOC shall assess and evaluate the adequacy, soundness, and timeliness of the project sponsor's:

- SIT
- Project system safety and security validation
- PRO Plan and workarounds
- Management capacity and capability

In addition, the PMOC will coordinate and support, as directed, the implementation of other oversight procedures, such as OP 24 "Quality Assurance / Quality Control Review" and OP 22 "Safety and Security Management Review" to adequately assess the project's readiness for operations. FTA expects that review activities will be coordinated with other ongoing reviews by the FTA Office of Safety and Oversight or the State Safety Oversight Agency (SSOA).

The PMOC will continue to provide updates on the project sponsor's activities to address the Readiness Review findings and recommendations in monthly reports or as directed.

The PMOC will reference the following appendices in completing the Readiness Review:

- Appendix A: Acceptable Quality Level
- Appendix B: Sample Activity Flowchart
- Appendix C: Sample Rail Activation Plan Table of Contents
- Appendix D: Pre-Revenue Assessment Worksheet (OP 54 Readiness Review Worksheet)

6.1 System Integration Testing

SIT validates that all fixed facilities, systems, and equipment perform as intended, both individually and as an overall system when integrated. The process also confirms that all personnel have the management capacity and capability to provide safe and dependable service, and that emergency drills have been completed prior to revenue operations.

For a well-managed project, SIT is integrated into the project's Master Schedule with time-phased activities showing the interdependencies between various activities and project milestones. The tests should confirm to the following sequence:

- **Design Completions**. All design affecting the respective equipment or work must have been approved prior to start of any test. Exceptions determined by design conformance reviews should be documented and mitigated as applicable.
- **Inspection**. All equipment, devices, and materials must be inspected for compliance to contractual requirements before starting any test. Exceptions determined by construction conformance reviews should be documented and mitigated as applicable.
- **Test Plans, Procedures and Reports**. All requirements in the contract documents regarding test plans, test procedures, and test reports must be completed prior to the commencement of the next phase of test for each respective equipment, device, subsystem, or system;

- **Design / Component Tests**. All design tests affecting the respective equipment, devices, and materials must be satisfactorily completed prior to proceeding to production tests;
- **Production / Factory Acceptance Tests (FAT)**. All production tests affecting the respective equipment and devices must be satisfactorily completed prior to shipment of equipment from the factories;
- **Field Tests**. Field tests will be performed after installation of equipment, devices, and materials at the project site. All equipment will be verified that it is properly installed, connected, and in operable condition. No equipment will be energized or placed in the operating mode until approved;
- **Startup Tests**. Startup tests will be performed after satisfactory completion of all field tests to verify that all equipment, devices, and materials installed will function as an integrated system in accordance with the contractual requirements.

The PMOC will complete the following subtasks in their review.

6.1.1 Systems to be tested:

The PMOC shall assure all the systems below (as applicable) are tested:

- Tracks
- Stations
- Yards and shops
- Vehicles
- Traction Power System (substations, contact rails and overhead catenary)
- Train Control System
- Signaling System
- Traffic Signaling
- Communications System
- Supervisory Control and Data Acquisition (SCADA)
- Operations Control Center
- Fare Collection System Equipment
- Grade Crossings
- Other items, as deemed necessary

The PMOC shall evaluate the project sponsor's Systems/Facilities Integration and Coordination Plan. This plan must coordinate stakeholders; take into account time constraints and access for testing, and incorporate supporting information as necessary. Check for areas in which early coordination and testing may be critical to avoiding delays to the balance of the testing. As an example, railroads often require early coordination and testing, including:

- Clearance testing for shared transit/railroad track along the transit corridor;
- Pedestrian crossing warning system testing at stations;
- Grade crossing warning system control testing at intersections with both transit and railroad tracks.

6.1.2 Plan for Systems/Facilities Integration and Coordination Training

The PMOC shall evaluate the project sponsor's Systems/Facilities Integration and Coordination Plan. This plan must coordinate stakeholders, take into account time constraints and access for testing; and incorporate supporting information as necessary. Check for areas in which early coordination and testing may be critical to avoiding delays to the balance of the testing. As an example, railroads often require early coordination and testing, including:

- Clearance testing for shared transit/railroad track along the transit corridor;
- Pedestrian crossing warning system testing at stations;
- Grade crossing warning system control testing at intersections with both transit and railroad tracks.

6.1.3 Systems Integration Test Plan (SITP)

The PMOC shall evaluate the project sponsor's SITP as an effective work plan for coordination of stakeholders, integration with the Master Schedule, procedures for public safety, protocols for document control, and other elements as necessary. The PMOC shall evaluate activities where coordination and testing may be critical to avoiding delays.

The PMOC shall evaluate the test plan to confirm that the following have been included:

- Title of each test with reference to the respective article or section number in the contract documents
- Organization performing each test
- Coordination with other stakeholders
- Test location
- Submittal date of each test procedure, test report, and certified test document
- Schedule – starting and completion date for each test
- Document control procedures

6.1.4 Schedule for Training

The PMOC shall evaluate the project's schedule for integrated testing.

6.1.5 Test Procedures

Each test procedure shall contain detailed step-by-step procedures for performing the test and shall include the following information:

- Title of test
- Test objectives
- Test location and date of test
- Equipment and instrumentation with accuracy and calibration data
- Test criteria including test setup with circuit diagrams and test sequence
- Test criteria including data evaluation procedures
- Test data requirements including forms and format for recording data
- Primary and supporting test agency

6.1.6 Test Reports

The PMOC shall evaluate the project's test reports and ensure they include the following information:

- Title of test
- Test objectives
- Summary and conclusions
- Location and date of test
- Results including tables, curves, photographs, and any additional test data required to support the test results
- Descriptions of all failures and modifications including reasons for such failures and modifications and names of individuals approving such modifications
- Abbreviations and references
- Signatures of test witnesses

6.1.7 Completion and Recording

The PMOC shall confirm the successful completion and recording of the tests:

- Design tests
- Production tests
- Field tests
- Individual systems
- Integrated tests – static and dynamic

6.2 Project System Safety and Security Validation

The PMOC shall review the project sponsor's safety and security planning process for general conformance and to ensure that the recommendations developed through the hazard management program and other planning processes have been carried through design and implemented during construction. The PMOC will also confirm that the host communities affected by the project have been well informed of the safety and security issues associated with the project.

Safety and security validation should begin prior to any train movements being allowed on the new system, and hazards that have not been fully mitigated should be reviewed and appropriate workarounds developed. The following subtasks will be completed, as described below.

6.2.1 Safety and Security Organization

As part of their review, the PMOC will assess the general effectiveness of the safety and security organization within the project sponsor's organization at large. For example:

- Does the safety and security organization have the appropriate MCC to assure a safe project and is the organization effectively configured?
- Has the safety and security organization participated in design reviews, configuration control, the change control board, and/or other review capacities?
- Has the safety and security organization participated in the proceedings of the Fire/Life Safety Committee established for the new system?

- Has the safety and security organization been party to the completion of the PHA and TVA workshops and resulting mitigations?
- Has the safety and security organization participated in development of workarounds for outstanding construction punch-list items affecting safe operation and interface with the general public prior to testing trains on the system?
- Has an OHA been prepared, or as an alternative, has the PHA been refreshed to address readiness to first test trains safely and safely open for revenue operations?

6.2.2 Review of Safety and Security Planning

The PMOC shall review the following plans and documents to assure that safety and security concerns have been addressed prior to testing trains and all intermediate steps leading up to revenue operations:

- Public Transportation Agency Safety Plan
- Safety and Security Management Plan
- PHA
- TVA
- OHA
- Grade Crossing Analysis / Reports
- Safety and Security Certification Plan
- Certifiable Items Lists
- Workarounds / Construction Punch Lists*

* Construction punch-lists should be reviewed to ensure all safety critical items, public warning devices, and safety-related signage are installed and tested prior to testing trains.

6.2.3 Review of Risks and Mitigation

The PMOC will confirm that the findings and mitigations from the TVA and PHA are reviewed and addressed by the project sponsor. The PMOC will confirm that an OHA containing, at a minimum, an assessment of the PHA and typically involving additional hazard analysis, was conducted with operation and maintenance experts. The PMOC shall review the disposition of all unacceptable and undesirable risks (sometimes color-coded “Red” and “Yellow” in hazard tables) and the associated mitigation measures recommended in the PHA or the OHA, as applicable. The intent is to confirm which high risks have been mitigated, whether the mitigation has been included in the completed project, whether appropriate workarounds have been developed, or if the high risk has been considered acceptable and documented with the justification for this conclusion.

6.3 Pre-Revenue Operation

PRO planning involves the project sponsor’s work plan for preparing the system for revenue service. This work plan, referred to as the PRO Plan/RAP/BAP, defines the staffing requirements, personnel, training, testing, and documentation necessary to prepare the project for revenue operations.

The PMOC shall evaluate satisfactory completion of the following:

- PRO Planning
- Completed Rulebook and Standard Operating Procedures
- Operator and Maintenance Staff Training
- Emergency Preparedness
- Security System
- Public Education and Safety Awareness

6.3.1 Pre-Revenue Operations Planning

The PMOC shall confirm that the project sponsor has prepared a PRO Plan/RAP/BAP to guide their activities. The PRO Plan/RAP/BAP is a narrative document that introduces the PRO requirements of operation and maintenance personnel prior to the opening of the project.

The following will be ensured before operating the new project or alignment in revenue service:

- The system is safe for PRO, including mitigating the unacceptable risk identified in the OHA or acceptable workarounds.
- The Rail Activation Committee or other applicable committee approves.
- Schedules for PRO and operations are completed.
- Operations, maintenance, supervisor, and first responder personnel training are completed.
- Standard and Emergency Operating Procedures (SOPs and EOPs) are updated.
- The operating book of rules is updated.
- Emergency drills with local emergency response agencies are completed.
- PRO activities are completed.
- All rail operations certifiable items are completed/certificate of occupancy is given.

6.3.2 Completed Rule Book and Standard Operating Procedures

The PMOC shall review and confirm that the rulebook and SOPs have been updated, accepted, and distributed to all operations personnel prior to the start of revenue service. The project sponsor shall demonstrate that all Operations and Maintenance (O&M) staff have been trained in the new procedures.

6.3.3 Operator, Maintenance, and Supervisor Staff Training

The PMOC shall determine that the project sponsor has trained their staff to operate and maintain the new transit system. The PMOC should assess the training program to determine if new and updated procedures and rules are provided within the training curriculum and confirm that all training schedules or activities address training for all necessary staff, including supervisors, as applicable. If this has been confirmed by a recent MCC study, the PMOC shall reference the findings of that evaluation.

6.3.4 Emergency Preparedness

The PMOC shall review the Emergency Preparedness Plan and PRO schedule to confirm that emergency preparedness drills and familiarization training activities have been completed and coordinated with the affected community fire departments, police departments, and first responding agencies prior to revenue operations. The documentation of completeness should

include a description of the drill, date, procedures, attendees, and results of the drill. The proceedings should be incorporated into the project sponsor's document control system.

6.3.5 Security System

Implementation of a new transit system will often require additional security staff. The PMOC shall determine whether the project sponsor has increased and trained their security forces proportionate to the added system capacity. If a recent MCC study has confirmed this, the PMOC shall reference the findings of that evaluation.

6.3.6 Public Education and Safety Awareness

Introduction of a new transit system into the community adds an element of risk, especially accidents related to pedestrian/transit vehicle and automobile/transit vehicle collisions. The PMOC shall document that the project sponsor has prepared the community for the implementation of transit, prior to train movements on the new system within a safety outreach plan and a grand opening plan. The outreach activities would typically include outreach to schools, neighborhood associations, and other well-attended community events.

6.3.7 Spare Parts Requirements and Inventory

The PMOC shall review and assess the project sponsor's process to track and maintain spares, spare parts, spare parts inventory, warranties, and O&M manuals.

6.4 Evidence of Management Capacity and Capability

As a confirmation of the readiness to enter service, the PMOC shall assess the MCC, with emphasized focus on operational capacity. This assessment will simply refresh the previous MCC evaluations if these have been completed within one calendar year. The assessment will include a review of the following:

- PMP
- O&M Plan
- Rail/Bus Fleet Management Plans
- Safety and Security Plans, Signed Third-Party Agreements with Railroads, Utilities, other Third Parties
- Quality Management Plan (QMP)

6.4.1 Project Management Plan

The PMOC shall determine that the PMP and subplans are current and demonstrate the readiness to enter service. For example, the PMP should incorporate the updated SSMP and related plans including the RAP/BAP, SSCP, and OHA, and all should be tracked back to the findings and mitigation measures recommended in the refreshed PHA and TVA. Further, the O&M Plan, Rail Fleet Management Plan, and Bus Fleet Management Plan should demonstrate the ability to own and operate the new transit system.

6.4.2 Third-Party Agreements

The PMOC shall determine if the project sponsor has ensured that all third-party agreements are signed and accepted. This will most likely include all environmental agreements, agreements with railroads and other utilities, and all signed memoranda of understanding with the affected local governments.

6.4.3 Quality Management

The PMOC will assess the effectiveness of the QA/QC program as described in the FTA-approved QMP(s). The PMOC shall determine that the quality processes have assured that the project has been constructed as intended by the finalized plans and specifications, including documented design reviews and reconciled changes, evidence of QC, inspections and QA audits conducted during the construction phase. The PMOC will also review to ensure that all SIT and CIL forms have been validated, signed, and included within the project's secured document control system. The PMOC will also review and assess the workarounds and procedures for taking corrective actions of open quality nonconformances that can affect the operations, maintenance, or safety of the project.

7.0 COORDINATION WITH OTHER REVIEWS

Rail Fixed Guideway projects not subject to regulation by the Federal Railroad Administration (FRA) shall be subject to SSOA jurisdiction as specified in the Rail Transit Agency Safety Plan. During the review, the PMOC shall consult the SSOA in its assessment of the project's safety and security management program implementation. SSOA participation in Readiness Review interviews and inspection should also be supported and encouraged.

Where the SSOA conducts a Readiness to Enter Revenue Operations review, the PMOC's review shall, to the extent possible, be coordinated with this work. Other reviews subject to PMOC coordination may include FTA's Safety and Security Readiness Reviews (SSRRs) and FRA inspections. Coordination with other reviews will reduce the amount of time required on the part of the project sponsor addressing auditing requirements, and through information sharing between the PMOC and SSOA, reduce redundant professional hours.

8.0 REPORTS, PAPERS, PRESENTATIONS

The PMOC shall provide the COR/ACOR with a written report, formatted in compliance with OP 01, of their findings, analyses, recommendations, professional opinions, and description of the review activities undertaken, as well as other supporting information.

After the COR/ACOR has transmitted formal acceptance of the report, the PMOC should share the report with the project sponsor. If there are differences of opinion between the PMOC and the project sponsor regarding the PMOC's findings, the COR/ACOR may direct the PMOC to reconcile their findings with the project sponsor and provide the COR/ACOR with a report addendum covering the modifications agreed upon by the project sponsor and PMOC.

When directed by the COR/ACOR, the PMOC shall perform data analysis and develop data models that meet FTA requirements using Microsoft Office products, such as Excel and Word, and use FTA templates when provided.

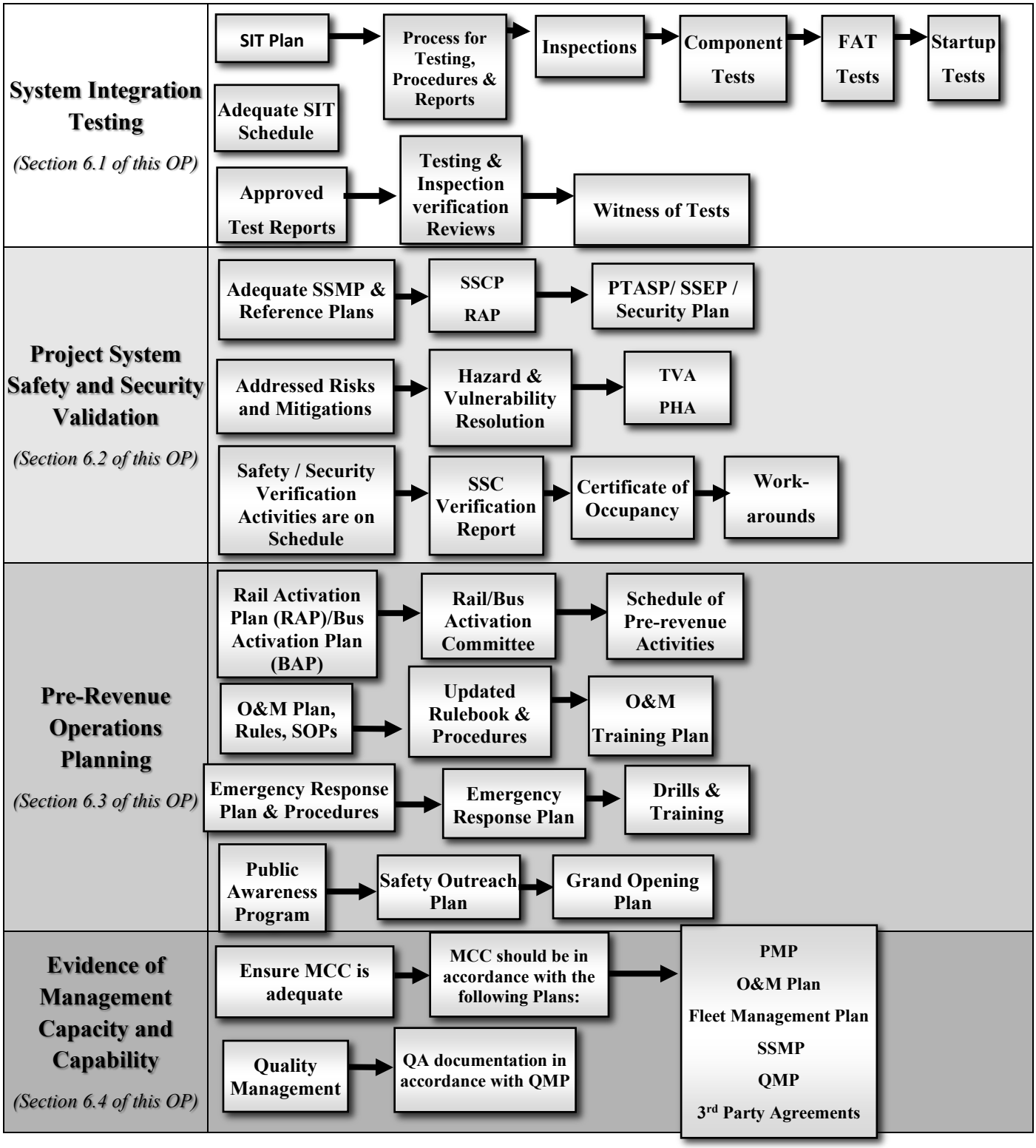
Upon approval by the COR/ACOR, the PMOC may add other software as required, but they should provide the COR/ACOR with documentation and report data when complete.

APPENDIX A: ACCEPTABLE QUALITY LEVEL

	Desired Outcome	Performance Requirement	Checklist	Performance Measure	Acceptable Quality Level	Monitoring Method
1	The Project Management Oversight Contractor (PMOC) shall review and analyze project documents, procedures, and policies to validate the project's readiness to enter service.	**R1a.** The PMOC shall develop and document a process for review and analysis of project documentation that verifies contract compliance and successful testing of all project components and systems to conclude that the project is safe and, to the extent possible, conforms to industry standards, standards of care, and contractual requirements. The process should also identify the riding public and affected community and ensure the project is ready for service.	☐	**M1a.** Review of the process documentation.	**Q1a.** PMOC provides documentation of the process.	**MM1a.** Periodic review by FTA or its agent.
2	The PMOC shall, through review of project documents and testing, form a professional opinion as to whether the project will operate and can be maintained	**R2a.** The PMOC shall perform a review and analysis of the Project and verify that all systems, subsystems, components, equipment, and materials furnished and installed conform to the construction and fabrication contract	☐	**M2a.** PMOC review and opinion as to whether the conformance to contract and safety requirements demonstrates sound management and engineering practices	**Q2a.** Professional opinion as to the conformance of the project to contract and safety requirements.	**MM2a.** Periodic review by FTA or its agent.

	as intended, will operate as an integrated whole, is safe, and is, to the extent possible, in conformance to industry standards, standard of care, and conformance with contractual requirements, for service.	requirements, and that all risks identified in the PHA, TVA and/or OHA have been mitigated to the extent possible in the current design, or that an acceptable workaround has been implemented prior to public use of the system.		and professional experience.		
3	The PMOC shall provide FTA with a written report of their findings, analyses, recommendations, and professional opinions.	**R3.** The PMOC shall present their findings, analyses, recommendations, and professional opinions to FTA and, when so directed, seek to reconcile their findings with the project sponsor to the extent possible. A supplemental report shall be filed describing the results of reconciliation attempts.	☐	**M3.** Review of the PMOC's presentation of findings, analyses, recommendations, and professional opinions by FTA.	**Q3.** Reports and presentations are professional, clear, concise, and well written. The findings and conclusions have been reconciled with other PMOC reports and have been reconciled to the extent possible.	**MM3.** Periodic review by FTA or its agent.

APPENDIX B: SAMPLE ACTIVITY FLOWCHART



APPENDIX C: SAMPLE RAIL ACTIVATION PLAN TABLE OF CONTENTS

1. Introduction
2. Project Background
   a) Project Description
   b) Rail Activation Schedule
3. Rail Activation Committee
   a) Rail Activation Committee Participants and Org Chart
   b) Coordination with Safety Certification Committee
   c) Coordination with Operations Safety Review Committee
   d) Coordination with Operations Change Control Committee
4. Project Resources
   a) Staffing / Budget
      i) Skills Matrix
   b) Hiring Schedule
      i) Job Descriptions
5. System Testing and Acceptance
   a) Applicable SIT Plan Activities
   b) Roles and Responsibilities
   c) Start-up Tests
6. Rulebook, SOPs, and Manuals
   a) Process for Updating Rulebook
   b) Process for Issuing SOPs and Bulletins
   c) Schedule of Rule Revisions
7. Training
   a) Vendor-Supplied Training Manuals
   b) Operations Training
   c) Maintenance Training
   d) Rail / Bus Control Center Training
   e) Supervisor Training
   f) Schedule of Training Activities
8. Safety and Security
   a) Safety Certification / CIL
   b) Safety Certification Verification Report (SCVR)
      i) State Approval of SSCVR
   c) Workarounds
   d) Quality Management
      i) Review of Nonconformances
      ii) Confirmation that CIL Forms are Validated, Signed, and Tracked (in document control system)

e) Inspections and Audits
f) Review and Update of Public Transportation Agency Safety Plan and Security Plan
g) Documentation

9. Emergency Preparedness
   a) NFPA 130 Activities
   b) Familiarization Training and Schedule
   c) Tabletop and Full-Scale Emergency Drills
      i) Drill Scenario, Location, Participating Agencies, and Schedule
      ii) After Action Reports and Tracking Corrective Actions
10. External Coordination
   a) Permits
   b) Coordination with Federal, State, and Local Agencies
11. Rail Operations
   a) Simulated Rail Service
   b) Startup Procedures
   c) Operating Procedures / Schedules
   d) Emergency Operations Procedures (single tracking, bus bridge, etc.)
12. Appendices
   a) Acronyms
   b) Certifiable Items List

APPENDIX D: PRE-REVENUE ASSESSMENT WORKSHEET

OP 54 Readiness Review Worksheet

Date of Review:	**Project Name:**		**Evaluation**				**Readiness Review Rating Legend** • 1 = Poor, Action Required • 2 = Adequate, Comments Provided • 3 = Acceptable, No Comments • N/A = Not Applicable or Not Reviewed
Reference OP 54 Section	**Checklist Item**	**Document Reference**	**1**	**2**	**3**	**N/A**	**Comments**
6.1	**System Integration Testing**	-	-	-	-	-	-
6.1.1	Systems to be Tested						
6.1.2	Plan for Systems/Facilities Integration and Coordination for Testing						
6.1.3	Systems Integration Test Plan (SITP)						
6.1.4	Schedule for Testing						
6.1.5	Test Procedures						
6.1.6	Test Reports						
6.1.7	Completion and Recording						
6.2	**Project System Safety and Security Validation**	-	-	-	-	-	-
6.2.1	Safety and Security Organization						

Date of Review:	**Project Name:**		**Evaluation**				**Readiness Review Rating Legend** • 1 = Poor, Action Required • 2 = Adequate, Comments Provided • 3 = Acceptable, No Comments • N/A = Not Applicable or Not Reviewed
Reference OP 54 Section	**Checklist Item**	**Document Reference**	**1**	**2**	**3**	**N/A**	**Comments**
6.2.2	Review of Safety and Security Planning						
6.2.2a	Public Transportation Agency Safety Plan						
6.2.2b	Safety and Security Management Plan						
6.2.2c	Preliminary Hazard Analysis						
6.2.2d	Threat and Vulnerability Analysis						
6.2.2e	Operation Hazard Analysis						
6.2.2f	Grade Crossing Analysis / Report						
6.2.2g	Safety and Security Certification Plan						
6.2.2h	Certifiable Items Lists						
6.2.2i	Construction Punch Lists						
6.2.3	Review of Risks and Mitigation						
6.3	**Pre-Revenue Operation**	-	-	-	-	-	-
6.3.1	Pre-Revenue Operation Planning						

Date of Review:	**Project Name:**		**Evaluation**				**Readiness Review Rating Legend** • 1 = Poor, Action Required • 2 = Adequate, Comments Provided • 3 = Acceptable, No Comments • N/A = Not Applicable or Not Reviewed
Reference OP 54 Section	**Checklist Item**	**Document Reference**	**1**	**2**	**3**	**N/A**	**Comments**
6.3.2	Completed Rule Book and Standard Operating Procedures						
6.3.3	Operator, Maintenance, and Supervisor Staff Training						
6.3.4	Emergency Preparedness						
6.3.5	Security System						
6.3.6	Public Education and Safety Awareness						
6.3.7	Spare Parts Requirements and Inventory						
6.4	**Management Capacity and Capability**	-	-	-	-	-	-
6.4a	Project Management Plan						
6.4b	O&M Plan						
6.4c	Rail/Bus Fleet Management Plans						
6.4d	Safety and Security Plans, Signed Third-Party Agreements with Railroads, Utilities, other Third Parties						

Date of Review:	**Project Name:**		**Evaluation**				**Readiness Review Rating Legend** • 1 = Poor, Action Required • 2 = Adequate, Comments Provided • 3 = Acceptable, No Comments • N/A = Not Applicable or Not Reviewed
Reference OP 54 Section	**Checklist Item**	**Document Reference**	**1**	**2**	**3**	**N/A**	**Comments**
6.4e	Quality Management Plan (QMP)						
6.4.1	Project Management Plan						
6.4.2	Third-Party Agreements						
6.4.3	Quality Management						
7.0	**Coordination with other reviews**	-	-	-	-	-	-
7.0a	Interviews with SSOA or FRA (if applicable)						
7.0b	Review of external agency readiness reports (if applicable)						
7.0c	Review of OP 22 or OP 24 reports (if applicable)						
Appendix C	Rail Activation Plan/Bus Activation Plan						

APPENDIX E: ACRONYMS

Acronym	Term
ACOR	Alternate Contracting Officer's Representative
ADA	The Americans with Disabilities Act
AGC	Associated General Contractors of America
ATC	Alternative Technical Concepts
AVS	Associate Value Specialist
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor and Statistics
BRF	Beta Range Factor
BY	Base Year
CATEX or CE or CX or Exclusion	Categorical Exclusion
CCIP	Contractor Controlled Insurance Program
CE	Categorical Exclusion
CER	Cost Estimating Relationship
CFR	Code of Federal Regulations
CIG	Capital Investment Grant
CLIN	Contract Line Item Number
CM	Construction Manager

Acronym	Term
CM/GC	Construction Manager/General Contractor
CMAR	Construction Manager at Risk
COR	Contracting Officer's Representative
CPM	Critical Path Method
CPTED	Crime Prevention Through Environmental Design
CR	Constructability Review
CVS	Certified Value Specialists
DB	Design-Build
DBB	Design-Bid-Build
DBE	Disadvantaged Business Enterprise
DBF	Design-Build-Finance
DBFOM	Design-Build-Finance-Operate and Maintain
DBOM	Design-Build-Operate and Maintain
DEIS	Draft Environmental Impact Statement
DF	Designated Function
DHS	Department of Homeland Security
DTS	Department of Transportation Services
EA	Environmental Assessment
EIS	Environmental Impact Statement

Acronym	Term
EMP	Emergency Management Plan
ENR	Engineering News-Record
EPCM	Engineering/Procurement/Construction Management
ESWA	Early Systems Work Agreement
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FFGA	Full Funding Grant Agreement
FHWA	Federal Highway Administration
FLSSC	Fire/Life Safety and Security Committee
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GAO	Government Accountability Office
GC	General Contractor
GC/CM	General Contractor/Construction Manager
GMP	Guaranteed Maximum Price
HAZMAT	Hazardous Materials
IP	Implementation Plan
LONP	Letter of No Prejudice

Acronym	Term
LPA	Locally Preferred Alternative
MBE	Minority Business Enterprise
MCC	Management Capacity and Capability
MDBF	Mean Distance Between Failures
MPO	Metropolitan Planning Organization
NEPA	National Environmental Policy Act
NTE	Not-to-Exceed
NTP	Notice to Proceed
O&M	Operation and Maintenance
OCIP	Owner Controlled Insurance Program
ODCs	Other Direct Costs
OHA	Operational Hazard Analysis
OIG	Office of Inspector General
OMP	Operations and Management Plan
OP	Oversight Procedure
P3	Public Private Partnership
PCMG	Project and Construction Management Guidelines
PD	Project Development
PDM	Project Delivery Method

Acronym	Term
PHA	Preliminary Hazard Analysis
PMO	Project Management Oversight
PMOC	Project Management Oversight Contractor
PMP	Project Management Plan
POP	Project Oversight Plan
PTASP	Public Transportation Agency Safety Plan
QA/QC	Quality Assurance/Quality Control
R&D	Research and Development
RAMP	Real Estate Acquisition Management Plan
RAP	Rail Activation Plan
RCMP	Risk and Contingency Management Plan
RET	Risk Evaluation Tool
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Qualifications
ROD	Record of Decision
ROW	Right-of-Way
RSD	Revenue Service Date
S/DBE	Small/Disadvantaged Business Enterprises

Acronym	Term
SABCE	Stripped and Adjusted Base Cost Estimate
SABS	Stripped and Adjusted Base Schedule
SAVE	Society of American Value Engineers
SCC	Standard Cost Category
SCIL	Safety Certifiable Items List
SGR	State of Good Repair
SIT	System Integration Testing
SITP	Systems Integration Test Plan
SOP	Standard Operating Procedure
SOW	Scope of Work
SSCVR	Safety Certification Verification Report
SSGA	Small Starts Grant Agreement
SSI	Sensitive Security Information
SSMP	Safety and Security Management Plan
STIP	Statewide Transportation Improvement Program
SYGA	Single Year Grant Agreement
TAR	Travel Authorization Request
TBM	Tunnel Boring Machine
TCC	FTA Office of the Chief Counsel

Acronym	Term
TCRP	Transit Cooperative Research Program
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TIP	Transportation Improvement Program
TOD	Transit-Oriented Development
TPE	FTA Office of Planning and Environment
TPM	FTA Office of Program Management
TRB	Transportation Research Board
TSA	Transportation Security Administration
TVA	Threat and Vulnerability Assessment
URA	Uniform Relocation Assistance and Real Property Acquisition Act
U.S.C.	United States Code
VE	Value Engineering
VECP	Value Engineering Change Proposals
WBE	Women Business Enterprise
WBS	Work Breakdown Structure
YOE	Year of Expenditure