



## **Oversight Procedure 34 — Project Schedule Review**

---

### **1.0 PURPOSE**

The purpose of this Oversight Procedure (OP) is to describe the review, analysis, recommended procedures, and reporting requirements that the Federal Transit Administration (FTA) expects from the Project Management Oversight Contractor (PMOC) with regard to the completeness and reliability of the project sponsor's project schedule; to assess the project schedule usefulness as a management tool; and to assess the extent to which the project schedule reflects the project scope, cost, management practices, and method of project delivery.

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**

Competent schedule management is necessary for sound project planning and control of time, cost, and risk. Congress and FTA's good stewardship require that a project sponsor's schedule be reliable. During Project Development (PD) and prior to Entry to Engineering and Full Funding Grant Agreement (FFGA) or Small Starts Grant Agreement (SSGA), as well as at other points in project development as requested by FTA, the PMOC will perform a thorough evaluation of the scope, schedule, and cost to confirm the schedule reliability.

### **3.0 OBJECTIVES**

FTA's objective is to determine whether the project sponsor's schedule management and project schedule are sufficient to plan and control the project time at the programmatic and contract level and complement the management of scope, cost, and risk. This review is applicable to projects using any of the various forms of transportation construction project delivery method.

### **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:

- OP 32C: Project Scope Review
- OP 33: Capital Cost Estimate Review

Additionally, the project schedule review is a key component of:

- OP 40: Risk and Contingency Review
- OP 51: Readiness to Enter Engineering Review
- OP 52: Readiness to Execute FFGA/SSGA
- OP 53: Readiness to Procure Construction Work

## 5.0 PROJECT SPONSOR SUBMITTALS

In advance of performing the project schedule review, the PMOC shall meet with the project sponsor and their staff and consultants to discuss the purpose of the review and obtain information as required, including but not limited to the following:

- Basis of Schedule (see sample format in Appendix B)
- Description of the project control organization, schedule development, and control process and procedures
- Critical Path Method (CPM) specifications or contractual requirements (if available)
- Latest schedules in electronic format (both PDF and native scheduling software)
- Supporting scope and cost information.

## 6.0 SCOPE OF WORK

The PMOC may perform this review during project planning, design, engineering, or construction. FTA may specify the extent of the review and add re-assessments or specialized analyses. The PMOC shall provide a written comparison of the proposed schedule with similar project(s) and analyze the differences. The PMOC shall draw conclusions and provide recommendations based on this comparison. The PMOC's schedule reviews may occur at the following stages:

**Project Development:** A comprehensive project schedule should be developed during PD, including activities associated with the project's proposed delivery method. An overall project schedule, including the anticipated timeline for completing the required project development work within the two-year time frame specified in the Capital Investment Grant (CIG) regulation, should be in place when a project enters PD. The PMOC should review the project schedule and the project sponsor's schedule staffing, capabilities, and processes. An appendix in OP 51 Readiness to Enter Engineering provides criteria for evaluating the completeness, level of detail, and reasonableness of the project schedule at Entry into Engineering.

**Entry into Engineering:** Preparation of an appropriate integrated baseline schedule showing critical project activities, logic flow, and durations, including identification of third party, utility, and critical right-of-way (ROW) agreements is an essential project element as the project approaches this FTA milestone. FTA requires an OP 40 Risk and Contingency Review prior to the project entering the engineering phase. The checklist contained in OP 51 Readiness to Enter Engineering, Appendix B (section 5.0), provides the criteria for evaluation of completeness, level of detail, and reasonableness of the project schedule and schedule-related items. Section 2.4 of the checklist addresses the need for schedule control procedures as part of the project sponsor's Project Management Plan (PMP).

**Reviews during Engineering:** Upon Entry into Engineering, the PMOC will update the schedule review. FTA may request the PMOC to conduct a risk assessment review to support issuance of a Letter of No Prejudice (LONP), a Letter of Intent (LOI), an Early Systems Work Agreement (ESWA), or commitment of the Federal share.

**Review for Award of FFGA/SSGA:** FTA may request that the PMOC update or refresh their schedule review (in addition to project scope, cost, and risk) as part of the evaluation of the project sponsor's readiness to receive an FFGA/SSGA. The PMOC's review for an

FFGA/SSGA must be commensurate with the project sponsor's documents available at the time. The review includes an evaluation of the suitability of the project documents to the project sponsor's project execution and contracting strategy and is applicable for all project delivery methods. Additionally, the PMOC should confirm that the baseline schedule has been used to track progress.

**Reviews during Construction:** FTA may request that the PMOC monitor the project sponsor's compliance with schedule elements of the PMP and its subplans during construction, monitor for risks to the schedule, including float levels, and monitor the project sponsor's organization for appropriate scheduling capacity and capability.

The PMOC shall:

- Assess and evaluate the project sponsor's schedule and their plan for schedule control;
- Consider the adequacy of the project sponsor's project control staff, systems, and software for the size and complexity of the project;
- Validate the usefulness of the schedule as a project management tool;
- Consider the level of definition of the schedule and elements within the schedule for appropriateness to the project phase;
- Identify schedule uncertainties and issues with the project schedule mechanical soundness; and
- Determine fundamental and reasonable soundness.

The PMOC shall review the project sponsor's schedule control, including internal procedures and schedule reviews, and consider the timing and adequacy of such reviews to determine if the schedule is sufficiently developed, properly maintained, and consistent with the progress of the project. The PMOC shall also review the project sponsor's processes and procedures for developing, monitoring, and changing the schedule, including approvals if a significant change in the Revenue Service Date (RSD) is required. Additionally, the PMOC determines if the project sponsor has a formalized configuration management process that controls the baseline schedule and any re-baselining controls for schedule revisions.

The PMOC shall provide recommendations to improve the development and implementation of schedule management and proactively help the project sponsor solve schedule problems. In a report, the PMOC shall document its findings, professional opinions, and recommendations.

The PMOC shall:

1. Evaluate the project sponsor's development and implementation of the following schedule management components:
  - a) Project Control Organizational Structure (Capacity and Capability) – Includes the project sponsor's staff combined with the potential blending of other consultant project controls staff for all project phases;
  - b) Project control systems, tools, and software used;
  - c) Review of project control plans, procedures, and schedule management contractual requirements; and

- d) Review of the work breakdown structure (WBS) to assure all critical project scope components are included in the WBS.
2. Conduct a technical schedule review.
- a) Assure consistency with scope and WBS.
  - b) Soundness check: Mechanically correct and fundamentally and reasonably sound:
    - i) WBS is properly structured and consistent with scope and cost.
    - ii) Proper calendars are incorporated into the schedule.
    - iii) Complete list of activities which captures the scope.
    - iv) Proper durations have been applied to activities, along with their proper calendars.
    - v) Complete logic network has been developed, including proper logic ties and minimal use of lags.
    - vi) Float values and late start and finish dates are reasonable and make intuitive sense.
    - vii) Critical path is identifiable, logical, and reasonable.
    - viii) Secondary critical paths are identifiable, logical, and reasonable.
    - ix) Costs are applied to the schedule, incorporating the SCC cost accounts.
3. Assess readiness to conduct a schedule risk analysis as defined in OP 40 Risk and Contingency Review, if applicable.

### **6.1 Schedule Management Review**

**Organization:** The PMOC shall review the project sponsor's organization chart and personnel with reference to Section 3 of the appendix checklist found in OP 51 Readiness to Enter Engineering. Ideally, the project sponsor organization includes a project controls department which coordinates management of primary project control functions such as budget/funds management, cost estimating, cost control, document management, risk management, and change control (configuration management). The review should concentrate on the current schedule management organization and how it functions with project control positions within the engineering, real estate acquisition and relocation, program, construction, and management consultant teams.

- (a) Project management capacity and capability – Has the project controls staff demonstrated capacity and capability during the project schedule development and implementation? How will the project scheduling staff blend in with the engineering and construction management organization and staffing? Does the project sponsor's scheduling team have the experience and qualifications to manage the proposed program?

**Systems, tools, and software:** The PMOC shall review the project sponsor's project control systems (PCS) with reference to Sections 2.4 and 5.7 of the OP 51 checklist, including the use of tools, risk analysis, and scheduling software suitable for the project scope, magnitude, and complexity. The project sponsor must be able to demonstrate successful development and implementation of their systems, tools, and software and also describe how their system will be shared with other primary team members and consultants on the project.

- (a) Schedule format – Is the schedule format consistent with relevant, identifiable industry or engineering practices?

- (b) Does the project sponsor’s project scheduling software and IT infrastructure have the capabilities and scalability to manage the project and the consultants, suppliers, and contractors?
- (c) Describe the control methods used by the project sponsor.
- (d) Are the project sponsor schedule update procedures during project development, engineering, and construction phases commensurate with the challenges of the project?
- (e) Describe how the project sponsor incorporates change control (scope, schedule, and budget) into the schedule management process.
- (f) Has the project sponsor incorporated claims avoidance techniques into their schedule management process? How have they developed a dispute resolution, peer review, change control board, time impact analysis, or claims mitigation process?

**Project control plans, procedures, and contractual requirements:** The project sponsor should develop and implement the necessary plans and procedures which describe how their PCS, tools, and software are to be used during the project, including performance measurement, reporting, and control measures. The project sponsor must develop CPM schedule specifications, general requirements, and special provisions in coordination with its own PCS, which address the schedule management standards and requirements necessary to develop “contract” schedules required of major suppliers and vendors (rolling stock and fare collection), engineering consultants, and construction contractors.

## **6.2 Technical Review**

The schedule shall be sufficiently developed in detail to determine the validity of the project critical path to revenue service. The project schedule level of detail should be commensurate with the level of detail depicted in the current project phase scoping documents and drawings. Likewise, the schedule review effort should also be commensurate with the current project phase and schedule level of detail. Project schedules developed during the project development and engineering phases may contain summary level representation for long lead procurement items, bid and award, construction and systems integration, startup and testing, and contract closeout tasks; therefore, some of the schedule review topics below may not be applicable as noted.

The following section describes the expected project schedule level of detail as it evolves through each of the following project phases under the standard Design-Bid-Build project execution process.

- **Project development phase:** The schedule must have detailed entitlement, planning, and environmental tasks associated with the National Environmental Policy Act (NEPA) process, public involvement, FTA requirements, and roadmap to support project sponsor request to enter the engineering phase. The schedule should include appropriate detail for engineering phase tasks and milestones but use summary tasks that include phasing and contract packaging for subsequent construction phase work. Such criteria apply to all project delivery methods. The Basis of Schedule should clearly document all schedule assumptions.

- **Engineering phase:** The schedule should include continuation of planning phase tasks plus engineering phase tasks, value engineering, third party agreements, utility provider coordination, initial development of real estate acquisition planning, permits, agreements, and approvals, FTA requirements, and roadmap to support project sponsor request to enter the FFGA phase. Engineering, procurement, bid and award, construction, system integration and startup and testing, and contract closeout tasks should be summary in nature but with enough detail to identify interface points among tasks and phases, with justification for estimated durations and sequences. The Basis of Schedule should clearly document all schedule assumptions and increase in detail and succinctly match the assumptions indicated in the Basis of Estimate for the project budget.
- **Full Funding Grant Agreement or Small Starts Grant Agreement:** The schedule should include continuation of engineering phase tasks plus construction phase, long-lead procurement items, contract packaging strategies, contract delivery method strategies (e.g., DB, DBFOM, DBB, etc.), safety and security, risk assessment tasks, PMP and sub-plan development and review, and other FTA requirements to support FFGA/SSGA application and entry into construction, Design-Build, or LONP requests. The project sponsor's schedule should also include expanded detail on third party agreements, real estate acquisition activities, utility relocations, permits, and other agreements and approvals.

For the balance of the work, the schedule should include the following major characteristics, no matter the project sponsor's procurement strategy.

### **Pre-Award Authority and Procurement of Long Lead Material and Equipment**

Expanded activity logic and detail for procurement items, bid and award, and proposed construction contract tasks should include the optimization of crew efficiencies and economies of scale in accordance with the assumptions documented in the Basis of Estimate and Basis of Schedule. Proposed construction tasks should also include major summary for systems integration including traction power, train control, communications, fare collection, vehicle acceptance and testing, commissioning of facilities, startup and testing, and pre-revenue service operations and training.

### **Bid and Award**

This category includes tasks representing applicable contract delivery methods (e.g., DB, DBB, DBFOM, etc.) chosen for professional services, material, and equipment procurements, construction contracting, startup and testing, operation, and maintenance, if applicable.

### **Construction, Startup, & Testing**

At a minimum, these tasks should represent the project contract packaging plan, contract delivery methods, and contract interface points for construction, testing, and startup activities. Schedule detail can be summary in nature during the engineering phase but must be more

detailed during the final design phase for DBB, and very detailed for DB contract delivery methods.

### **Contract Closeout**

The project schedule should include summary tasks that adequately represent contract closeout activity for tasks such as administrative closeout activities for all contracts, closeout and storage of all records, and transfer of warranties, manuals, and training.

The technical review should be conducted in sequence with the mechanical soundness check and the fundamental and reasonable soundness check. Note the technical review level of effort should be commensurate with the current project phase in which the project schedule is developed as some review topics (construction-related) may not yet be applicable.

1. **Mechanical soundness check:**

- a) **Basis of Schedule documentation:** Review and verify adequate documentation of all assumptions used to develop the project schedule, including justification of work periods and shifts, contract packaging, contract delivery methods, economies of scale, production factors, and contingencies used to justify all activity durations.
- b) **Schedule breakdown structure (SBS):** Ensure SBS is a taxonomic description of the master program schedule and all sub-tier schedules that comprise or roll up to the master program schedule. Such schedules may include real estate acquisition, procurement, General Engineering Consultant (GEC) schedules, project manager/construction manager schedules, construction engineering & inspection (CE&I) schedules, rolling stock manufacturing and fare collection vendor schedules, and construction contractor schedules.
- c) **Hierarchical structure:** Describe the project WBS, activity coding, and sequence of project phasing. Describe how the project phasing and components can be organized, sorted by level of detail using the file layout structure, hammers, or level of effort tasks.
- d) **FTA SCC:** Review the schedule to ensure that it can be grouped and summarized according to FTA SCC codes.
- e) **Calendars:** Explain the schedule calendars and how they are applied to work tasks. Are calendars appropriately defined and utilized, including allowances for seasonal weather variations? Refer to Exhibit C “Example Calendar Description.”
- f) **Resource loading:** Characterize the extent to which the schedule has been resource loaded.
  - i) Do quantities and costs as defined in the cost estimate match the resource/costs assigned to the activities in the schedule?
  - ii) Explain the application of material, equipment, and labor resource allocation applied to schedule tasks.
  - iii) Have labor and material availability been factored into construction durations?
- g) **Cost loading:** Characterize the extent to which the schedule has been cost loaded.

- i) Do contract and project component subtotal amounts match the project budget estimate subcomponents and total?
  - ii) Can the schedule cost code structure be organized and sorted into SCC and proposed contractor progress payment line items?
  - iii) Describe how the project sponsor will use cost loading during the project execution phase.
  - h) **Software settings:** The project sponsor procedures and contractual requirements must address which scheduling software settings shall be used for all scheduling parties as a claim avoidance technique and schedule management standardization best practice.
  - i) **Schedule File Log:** Is the schedule mechanically correct, complete, and free of material inaccuracies or incomplete information? Generate and review a Schedule File Log within the scheduling software as a quality control check to verify use of milestones and constraints, errors and warnings within schedule logic and activity relationship connections, existence of open-ended activities, poor schedule maintenance, and out-of-sequence progressing for progress update schedules.
  - j) **Critical path:** A review check to verify the existence of a discernible critical path extending the entirety from the start to completion activities. The critical path analysis is performed during the fundamental soundness step below.
  - k) **Updated regularly:** Verify the schedule update interval (e.g., monthly) and the date of the last update (i.e., data date or progress date).
2. Fundamental and reasonable soundness check:
- a) Characterize the schedule quality and detail.
  - b) Does the schedule adequately represent the project scope of work, including the approved environmental documents?
  - c) Is the schedule sufficiently developed to determine the validity, stability, and reasonableness of the critical path? Are near critical paths easily identifiable and reasonable in terms of their logic and proximity to the critical path?
  - d) Durations:
    - i) Review and evaluate the justification of schedule activity durations contained in the Basis of Schedule. Are the activity original durations reasonable, given quantities of work, local conditions, available resources, and realistic and achievable expectations?
    - ii) Does the schedule include adequate time and appropriate sequencing for:
      - (1) FTA review and approval cycles for:
        - (a) Environmental documents?
        - (b) Request to Enter Engineering?
        - (c) FFGA/SSGA Application and execution?
        - (d) Potential LONP requests?
        - (e) Risk Assessments?
        - (f) PMP and sub-plan reviews?
        - (g) Reviews by applicable local, state, and Federal jurisdictions and third parties?



- (2) Agreements associated with real estate acquisition, utility providers, railroad operators, and other interagency agreements?
- (3) Funding time frames or milestones for FTA and non-FTA sources?
- iii) How were the durations determined? Does the Basis of Schedule indicate what percent of each activity's duration contains built-in patent contingency?
- iv) Are the activity durations overly optimistic, aggressive, or conservative?
- v) Are durations sufficient during project development and the engineering phases and continuing into subsequent design phases?
- vi) Are durations sufficient for professional services, material and equipment procurement, and construction contractor procurements (DB, DBB, DBFOM, etc.)?
- vii) For summary schedules typically developed prior to the engineering phase, are phase durations reasonable and adequately justified with supportable backup documentation?
- viii) For engineering phase schedules containing detailed construction tasks, did the project sponsor develop contract time determination (CTD) schedules to derive contract durations for incorporation into contractual documents?
- e) Schedule sequencing:
  - i) Does the schedule follow an expected work sequence and are tasks logically sequenced?
  - ii) Does the sequence include consideration for opportunities to optimize economies of scale, maximize crew production, optimize equipment utilization, and perform concurrent work activity?
  - iii) Can similar work activity be accomplished with available labor and materials?
  - iv) Does sequencing account for temporary construction, site access and logistics, and physical construction constraints?
  - v) Is real estate acquisition properly incorporated into engineering activities and connected to phase construction segments, contracts, or relevant contract package phasing to efficiently use resources?
  - vi) Are long-lead material and equipment procurement adequately represented?
  - vii) Is the use of constraints justified and reasonable? The use of constraints should be kept to a minimum and should be completely removed when the schedule is used to conduct a schedule risk analysis.
  - viii) Does the critical path run through a logical and reasonable sequence of activities?
  - ix) Are the major milestones achievable and logically sequenced?
- f) Schedule contingency: Explain the exposed and hidden (patent and latent) contingency in the schedule and how well it is documented in the Basis of Schedule.
  - i) Describe the PMOC's approach to identifying latent contingency if the project sponsor did not properly document their assumptions in the Basis of Schedule.

- ii) Do built-in contingencies allow for potential delays, including interagency, utility relocation, civil, architectural, and systems work, project sponsor operations and maintenance mobilization, and integrated pre-revenue testing?
- 3. PMOC check:  
The PMOC should check if all activities have been updated to the data date or progress date.
- 4. Schedule contingency:  
Per the description of OP 40 Risk and Contingency Review, section 6.5.2, Contingency Drawdown Review, and Appendix M, Contingency Drawdown Guidelines, perform a review of the schedule contingency to ensure that appropriate hold points are included, sufficient contingency time is in the schedule commensurate with the stage of project development, and a drawdown curve has been prepared using both forward pass and step-back analysis. Also, ensure that the schedule itself is fully coordinate with the project sponsor's plan.
- 5. Readiness to perform OP 40 Schedule Risk Analysis:  
During the project, the FTA may direct the PMOC to conduct or refresh a risk assessment per OP 40, which specifies cost and schedule risk analyses. In order to perform an OP 40 schedule risk analysis, the PMOC must first review or characterize the project schedule (via OP 34) and determine if adjustments must be made. Most importantly, like the project cost estimate, the project schedule must be completely stripped of all contingencies (patent and latent). Secondly, the project schedule must be stripped of all constraint dates and types. Once all contingencies have been identified and documented during the technical review, all contingencies must be removed from the project schedule. Removal of contingency and constraints can be performed on the project schedule or by using a separate copy of the project schedule in order to maintain the original project schedule.

## **7.0 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**

---

Placeholder.



**APPENDIX B: SAMPLE FORMAT – BASIS OF SCHEDULE**

---

(These should be tailored to the project; items shown below are for example.)

Schedule Assumptions	Durations
<b>1. Project Development</b>	
NEPA	
Design package, cost estimate, schedule	
Project Management Plan (PMP) and all sub-plans	
Readiness review	
Financial review	
DEIS approval	
FEIS	
Record of Decision (ROD)	
Agency request __ months from completion of __% design to 1st submittal to FTA FTA review and approval of final EIS for publication estimated at __ months Publish date to issuance of ROD set at __ calendar days Engineering phase Value Engineering (VE) when applicable (within __ months of start of engineering)	
<b>2. Engineering<sup>1</sup></b>	
If Design-Bid-Build:	
Engineering consultant packaging and procurement	
Engineering to 30% and required reviews and approvals	
Engineering to 60% and required reviews and approvals	
Engineering to 90% and required reviews and approvals	
Engineering to 100% and required reviews and approvals	
If Design-Build (or other alternate delivery method):	
Engineering to Basis of Design / Build requirement and required reviews and approvals	

---

<sup>1</sup> Upon FTA’s approval to enter Engineering, pre-award authority is extended to project sponsors to incur costs for engineering work.

**TPM-20 Office of Capital Project Management  
Project Management Oversight**

Engineering and procurement of owner-furnished equipment and systems	
Permits and regulatory reviews and approvals	
Design package, cost estimate, schedule	
VE when applicable	
PMP and all sub-plans	
Risk assessment ( ___ month duration)	
To meet schedule risk assessment shown as overlapping completion of engineering by ___ weeks	
Inter-governmental and third-party agreements Real estate acquisition Utility work Construction packages Delivery methods Readiness review	
Financial capacity assessment by Financial Management Oversight Contractor (FMOC)	
FTA approval to enter Full Funding Grant Agreement (FFGA) ( ___ month duration)	
Submittal of FFGA application concurrent with latest of completion of VE, risk, and ROD	
FFGA/Small Starts Grant Agreement (SSGA) approval by FTA shown at ___ months after submittal of application	
<b>3. Construction Phase Procurement to Notice to Proceed<sup>2</sup></b>	
Permitting and regulatory approvals (including seasonal windows)	
Bid and award processes	
Construction package with cost estimate and schedule	
FFGA/SSGA award	
Utility Relocation and Real Estate Acquisition Plans finalized	
Letter of No Prejudice (LONP) <sup>3</sup>	

<sup>2</sup> FTA’s FFGA/SSGA approval can occur either during final design or afterward, depending on the project sponsor’s contract execution strategy, but is necessary to incur costs for construction and utility relocations.

<sup>3</sup> An LONP is an authorization by FTA that allows project sponsors to incur costs for certain

**TPM-20 Office of Capital Project Management  
Project Management Oversight**

Completion of 100 percent bid documents	
<b>4. Bid and award of construction packages</b>	
Bid package A, B, C, etc.	
Prepare bid documents, issue bid documents	
Request for Proposal and negotiations concurrent with FTA review of FFGA/SSGA application	
<b>5. Construction</b>	
Construction Section A (__ month duration)	
Construction Section B (__ month duration)	
Systems (__ month duration)	
Systems for Section A finishes ___ months after _____	
Station structure architecture, mechanical, electrical, plumbing, signage (__ month duration)	
Completes _____ after Section A	
Safety certification and integrated testing (__ month duration)	
Completes _____ after Section A	
<b>6. Start-up/operator training/simulated revenue</b>	
<b>7. Opening/revenue service date</b>	

---

specified project activities without losing eligibility for future FTA grant assistance. The project sponsor must meet all Federal requirements prior to incurring costs covered by the specific LONP to be reimbursed if and when FTA awards the project a construction grant agreement. LONP is a discretionary form of pre-award authority, in other words, it can apply to project activities that are not covered by automatic pre-award authority.



**APPENDIX C: SAMPLE CALENDAR DESCRIPTION AND LIST**

There are two predominant calendars in use. Most of the physical construction activities are based on a five-day work week with non-workdays for holidays and weather delays. The design and other activities are on a calendar that is based on a five-day work week with non-workdays for holidays. Additional calendars are used in the schedule for other specific types of activities. Following is a listing of all the calendars and the activity usage of each.

<b>Calendar Name</b>	<b>Number of Activities Assigned</b>	<b>Number of Activities on Critical Path/ Total Duration</b>	<b>Number of non-critical activities with less than 30 days contingency /avg. contingency</b>
Construction 5-day calendar with union holidays and 30 weather days	2649 activities		
Engineering/procurement/permit calendar	1555 activities		
DTP/DTE business days calendar	446 activities		
Standard 5-day work week calendar	100 activities		
Winter outage calendar with 30 weather days	21 activities		
5-day week, 2-shift calendar	10 tunneling activities		
7-day work week calendar Test/commission and yard modification calendar Pre-revenue service calendar Start revenue service calendar	9 activities		
54-hour outage calendar	5 activities		
Weekend outage calendar with 30 weather days	4 activities		
NATM tunneling calendar with union holidays and 30 weather days	2 activities		
<b>TOTAL</b>	<b>4801 activities</b>		



**APPENDIX D: ACRONYMS**

---

<b>Acronym</b>	<b>Term</b>
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



**TPM-20 Office of Capital Project Management  
Project Management Oversight**

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

**TPM-20 Office of Capital Project Management  
Project Management Oversight**

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

**TPM-20 Office of Capital Project Management  
Project Management Oversight**

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

**TPM-20 Office of Capital Project Management  
Project Management Oversight**

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

**TPM-20 Office of Capital Project Management  
Project Management Oversight**

<b>Acronym</b>	<b>Term</b>
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

**TPM-20 Office of Capital Project Management  
Project Management Oversight**

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