Design Operations Manual

2026 Edition

Pennsylvania Turnpike Commission

PENNA TURN PIKE	**DOCUMENT REVISION HISTORY**	**VERSION NUMBER:** 2026 **PUBLISHED DATE**: 01-23-2026
DOCUMENT: DESIGN OPERATIONS MANUAL (DOM)	**RESPONSIBLE DEPARTMENT:** ENGINEERING	

A. PURPOSE:

To identify the sections changed in the previous version of the design consistency guidelines and to provide the effective version number of that previous document.

Note: Linked resources in the DOM are updated on an as needed basis and are not listed below.

B. REVISIONS:

- **Throughout the manual:**
  - Changed references from PA Turnpike Contracts Administration Department (CAD) to PA Turnpike Professional Services Procurement Department (PSDP).
- **ii. Revision Process**
  - Clarified DOM revision process (Pg. 5).
- **A.02 Existing Information**
  - Added common maintenance issues to the list of existing reports and information (Pg. 9).
- **B.03 Contract Management**
  - Revised Diverse Business/Diverse Business Enterprise (DB/DBE) Monitoring and Reporting section to reflect changes based on the U.S. Department of Transportation (DOT)'s Interim Final Rule (Pg. 32).
  - Updated consultant overhead and labor rate information (Pg. 32-33).
  - Added information for specific rate of compensation work orders (Pg. 33).
- **C.02 Public Coordination**
  - Added information on Public Engagement Resources webpage (Pg. 40-43).
- **C.05 Environmental Items**
  - Replaced Tracking Chart with Environmental Project Status Form (Pg. 50).
  - Added PennDOT Pub 584 and PA DEP Chapter 102 Road Maintenance Activities FAQ to Related Information section (Pg. 50).
- **C.08 Geotechnical Design**
  - Updated the list of potential submission (Pg. 54).

  - Updated the Drilling Contract section (Pg. 54-55).
- **C.11 PennDOT Coordination**
  - Clarified Highway Occupancy Permits (HOPs) information (Pg. 57-58).
- **D.06 Geotechnical Design**
  - Updated the list of potential submissions (Pg. 72).
  - Added a new Drilling Contract section (Pg. 73).
- **D.09 Environmental Items**
  - Added information about establishing a MOU with the US Army Corps of Engineers (USACE) (Pg. 81-82).
  - Added a new Tree Clearing section and Tree Felling Work Checklist (Pg. 83).
  - Replaced Tracking Chart with Environmental Project Status Form (Pg. 83).
- **D.12 PennDOT Coordination**
  - Clarified Highway Occupancy Permits (HOPs) information (Pg. 85-86).
- **D.14 Completion Date Meeting**
  - Clarified various forms, documents, and guidance associated with the Completion Date Meeting (Pg. 87-89).
- **D.17 Final Deliverables**
  - Moved Asset Breakdown Form information to D.14 Completion Date Meeting (Pg. 90).
- **D.18 Consultant Evaluation**
  - Updated process for completing consultant evaluations (Pg. 92-93).
- **E.02 Pre-Bid Activities**
  - Updated information related to submission of questions by business partners (Pg. 95).
- **E.03 Issue Addenda**
  - Updated information related to submission of questions by business partners and issuing addenda (Pg. 97).
- **F.01 Errors and Emissions**
  - Revised to encompass all project work, including but not limited to design (Pg. 100-102).
- **H.04 Asset in Service**
  - Updated guidance related to the Asset Breakdown Form (Pg. 107-108).
- **Appendix**
  - Eliminated appendices and provided links to relevant resources throughout the document.
  - Moved Surplus Excavation Guide (previously S.09) from DOM to DCG Appendix M.

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Preface

i. Introduction and Definition of Terms

A. Introduction

The Design Operations Manual (DOM) is a compilation of Pennsylvania Turnpike Commission (PA Turnpike) policies, procedures, guidelines, and checklists relating to the administration and management of design contracts. These guidelines are meant to serve as general procedures for PA Turnpike projects. Each project is unique, as is the way it will be managed, and flexibility is expected of all involved players. However, the guidelines can provide a general understanding of the roles and responsibilities of those who will be involved.

The manual addresses the major work tasks performed by the PA Turnpike Design Project Manager (PM) throughout the life cycle of a project, from Initiation through Construction. This document is not meant to be an all-inclusive list of the PA Turnpike PM's responsibilities. It is meant to summarize PA Turnpike personnel involvement during the life of the design phase.

B. Roles and Responsibilities

For projects on which a Design Manager (DM) is under contract, the PA Turnpike PM may delegate to the DM many of the work tasks described in this manual and as defined in the DM's scope of work. Where applicable, tasks that may be the responsibility of the PA Turnpike PM or DM will be identified.

The PA Turnpike PM or DM directs the design efforts and provides the necessary coordination among the Design Consultant (DC), the PA Turnpike, the Pennsylvania Department of Transportation (PennDOT), and the necessary agencies, utility companies, and other entities for the project.

On projects that employ a DM, the DM typically coordinates project issues with the PA Turnpike through the PA Turnpike's designated PM, except for cases in which the PM suggests otherwise.

The manual is written assuming a DC will perform the design services for the project. All references to the DC regarding projects designed in-house would apply to the PA Turnpike design staff assigned to the project.

C. Organization and Maintenance of the DOM

The DOM is organized to match the process and progression of a design project and is divided into the following parts:

Part A – Project Initiation
Part B – Acquire Resources
Part C – Preliminary Design
Part D – Final Design
Part E – Bid Letting
Part F – Design Errors and Omissions
Part G – Design Project Closeout
Part H – Construction

The eight parts are subdivided into sections in the Table of Contents.

To provide clear and concise direction, this document makes references to standard PA Turnpike documents and publications. Where applicable, for information or clarification, samples of documents may be included in the Appendix and are noted as such.

Refer to Preface Section ii for the DOM Revision Process.

D. Definition of Terms

CADD – Computer Aided Design & Drafting

CM – PA Turnpike Category Manager responsible for managing a specific category of the PA Turnpike Capital Plan.

CMSM – Contract Management Services Manager

Commission – Pennsylvania Turnpike Commission (PA Turnpike)

COM – PA Turnpike's Construction Operations Manual

COO – Chief Operating Officer

CM/CI – Construction Management / Construction Inspection

CRM – Customer Relationship Management

DB/DBE-Diverse Business/Diverse Business Enterprise

DC - Design Consultant

DCGs – PA Turnpike's Design Consistency Guidelines

DEP – Department of Environmental Protection

DM – Design Manager – A Consultant serving as an extension of PA Turnpike staff managing design firms to efficiently produce quality designs, plans, specifications, and cost estimates.

EAL – Engineering Automation Liaison

EBS – Electronic Bidding System

ECMS – PennDOT's Engineering and Construction Management System

EM – Engineering Manager

EPA – Environmental Protection Agency

E&S – Erosion & Sediment Pollution Control

FAR – Federal Acquisition Regulation

FY – Fiscal Year - are labeled with the year in which they end. (The PA Turnpike fiscal year runs from June 1 to May 31.)

FOMC – PA Turnpike's Fiber, Operations, Maintenance, and Commercialization vendor

GCE – General Consulting Engineer

ITS – Intelligent Transportation System - include Dynamic Message Signs (DMS), Closed Circuit Televisions (CCTV), Roadway Weather Information Systems (RWIS), Truck Rollover Warning System (TRWS), Curve Warning system, Smart Work Zones (SWZ) or detection.

L&I –Labor & Industry

MPL –Minimum Participation Level

MPT – Maintenance and Protection of Traffic

NES – Narrative Evaluation Summaries

NOITE – Notice of Intent to Enter

NPDES – National Pollutant Discharge Elimination System

NPM – Negotiation Position Memorandum

PCDS – Project Collaboration and Documentation System for working with external and internal partners to communicate, transport, share, file, and maintain project documentation, from initiation to close of a project, including project archiving.

PCSM – Post-Construction Stormwater Management

PennDOT – Pennsylvania Department of Transportation

PIM-CAD – Project Information Modeling and Computer Aided Design

Project – Any active PA Turnpike project listed on the Capital Plan and assigned to a project manager

PS&E – Plans, Specifications, and Estimate

PSDP – PA Turnpike Professional Services Procurement Department

PSQMP – Project Specific Quality Management Plan

PSPC – Professional Services Procurement Committee

PM – PA Turnpike Design Project Manager assigned to the project.

PxP – Project Execution Plan

Risk Management – Risk management is the cultures, processes, and structures that are directed towards the effective management of potential opportunities and threats.

Risk Management Register – A risk register is an essential tool for managing risks and generally takes the form of a spreadsheet, which provides executives and staff an at-a glance summation of the risks and what is being done about them. The register indicates the objectives, risks, risk rankings, and risk treatment/control.

RPCO – Regional Permit Coordination Office

SAP – PA Turnpike software platform system for administering and managing organizational operations.

SCM – Stormwater Control Measure

SRM – Supplier Relationship Management-PA Turnpike Enterprise Portal website for administering and managing procurement activities.

SWZ – Smart Work Zone

TAM – Transportation Asset Management

TET – Technical Evaluation Team

TMP – Transportation Management Plan

TPMS – Truck Parking Management System

UL – Utility Liaison

UMA – PA Turnpike's Utility Management Application

USACE – United States Army Corps of Engineers

Utilities – Inclusive of all utilities within the project boundaries, including fiber network infrastructure

ii. Revision Process

A. Introduction

The DOM is a dynamic document that may require periodic revisions due to changes in processes or procedures, organizational structure, and/or technological advancements. The DOM will be reviewed on an annual basis to determine if changes and updates are necessary. However, the volume and criticality of updates may not always warrant a revision. At times, revisions are minimal, and the people affected by changes have been notified by other means. As a result, revisions will be released as warranted by the volume and criticality of changes.

B. Revision Process

Requests from DCs or DMs shall be submitted to a PA Turnpike PM. Internal requests from PA Turnpike staff should be submitted to the General Consulting Engineer (GCE). Requests will be reviewed and evaluated to determine whether the request warrants a change in the DOM. Changes will typically be incorporated as part of the annual update process, however critical updates will be released on an as needed basis.

Part A – Project Initiation

A.01 Project Set-Up

A. Project Information Updates

The project is created in SAP by the PA Turnpike Planning Unit. The project information in SAP is generic when first created. The PA Turnpike Project Manager (PM) is assigned to a project by his or her supervisor and/or Category Manager (CM). The PA Turnpike PM needs to update in Project Systems (CJ20N) the following items in the already-created project:

- Update long text under the top level WBS element to include a more detailed project description and an asset breakdown list with preliminary percentages. At final design, the asset breakdown percentages are revised. The PA Turnpike Accounting Department uses this information to determine which assets should be depreciated and when to start the depreciation cycle.
- Update all Level 2 WBS Person Responsible (Pers.Resp.No.) to the PA Turnpike PM.
- Verify that all the information is entered correctly into the Responsibility and General fields for each Level 2 WBS Element.

See Reference Lesson 3 of the LOPS-02 Manual for more information.

As such, many of the items in this section will reference the LOPS-02 Manual lesson related to the item. Within the LOPS-02 lessons are procedure references to Quick Reference Cards (QRC) and/or End User Procedures (EUP).

B. Project Capital Planning

The PA Turnpike has a 10-year Capital Plan that is adopted at the beginning of each Fiscal Year. The PA Turnpike fiscal year runs from June 1 to May 31 of the next calendar year. By adopting the Capital Plan, the Commissioners grant approval to advertise for consultants, contractors, and others qualified to provide professional services to advance all phases of projects within the first two years of the plan. PA Turnpike PMs are asked to provide planning values for each WBS Element being planned, based on the most recent cost estimates and/or cost drawdown, to the CM for review. Planning values need to be broken down into months for the current fiscal year values and by year for any subsequent fiscal years. The CM reviews and approves each individual project, along with overall category values, and then forwards all planned costs to the Program Manager. Then the Program Manager forwards to the PA Turnpike Planning Unit to be inputted in SAP. See Reference Lesson 3 of the LOPS-02 Manual for more detailed information.

C. Project Collaboration

When a PA Turnpike PM is assigned a project, a determination is made as to whether or not the project will use the PCDS. If so, then the PA Turnpike PM completes a Project Start-Up Form and submits it to the PA Turnpike Planning Unit. The PA Turnpike Planning Unit creates the new project in the PCDS.

For some smaller consultant design projects and in-house design projects, project files will be kept on the PA Turnpike network within the Engineering Drive, using the same file structure used in the PCDS.

D. Project Schedule (Preliminary)

The PA Turnpike PM after coordination with the DC and/or DM, develops and enters the forecast dates for the project in the Contract Status Database for Design and Construction. These dates should be updated regularly as needed to support the 12 Quarter Planning schedule in the Contract Status Database.

E. Related Information

- Part B – Acquire Resources, Section 3 – Contract Management
- Part C – Preliminary Design, Section 1 – Initiation
- Part D – Final Design, Section 1 - Initiation
- Project Systems Complex Project Lifecycle Processing – LOPS-02 Manual
- Project Start-Up Form

A.02 Existing Information

A. Introduction

The PA Turnpike Project Manager (PM) assembles the existing information and proposed design information for transmission to the Design Consultant (DC) for review, information, and use. If the project is using a PCDS for DC collaboration, the information gathered is placed in the appropriate For Information Only (FIO) folder within the Roadway, Structures and/or Utilities folder under the project file structure.

The information to be assembled may include the following:

- As-Built Information
- Existing Reports and Information
- Existing Electronic Design Files
- Existing Labor & Industry (L&I) Building Permits

B. As-Built Information

1. *As-Built Drawings:*

See the Engineering Automation Liaison (EAL) for files of the original construction plans, including all rehabilitation plans.

2. *Pavement Section:*

See the Roadway Engineering Unit Liaison for the Pavement Condition Rating Sheet. Confirm that the pavement section matches the As-Built Drawings.

3. *Right-of-Way (ROW) Information:*

See the Design Services Unit Liaison for information on the original ROW acquisition and all subsequent ROW acquisitions.

C. Existing Reports and Information

1. *Bridge Log and Inspection Reports:*

See the Bridge Maintenance Unit Liaison for existing Bridge Log and Inspection Reports.

2. *Survey Report:*

See the Design Services Unit Liaison for Project Control Information.

3. *Utility Log:*

See Utility Unit Liaison for **Utility Log**. Utility coordinator will also coordinate with PA Turnpike's FOMC vendor to obtain information related to the fiber optic network.

4. *Traffic Counts or Capacity Study:*

See Traffic Engineering Unit Liaison for existing traffic counts and capacity studies.

5. *Traffic Operations:*

See Manager of Incident Management and Traffic Operations for existing ITS devices and SWZ deployment guidelines and Traffic Engineering Unit Liaison for TMP guidelines and response requirements.

6. *Noise Reports and Environmental Reports:*

See Environmental Engineering Unit Liaison for existing Noise Reports and Environmental Reports.

7. *Roadway Milepost Log and Files:*

See Roadway Engineering Unit Liaison for existing Roadway Milepost Log and roadway files.

8. *ROW/Survey Milepost Log and Files:*

See Design Services Unit Liaison for existing ROW/Survey Milepost Log, ROW Files and Requirements for consultants working within PA Turnpike ROW.

9. *Geotechnical Information and Reports:*

See Geotechnical Engineering Unit Liaison for existing roadway and/or structure geotechnical reports and boring and testing information.

10. *Common Maintenance Issues:*

Coordinate with the Manager of Maintenance and Field Operations for information on common maintenance issues within the project limits.

A.03 Initial Field View

A. Introduction

The purpose of the initial field view is to provide the PA Turnpike Project Manager (PM) with a good knowledge of the project area, to define the general scope of the project, and note existing project issues that need addressed in the design.

B. Conduct Initial Field View

The PA Turnpike PM field-views the project area to determine specific requirements and conditions within the project area that need to be addressed in the design of the project. The PA Turnpike PM notes all issues observed during the field view and any existing conditions or features that may need special attention within the anticipated project limits. The PA Turnpike PM determines the proposed general scope of the project based on the project description and location from the Capital Program. The PA Turnpike PM may conduct this field view individually or with his or her supervisor or other senior staff. Field view participation by Department Liaisons is highly recommended to properly prepare Scope of Work and advise on potential permitting needs.

C. Document Results of Initial Field View

The PA Turnpike PM prepares minutes from the field view. These minutes can be in outline form but should note all issues observed and general work needed. The minutes will serve as the basis for the project scope of work and be distributed to all liaisons assigned to the project for review.

A.04 Scope of Work

A. Scope of Work Coordination

The purpose of the Scope of Work Coordination is to provide a clear understanding of the intended purpose of the project to all PA Turnpike departments, obtain input from all PA Turnpike departments that have a stake in the project, and prevent "scope creep" as the project moves forward in design. The minutes of the Initial Field View should serve as the starting point for Scope of Work development. The Scope of Work should then be modified according to input during this coordination effort.

Based on the project description and location from the Capital Program, and general scope from the initial field view, the PA Turnpike Project Manager (PM) identifies the specific engineering design units, maintenance personnel, fare collection personnel, and other PA Turnpike department personnel who should be contacted for coordination. This coordination effort can be accomplished through a meeting scheduled by the PA Turnpike PM with all stakeholders or through the PA Turnpike PM's coordination with each individual stakeholder.

The following coordination efforts may occur for projects:

1. ***Coordination with Traffic Engineering and Operations Department***

The PA Turnpike PM coordinates with the Manager of Incident Management and Traffic Operations and Manager of Traffic Engineering to determine whether a Transportation Management Plan (TMP) is needed in addition to the basic maintenance and protection of traffic (MPT) requirements for the project, based on the general Scope of Work.

A TMP may be warranted if any of the following conditions are met:

- Long-term (one week or longer) lane closures
- Significant queuing (> 2 miles recurring)
- Adverse impacts to first responders (maintenance, PSP, fire, EMS, Authorized Service Providers (ASP), Haz-mat) including changes to dispatch procedures, response zones, access to gates, limited shoulders and projects in place during winter.
- Projects using federal funds.

In addition to the criteria above, PA Turnpike leadership holds the authority to require a TMP for any project they identify a need.

Note: If federal-aid funding is utilized, a TMP shall be developed when a project is deemed "significant" per Section 630.1012 of the Work Zone Safety and Mobility Rule. A significant project is one that alone or in combination with other concurrent, nearby projects is anticipated to cause sustained work zone impacts that are greater than what is considered tolerable based on State policy, PA Turnpike policy and/or engineering judgment.

The PA Turnpike PM is responsible for completing the TMP requirement checklist prior to meeting with the Manager of Incident Management and Traffic Operations and Manager of Traffic Engineering. Any TMP and/or MPT requirements should be conceptual but provide general intent to enable preparation of the full Scope of Work.

The PA Turnpike PM coordinates with Manager of Incident Management and Traffic Operations for any ITS device replacement, relocation or new installation. The effort for any ITS design should be scoped within the project.

Considerations on need for a Smart Work Zone during construction should be coordinated with the Traffic Engineering and Operations Department.

The PA Turnpike PM shall coordinate with the Manager of Incident Management and Traffic Operations for all service plaza projects to ensure coordination with Truck Parking Management System (TPMS) in pavement devices. This not only includes physical work on the ramp pavement, but any work on or around the ramps that would impact the normal path of traffic on the ramp (e.g. a shoulder closure or lane closure). Physical ramp work must be coordinated in advance so that arrangements can be made to replace sensors that will be milled or paved over. Sensors should be removed from the pavement prior to milling due to the hazardous materials within the batteries that power the in-pavement sensors. The sensor can be removed easily with coring or saw cut methods. The TPMS contractor will perform all related work for the installation, testing, and configuration of new in-pavement sensors.

2. *Coordination with Engineering Design Unit Disciplines for Required Resources*

The PA Turnpike PM coordinates with the appropriate support Engineering Design Unit Managers, including Environmental, Design Services, Traffic Engineering and Operations, and Geotechnical, to determine if discipline work on the project will be performed by separate contracted open end Design Services or the Design Consultant (DC).

3. Coordination with Electronic Toll Collection and Information Technology (Fiber Optic Network)

The PA Turnpike PM should coordinate with the ETC and IT groups to coordinate the impacts a project will have on the toll collection locations, equipment, and supporting utilities, including coordination with PA Turnpike FOMC vendor for PA Turnpike fiber network infrastructure. Impacts should be determined and either incorporated into the Project or done through the ETC or IT agreements with vendors.

B. Document Results of Stakeholder and Engineering Design Unit Coordination Efforts

The PA Turnpike PM prepares minutes from the coordination efforts with all stakeholders. Separate minutes are prepared if the PA Turnpike PM individually meets with each stakeholder or with each Engineering Design Unit. These minutes can be in outline form but should note all issues discussed and agreed-upon actions, along with stakeholder concerns. These minutes will help in preparation of the project Scope of Work.

C. Scope of Work Preparation

The PA Turnpike PM prepares the Scope of Work to clearly define the work required for the project, based on findings of the initial field view and modifications from the coordination effort with all project stakeholders and Engineering Design Units. This Scope of Work, in turn, is used to prepare the Request for Proposal (RFP) for the project, if applicable, and then used to develop the design for in-house projects or provided to the DC, as per the Part B - Acquire Resources, Section 2 - Work Authorization Process of this manual.

D. Related Information

- Part A - Project Initiation, Section 3 – Initial Field View
- Part B - Acquire Resources, Section 2 - Work Authorization Process

A.05 Risk Management Process

A. Introduction

The PA Turnpike's Risk Management Process was issued on July 20, 2015. The purpose of this Risk Management Process is to effectively manage risks on projects to ensure minimal or no negative impacts to the Capital Plan. The process categorizes all Capital Plan projects into three categories; High Risk, Medium Risk, and Low Risk. Most PA Turnpike projects will be classified as Low Risk with some being Medium Risk, and very few being High Risk. Projects categorized as Low Risk do not require a formal Risk Management Process. Projects categorized as High Risk and Medium Risk warrant a Risk Management Process explained below.

The process is implemented on all biddable design projects given Notice to Proceed with Study or Preliminary Design. An assessment must be done for each and every new biddable design project.

B. Project Categorization and Warrants

During the project initiation/kick-off phase, each project, including ones commencing with a study or feasibility phase, is examined and then placed into one of three categories to assess if and what level of risk analysis is appropriate. Projects are categorized High, Medium, or Low Risk according to the following criteria:

High Risk- projects are considered High Risk if three or more of the following criteria apply:

- Severe traveler delay.
- Estimated project cost is greater than $150M.
- Estimated project duration (initiation to completion of construction) is greater than 5 years.
- Project is unique - a type of project that has never been done before at the PA Turnpike.

- Project is "high profile." Projects in this category generally have a great deal of press coverage, often on a statewide basis. Examples of high-profile projects are the "Cashless Tolling" project, the Mon/Fayette & Southern Beltway projects and the I-95 Interchange project.
- Project requires the approval of an outside nontypical agency. (PennDOT, PUC, 105, 404, NPDES and other similar Permit approvals from state environmental agencies or municipal governments do not apply.)
- Project will result in significant PA Turnpike staffing impacts.
- Includes long-term lane closures and/or results in significant queues,
- Adversely impacts first responders
- Involves Federal funds

Medium Risk - projects are considered Medium Risk if:
- Project does not fall into the High Risk category.
- Two of the criteria defining High Risk projects are met.

Low Risk - all projects that do not fall into the High or Medium Risk categories.

It is intuitively obvious that the level of effort devoted to the management of risk on a given project should be commensurate with the identified risk category. The three categories defined above, High, Medium, and Low warrant different approaches.

Projects categorized as Low Risk do not require a formal Risk Management Process. Even for a Low Risk Project, the project manager must still provide documentation in the project file stating. "This project has been assessed for Risk Management and is determined to be a Low Risk Project and therefore no risk management is required." The cost and schedule risks inherent in every project are generally managed using the guidelines contained in the DOM and other PA Turnpike standards and guidance documents.

Projects categorized as High Risk and Medium Risk warrant a Risk Management Process. The level of effort again is commensurate with the identified risk category.

C. Risk Management Process for High and Medium Risk Projects

For Medium Risk projects, the first four of the following five basic steps (see Figure 1) may be accomplished during an initial design progress meeting with the designer and appropriate PA Turnpike staff members. For High Risk projects, such as the "Cashless Tolling" project, this effort is somewhat more complex and will perhaps involve a day-long workshop/charrette with all of the involved stakeholders. Furthermore, this effort must be documented for both Medium and High Risk projects. The level of effort for this process will vary from project to project. Please see the Communicate and Monitor Step for documentation examples.

Please refer to **E. Related Information** for a list of resources/references, which contain examples and further information.

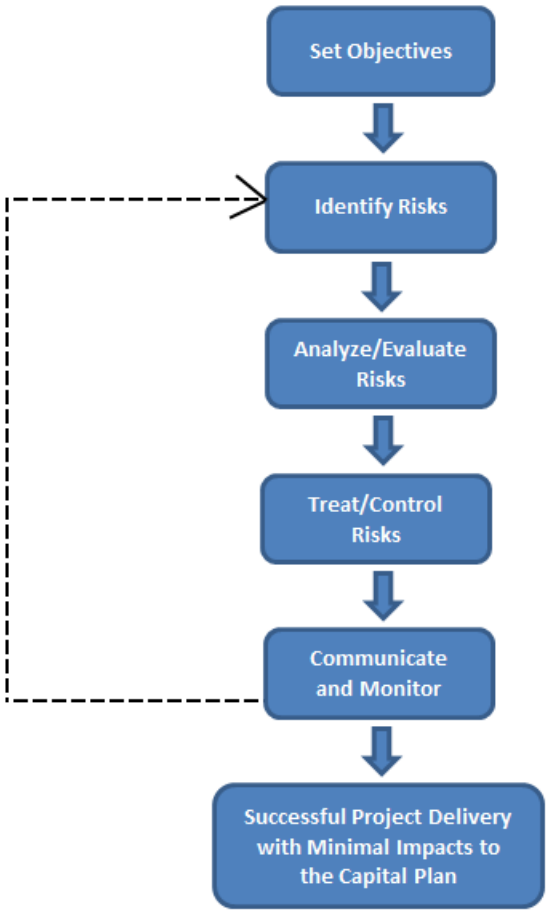

Figure 1. Steps of Risk Management

Below is an explanation of each step and the first four steps are involved in the effort of developing the risk management register. Please refer to Figure 2.

The Risk Management Plan is the product of these steps. The process of managing risk is an iterative one in which risks are identified and analyzed on a regular basis during project development.

Set Objectives – For the Medium Risk projects, there might only be two objectives: on schedule and within budget; however, for the High Risk projects there could be multiple objectives, such as for the "Cashless Tolling" project. The objectives for the "Cashless Tolling" project are as follows: Maintain Revenue; Minimize Employee Impacts; Preserve/Improve External Image; Deliver Program on Schedule; Deliver on Budget; Provide Safe, Convenient, and Reliable Travel; and Environment Stewardship.

Identify Risks – This step involves formally identifying the risks that could affect the project's objectives. Not all risks are negative. Some can be classified as opportunities. The following are some examples:

- External
  - Public safety
  - Price changes
  - Legislative actions
  - Economic changes
  - Climate events
  - Seismic events
  - Accident events
  - Utilities
  - ROW
  - Permitting
  - Terroristic events
  - Coordination with outside agencies
  - Public involvement issues

- Internal
  - Operational failures
  - Data failures
  - Conflicting objectives
  - Staffing
  - PA Turnpike employee impacts

Analyze/Evaluate Risks – This step evaluates the likelihood/probability of each risk with its impact/consequence and is performed in conjunction with the above step.

- Determine risk magnitude and ranking
  - Qualitative – based upon expert judgment
  - Quantitative
    - Simple 1 to 5 scales for the likelihood (probability) and impact
    - Complex modeling, only if deemed necessary
- Develop a spreadsheet/register similar to Figure 2
  - List objectives
  - Enter the risks associated with each objective
  - Determine likelihood and impact to obtain ranking for each risk
    - Assign a number from 1 to 5 to best describe the likelihood of occurrence
    - Assign a number from 1 to 5 to best describe the magnitude of impact
    - Multiply the likelihood number and the impact number together to obtain the ranking/priority
  - Establish risk treatment/control for each risk

Treat/Control Risks – This decision-making step is performed with the above three steps and applies what one guide calls the Five T's. These are to treat, tolerate, terminate, or transfer the risk or take advantage of the opportunity.

The treat/control options are as follows:

1. **Treat** – This means going to take action to mitigate the risk.

2. **Tolerate** – This means the likelihood of the risk materializing is so low or if it does materialize, the impact would be so low that we need not worry about the risk; however, monitor the risk to make sure it does not become worse.
3. **Terminate** – This does not mean terminate the risk but terminate the activity.
4. **Transfer** – This is where accountability for managing the activity is transferred to another agent.
5. **Take advantage** – To be used in relation to opportunities.

Communicate and Monitor – This step occurs continuously throughout the duration of the project and is typically done at the monthly design status meetings but can happen at any appropriate time. This step involves monitoring how well the management and control of the risks is going and to inform all involved parties of the status; even outside stakeholders such as the public, DEP, and other oversight bodies as needed. All of the steps overlap and when adjustments are required for whatever reason, such as a treatment/control not working or a new risk arises, revert back to the appropriate step and work down through the subsequent steps.

Documentation for a Medium Risk project shall consist of a risk management status agenda item for discussion during each design progress meeting and reported in the minutes of the meeting. The reference tool utilized during these discussions is the Project Risk Management Register, which was developed at the beginning of the project. The register is dynamic in nature with updates made as necessary during the life of the project.

For a High Risk project, the documentation shall be in the form of a published report completed early in the project life and referred to throughout the project with modifications/supplements prepared as needed and actions also reported in design progress meeting minutes. A Project Risk Management Register is generally the focal point of the report, but greater detail is provided in explaining exactly how to accomplish the treatment and control of the risks. See Figures 2 (Risk Register example) and Figure 3 (Blank Risk Register for PM use) on the following pages.

Project Risk Management Register						
Objectives	**Risk**	**i**	**ii**	**Rank**	**Risk Treatment/Control**	**Treat or Control Options**
Schedule	Environmental Permits	4	4	16	Early submission to CCD and DEP	1
Schedule	Districts' completion of preventive maintenance activities	3	2	6	Monitor PM program activities	1
Schedule	Timely collection of asset condition data	3	2	6	Provide more resources for data collection	4
Budget	Flooding degrading drainage structures	2	1	2	Monitor events, prepare to respond	2
Ensure Employee Safety	Ill-health effects from cleaning solvents used to clean pavement at toll plazas	4	5	20	Replace solvents with less volatile and less hazardous chemicals	3
Preserve/ Improve External Image	Toll rate structure	3	3	9	Convert to uniform rate per mile (or some variation thereof)	5
Provide Safe, Convenient, and Reliable Travel	Additional entry/exit points	4	2	8	Prioritize projects appropriately	5
Provide Safe, Convenient, and Reliable Travel	Severity of accidents involving guide rail end treatments	4	5	20	Replace with crash attenuators	3
	i) Likelihood			ii) Impact		
	R=Rare	1	1	N=Negligible		
	U=Unlikely	2	2	L=Low		
	P=Possible	3	3	M=Medium		
	L=Likely	4	4	V=Very High		
	A=Almost Certain	5	5	E=Extreme		

Figure 2. This table illustrates risks that can occur at the project/activity level. The risks are ranked by their likelihood and impact/consequence and color-coded by rank. The Treat or Control Options column is not part of the register but is only shown here to identify the different types of options listed in this table. Please refer to the Treat/Control Risks Step for the definition of the options.

Project Risk Management Register						
Objectives	**Risk**	**i**	**ii**	**Rank**	**Risk Treatment/Control**	**Treat or Control Options**
	i) Likelihood			ii) Impact		
	R=Rare	1	1	N=Negligible		
	U=Unlikely	2	2	L=Low		
	P=Possible	3	3	M=Medium		
	L=Likely	4	4	V=Very High		
	A=Almost Certain	5	5	E=Extreme		

Figure 3. Project Risk Management Register Template for Project Manager Use.

D. Project Tracking

Each PA Turnpike Project Manager should forward their Risk Management Process Assessments to the GCE, who will compile project assessments into a Tracking Form until further notice.

E. Related Information

- Project Risk Management Register Template

- Federal Highway Administration Publications at http://www.fhwa.dot.gov/asset/pubs.cfm
  - Risk-Based Transportation Asset Management Literature Review
  - Risk-Based Transportation Asset Management Report 1: Evaluating Threats; Capitalizing on Opportunities
  - Risk-Based Transportation Asset Management Report 2: Examining Risk-based Approach to Transportation Asset Management
  - Risk-Based Transportation Asset Management Report 3: Achieving Policy Objectives by

A.06 DOM Documentation Audit

A. Introduction

The purpose of the DOM Documentation Audit is to verify that the DOM processes regarding project documentation are being followed in accordance with the PA Turnpike's Office of Audit and Advisory Services, in response to an independent Capital Projects Risk and Control Assessment Audit in 2013.

B. Documentation Requirements

The PA Turnpike has developed and defined documentation requirements and processes, including:

- Systems and tools for managing project documentation;
- Clearly defined roles and responsibilities for managing project documentation;
- Consistent project file structures;
- Continuous training to key personnel.

C. Project Initiation Documentation Audit

PA Turnpike management requires that the PA Turnpike Project Manager (PM) perform continuous monitoring following the established management processes to ensure project files are maintained within the prescribed policies and procedures.

The PM should use the Project Manager Audit Checklist to record and audit all project documentation required in the DOM.

At the completion of Project Initiation the PA Turnpike PM should submit the continuously completed PM Audit Checklist to his or her supervisor to verify that all documentation has been continuously monitored.

Part B – Acquire Resources

B.01 Select a Consultant for Studies and Design

A. Project Advertisement

The PA Turnpike Project Manager (PM) coordinates with the Unit Manager and the PA Turnpike Professional Services Procurement Department (PSPD) to advertise the project on the PA Turnpike website or ECMS. The PA Turnpike PM provides input regarding a description of the project, project-specific requirements and tasks, and evaluation criteria in relative order of importance.

If the approved Capital Plan does not include funding for the specific project in the first two years, the PA Turnpike PM prepares an Agenda Item that requests Commission approval to issue an advertisement.

B. Review of Statements of Interest

A Technical Evaluation Team (TET) is established for the review of the Statements of Interest (SOI). The Assistant Chief Engineer or Design Unit Manager provides the PA Turnpike PSPD with the proposed members (at least three) of the TET and the members are entered into an OnBase workflow. Upon concurrence by PA Turnpike PSPD and approval by the CEO, the PA Turnpike PSPD provides Engineering with a memo that lists the approved TET members and the TET schedule.

The PA Turnpike PSPD receives SOIs from Design Consultants (DC) and distributes these to the TET.

The TET provides a qualitative assessment of each SOI in the form of Narrative Evaluation Summaries (NES). An NES template is provided to the TET by PA Turnpike PSPD. The NES identifies strong points and weak points associated with the published Evaluation Criteria and includes additional information associated with additional selection factors identified in the advertisement. The TET rates each firm as Highly Recommended, Recommended, or Not Recommended for this assignment. The TET initials and dates the final NES, evidencing concurrence with the ratings.

C. Determination of Highly Recommended Firms for Commission Selection

A member or designee of the TET presents the NES to the Professional Services Procurement Committee (PSPC). The PSPC considers the TET's NES and ratings. The firms determined to be Highly Recommended by the PSPC are forwarded to the Commission for selection.

D. Related Information

- Policy Letters Manual, Policy Subject 7.04 – Procurement
- Professional Services Procurement Procedures

B.02 Work Authorization Process

A. PA Turnpike Engineering Job Specific Agreement

The Commission approves the award of a contract to be negotiated and executed based on the procedures defined in the most recently approved Procurement of Professional Services memorandum; the PA Turnpike Professional Services Procurement Department (PSPD) notifies all responding consultants.

The PA Turnpike Project Manager (PM), Engineering Manager (EM), or Design Manager (DM) prepares a Scope of Work and provides to the department liaisons for review and comment. The PA Turnpike PM/EM provides a copy of the Scope of Work to the PA Turnpike PSPD to include within the Consultant agreement. The PM/EM conducts a Scoping Meeting with the Consultant to clearly define the work.

The Consultant prepares and submits a Technical Proposal to the PA Turnpike PM/EM or the DM for review. The PA Turnpike PM/EM or DM, along with department liaisons provide comments, and the Consultant addresses the comments and submits a Final Technical Proposal.

The PA Turnpike PM/EM or DM prepares a detailed man-hour and independent cost estimate (for design services) or an independent man-hour estimate (for construction management/construction inspection (CM/CI) services).

The Consultant submits a Price Proposal to the PA Turnpike PM/EM for review. The PA Turnpike PM/EM provides comments. The Consultant revises the Price Proposal accordingly and resubmits.

> **Note: The PA Turnpike PM/EM may elect to receive and review the Technical and Price Proposals as separate proposal submissions or together as a single proposal submission.**
>
> **Note: Price Proposals are not to be shared with or reviewed by the DM or CM or other Consultants.**

The PA Turnpike PM prepares and signs a Recommendation Memo, for approval and signature by higher-level managers, based on the overall Agreement amount and authorization levels listed below. The PA Turnpike PM prepares and signs a Negotiation Position Memorandum (NPM). The NPM includes back-up information, including a detailed man-hour and independent cost estimate (for design services) or an independent man-hour estimate (for CM/CI services), a copy of consultant's approved overhead rate, profit, ECMS factor, labor rates, and the consultant's Technical and Price Proposals.

In preparing the NPM, the PA Turnpike PM/EM verifies that the Price Proposal and its components (overhead rate, profit, ECMS factor, labor rates, man-hours, escalation, DB minimum participation level, and other direct costs) are satisfactory. If the NPM indicates that further negotiation is required, the PA Turnpike PM/EM updates the NPM memo for each

negotiation session. If the proposed overhead rate is not approved on file or in the Pennsylvania Department of Transportation's (PennDOT) ECMS, the PA Turnpike PM/EM notifies the PA Turnpike PSPD, and the PA Turnpike PSPD forwards the proposed overhead rate to the PA Turnpike Operations Review Group for review and concurrence. If the proposed labor rates are not approved in PennDOT's ECMS, the PA Turnpike PM/EM determines if the proposed labor rates are acceptable for the work to be performed and includes rate approval recommendation in the NPM.

The PA Turnpike PM/EM submits a PDF copy of the final Recommendation Memo, with required signatures and the NPM, to the PA Turnpike PSPD.

The PA Turnpike PSPD prepares the Agreement and sends it to the Consultant for execution upon approval of the draft Agreement by the Engineering Department, Legal Department, and CEO.

Upon receipt of executed copies from the Consultant, the authorized PA Turnpike officials execute the Agreement. The PA Turnpike Legal Department reviews and approves the Agreement as to form and legality, the Chair executes the Agreement, and the Assistant Secretary/Treasurer executes the Attestation.

The PA Turnpike Legal Department submits executed copies to the Pennsylvania Attorney General's office for review and approval as to form and legality. Note that it typically takes 6 to 12 weeks from when the PA Turnpike PM/EM submits the Scope of Work to the PA Turnpike PSPD until the Agreement is fully executed. A longer timeframe could result if the consultant takes issue with terms and conditions, such as insurance requirements.

The PA Turnpike PSPD furnishes a fully executed copy of the Agreement to the Consultant and PA Turnpike PM/EM.

The PA Turnpike PM/EM creates and releases a Network and Activity in SAP CJ20N application. The PA Turnpike PSPD creates the SAP/SRM Purchase Order. The PA Turnpike PSPD e-mails the SAP/SRM Purchase Order number to the PA Turnpike PM/EM.

The PA Turnpike PM/EM issues a Notice-to-Proceed (NTP) letter to the Consultant. Note: The work needs to be authorized, as well as the agreement being fully executed, prior to the consultant beginning any work.

If there is additional work, follow the procedure for PA Turnpike Supplemental Agreement, in Item C below. If there is a reduction in work, follow the same process as described above and issue a revised NTP letter.

AGREEMENT AUTHORIZATION LEVELS	
Approved by:	**Agreement Amount**
PM and EM (if the EM is serving as the PM, the Assistant Chief Engineer is also required to authorize.)	Less than $250,000.00
PM, EM, and Assistant Chief Engineer	Greater than $250,000.00 and less than $500,000.00
PM, EM, Assistant Chief Engineer and Chief Engineer	$500,000.00 and over

B. PA Turnpike Engineering Open-End Agreements (Job-Specific or Task-Specific)

1. *Agreement "Not-to-Exceed" Amount (Job Specific or Task Specific):*

The Commission approves the award of a contract for a not-to-exceed amount to be negotiated and executed based on the procedures defined in the most recently approved Procurement of Professional Services Procedures memorandum; the PA Turnpike PSPD notifies all responding consultants.

The PA Turnpike PSPD requests the Consultant to submit Overhead Rate and employee Labor Rates.

The PA Turnpike PM, EM, or DM prepare a job specific or task specific Scope of Work, as applicable. The PA Turnpike PM/EM provides a copy of the Scope of Work to the PA Turnpike PSPD to include within the Consultant Agreement. The PA Turnpike PSPD prepares the Agreement based on the scope and type of work to be performed and sends it to the Consultant for execution upon approval of the draft agreement by the Engineering Department, Legal Department, and CEO.

Upon receipt of the executed copies from the Consultant, the authorized PA Turnpike officials execute the Agreement. The PA Turnpike Legal Department reviews and approves the Agreement as to form and legality, the Chair executes the Agreement, and the Assistant Secretary/Treasurer executes the Attestation.

The PA Turnpike Legal Department submits executed copies to the Pennsylvania Attorney General's office for review and approval as to form and legality. Note that it typically takes 6 to 12 weeks from when the PA Turnpike PM/EM submits the Scope of Work to the PA Turnpike PSPD until the Agreement is fully executed. A longer timeframe could result if the consultant takes issue with terms and conditions, such as insurance requirements.

The PA Turnpike PSPD furnishes a copy of the fully executed Agreement to the Consultant and PA Turnpike PM/EM.

After the Agreement is executed, the Work Order Authorizations can be assigned. See Items B.2 (for Job Specific) and B.3 (for Task Specific) below.

2. *Work Order Authorization Process (Job Specific Only):*

The PA Turnpike PM/EM conducts a Scoping Meeting with the Consultant to clearly define the work. *To expedite the work, the PA Turnpike PM can provide advance authorization signed by the PA Turnpike PM/EM and higher-level managers (based on the estimated Work Order amount and authorization levels listed below) for a nominal amount involving certain defined tasks while the proposal details are being negotiated.*

The Consultant prepares and submits a Technical Proposal to the PA Turnpike PM/EM or DM for review. The PA Turnpike PM/EM or DM provides comments, and the Consultant incorporates the comments and submits a Final Technical Proposal.

The PA Turnpike PM/EM or DM prepares a detailed man-hour and independent cost estimate (for design services) or an independent man-hour estimate (for CM/CI services).

The Consultant submits a Price Proposal to the PA Turnpike PM/EM for review. The PA Turnpike PM/EM provides comments. The Consultant revises the Price Proposal accordingly and resubmits.

Note : The PA Turnpike PM/EM may elect to receive and review the Technical and Price Proposals as separate proposal submissions or together as a single proposal submission

Note: Price Proposals are not to be shared with or reviewed by the DM or CM or other Consultants.

The PA Turnpike PM/EM prepares and signs a Negotiation Position Memorandum (NPM). The NPM includes back-up information, which includes a detailed man-hour and independent cost estimate (for design services) or an independent man-hour estimate (for CM/CI services), a copy of the consultant's approved overhead rate, profit factor, ECMS factor, labor rates, and the consultant's Technical and Price Proposal.

In preparing the NPM the PA Turnpike PM/EM verifies that the Price Proposal and its components (overhead rate, profit factor, ECMS factor, labor rates, man-hours, escalation, DB minimum participation level, and other direct costs) are satisfactory. If the NPM indicates that further negotiation is required, the PA Turnpike PM/EM updates the NPM memo for each negotiation session. If the proposed overhead rate is not approved on file or in PennDOT's ECMS, the PA Turnpike PM/EM notifies the PA Turnpike PSPD, and the PA Turnpike PSPD forwards the proposed overhead rate to the PA Turnpike Operations Review Group for review and concurrence. If the proposed labor rates are not approved in PennDOT's ECMS, the PA Turnpike PM/EM determines if the proposed labor rates are acceptable for the work to be performed and includes the rate approval recommendation in the NPM.

The PA Turnpike PM/EM prepares a Work Order for approval and signature by higher-level managers, based on the overall Agreement amount and authorization levels listed below. The Notice to Proceed includes information such as the date of proposals, authorized

amount, and other pertinent contract information. The PA Turnpike PM/EM forwards the Work Authorization in accordance with the Authorizations Levels outlined in this section for signature. The forwarded package shall include the following items: Work Order Authorization, along with back-up information (NPM, detailed man-hour and independent cost estimate (for design services) or an independent man-hour estimate (for CM/CI services), the consultant's Technical and Price Proposals, etc.)

The PA Turnpike PM/EM creates and releases a Network & Activity in SAP CJ20N application. The PA Turnpike PM/EM e-mails a PDF copy of the Work Order Authorization to the PA Turnpike PSPD. The PA Turnpike PSPD creates the SAP/SRM Purchase Order upon receiving a copy of the Work Order Authorization. The PA Turnpike PSPD e-mails the SAP/SRM Purchase Order number to the PA Turnpike PM/EM. The PA Turnpike PM/EM e-mails a PDF copy of the signed Work Order Authorization and SAP/SRM Purchase Order number to the Consultant which serves as the NTP. Note: The work needs to be authorized, as well as the agreement being fully executed, prior to the consultant beginning any work. The PA Turnpike PM/EM files the signed Work Order Authorization and back-up; if a PCDS is being utilized, file in the PCDS file structure under the Contract Management folder.

3. *Work Authorization Process (Task Specific Only):*

Task specific open end related professional services may be utilized to supplement PA Turnpike manpower on an as-needed basis. In these instances, detailed Technical and Price Proposals may or may not be prepared. For task specific open end construction professional services, work orders are not typically assigned.

The PA Turnpike PM/EM conducts a Scoping Meeting with Consultant to clearly define the work.

The Consultant prepares and submits a Technical Proposal (if requested by the PA Turnpike PM/EM) to the PA Turnpike PM/EM for review. The PA Turnpike PM/EM provides comments, and the Consultant addresses the comments and submits a final Technical Proposal.

The PA Turnpike PM/EM prepares a detailed man-hour and independent cost estimate (for design services) or an independent man-hour estimate (for CM/CI services).

The Consultant submits a Price Proposal (if requested by the PA Turnpike PM/EM) to the PA Turnpike PM/EM. The PA Turnpike PM/EM provides comments. The Consultant revises the Price Proposal accordingly and resubmits.

Note: The PA Turnpike PM/EM may elect to receive and review the Technical and Price Proposals as separate proposal submissions or together as a single proposal submission

Note: Price Proposals are not to be shared with or reviewed by the DM or CM or other Consultants.

The PA Turnpike PM/EM prepares a Negotiation Position Memorandum (NPM) to be signed by the PA Turnpike PM/EM and higher-level managers. At a minimum the NPM includes the PA Turnpike PM/EM's detailed man-hour and independent cost estimate (for design services) or independent man-hour estimate (for CM/CI services) as back-up of how the services will be utilized; for example, the estimate includes the number of personnel assigned, estimated durations, and costs or rates. The NPM also includes any additional back-up information including the Consultant's approved overhead rate, profit, ECMS factor, labor rates, and the Consultant's Technical and Price Proposals (if prepared). In preparing the NPM, the PA Turnpike PM/EM verifies that the Price Proposal (if prepared) and its components (overhead rate, profit, ECMS factor, labor rates, man-hours, escalation, DB minimum participation level, and other direct costs) are satisfactory. If the NPM indicates that further negotiation is required, the PA Turnpike PM/EM updates the NPM memo for each negotiation session. If the proposed overhead rate is not approved on file or in PennDOT's ECMS, the PA Turnpike PM/EM notifies the PA Turnpike PSPD, and the PA Turnpike PSPD forwards the proposed overhead rate to the PA Turnpike Operations Review Group for review and concurrence. If the proposed labor rates are not approved in PennDOT's ECMS, the PA Turnpike PM/EM determines if the proposed labor rates are acceptable for the work to be performed and includes the rate approval recommendation in the NPM.

The NPM may be prepared for either part of the not-to-exceed or the entire not-to-exceed agreement amount. The NPM may be prepared to cover either a single or multiple on-call assignments. Additionally, the NPM may be updated periodically throughout the life of the agreement as new work is assigned.

The PA Turnpike PM/EM forwards the NPM along with back-up information (detailed man-hour and independent cost estimate for design services or independent man-hour estimate for CM/CI services, the Consultant's Technical and Price Proposals if prepared, etc.) for approval and signature by higher-level managers based on the overall amount and the authorization levels listed below.

The PA Turnpike PM/EM creates and releases a Network and Activity in SAP CJ20N application.

The PA Turnpike PM/EM e-mails a PDF copy of the signed NPM to the PA Turnpike PSPD. The PA Turnpike PSPD creates the SAP/SRM Purchase Order upon receiving a copy of the signed NPM. The PA Turnpike PSPD e-mails the SAP/SRM Purchase Order number to the PA Turnpike PM/EM. The PA Turnpike PM/EM e-mails a PDF copy of the signed NPM and SAP/SRM Purchase Order number to the Consultant which serves as the NTP. Note: The work needs to be authorized, as well as the agreement being fully executed, prior to the consultant beginning any work. The PA Turnpike PM/EM files the signed NPM and back-up; if a PCDS is being utilized, file in the PCDS file structure under the Contract Management folder.

4. ***Work Amendment Authorization Process (Job Specific or Task Specific):***

An Amendment is required when additional work exceeds the authorized amount of the Work Order, but is still within the Not-to-Exceed amount of the Open-End Agreement, or when a reduction in work occurs.

Whenever there is a transfer of funds between any of the four main cost categories (Direct and Indirect Payroll, Other Direct Costs, Direct Cost by Others and Fee/Profit) but there is no change in the previous Not-to-Exceed Amount, a No Cost Work Order Amendment shall be completed. The required signatures are limited to the PM, EM or DM and approval by a higher-level manager. The PA Turnpike PM/EM/DM e-mails a PDF copy of the No Cost Work Order Amendment to the PA Turnpike PSPD.

The Amendment authorization process is the same as the Authorization Process detailed in Items B.2 (for Job Specific) and B.3 (for Task Specific) above.

WORK ORDER AUTHORIZATION LEVELS	
Approved by:	**Agreement Amount**
PM and EM (if the EM is serving as the PM, the Assistant Chief Engineer is also required to authorize.)	Less than $250,000.00
PM, EM, and Assistant Chief Engineer	Greater than $250,000.00 and less than $500,000.00
PM, EM, Assistant Chief Engineer and Chief Engineer	$500,000.00 and over

Note: The work order authorization levels are based on the total work order authorization amount (original work order authorization amount plus all work order amendment amounts).

C. PA Turnpike Supplemental Agreement (applies to additional work that would exceed the original Agreement "Not-to-Exceed" Amount)

1. ***Job Specific Supplemental Agreement Authorization Process:***

The PA Turnpike PM, EM, or DM prepares the Supplemental Scope of Work. The PA Turnpike PM/ EM provides a copy of the Supplemental Scope of Work to the PA Turnpike PSPD to include within the Supplemental Consultant Agreement. The PA Turnpike PM/EM schedules a Scoping Meeting with the Consultant to clearly define the additional work.

The Consultant prepares and submits a Supplemental Technical Proposal to the PA Turnpike PM/EM or DM for review. The PA Turnpike PM/EM provides comments. The Consultant incorporates comments and submits a Final Supplemental Technical Proposal.

The PA Turnpike PM/EM or DM prepares a detailed man-hour and independent cost estimate (for design services) or an independent man-hour estimate (for CM/CI services).

The Consultant prepares and submits the Supplemental Price Proposal to the PA Turnpike PM/EM for review. The PA Turnpike PM/EM provides comments. The Consultant revises the Price Proposal accordingly and resubmits.

Note: The PA Turnpike PM/EM may elect to receive and review the Technical and Price Proposals as separate proposal submissions or together as a single proposal submission

Note: Price Proposals are not to be shared with or reviewed by the DM or CM or other Consultants.

The PA Turnpike PM prepares and signs a Recommendation Memo, which includes a Negotiation Position Memorandum (NPM), for approval and signature by higher-level managers, based on the overall agreement amount and authorization levels listed below. The NPM incorporates back-up information, which includes a detailed man-hour and independent cost estimate (for design services) or an independent man-hour estimate (for CM/CI services), a copy of consultant's approved overhead rate, profit factor, ECMS factor, labor rates, and the Consultant's Technical and Price Proposals.

In preparing the NPM, the PA Turnpike PM/EM verifies that the Price Proposal and its components (overhead rate, profit factor, ECMS factor, labor rates, man-hours, escalation, DB minimum participation level, and other direct costs) are satisfactory. If the NPM indicates that further negotiation is required, the PA Turnpike PM/EM updates the NPM memo for each negotiation session. If the proposed overhead rate is not approved on file or in PennDOT's ECMS, the PA Turnpike PM/EM notifies the PA Turnpike PSPD, and the PA Turnpike PSPD forwards the proposed overhead rate to the PA Turnpike Operations Review Group for review and concurrence. If the proposed labor rates are not approved in PennDOT's ECMS, the PA Turnpike PM/EM determines if the proposed labor rates are acceptable for the work to be performed and includes the rate approval recommendation in the NPM.

The PA Turnpike PM/EM submits a PDF copy of the final Recommendation Memo with required signatures and NPM to the PA Turnpike PSPD.

If the supplemental amount increases the overall agreement amount above the amount that was previously approved by the Commission, the PA Turnpike PM/EM prepares the Commission agenda item for the supplemental agreement amount. Any professional services supplement requests that exceed 25% (in the aggregate) of the original Commission approved amount and are greater than $250,000.00 (in the aggregate) also require an independent professional's written concurrence prior to requesting formal Commission approval. The PA Turnpike PM/EM will provide the following documentation, where applicable, to the independent professional for review purposes: request for proposal (published advertisement); original contract; supplemental technical proposal; supplemental price proposal; relevant PA Turnpike supplement review documentation (independent man-hour estimate, etc.); and, any other supporting documentation as appropriate. Prior to the Commission agenda item being signed by the appropriate PA Turnpike higher level managers, the independent professional will complete and sign a review form as documentation of its review and concurrence with the requested

supplement. The signed review form is required documentation that must accompany the supplement's Commission agenda item when it is being routed for signatures. It is the PA Turnpike PM/EM's responsibility to track the aggregate amount of a supplement to date and to initiate the independent professional review process when the aggregate supplement amount exceeds 25% of the original Commission approved amount and is greater than $250,000.00.

The supplemental amount must be approved by the Commission before the associated work can be authorized by the PA Turnpike PM/EM.

The PA Turnpike PM/EM makes revisions to the SAP Activity Quantity.

The PA Turnpike PSPD prepares a Supplemental Agreement and sends it to the Consultant for execution upon approval of the draft Supplemental Agreement by the Engineering Department, Legal Department, and CEO.

Upon receipt of executed copies from the Consultant, the authorized PA Turnpike officials execute the Agreement. The PA Turnpike Legal Department reviews and approves the Agreement as to form and legality, the Chair executes the Agreement, and the Assistant Secretary/Treasurer executes the Attestation.

The PA Turnpike Legal Department submits executed copies to the Pennsylvania Attorney General's office for review and approval as to form and legality. Note that it typically takes 6 to 12 weeks from when the PA Turnpike PM/EM submits the Scope of Work to the PA Turnpike PSPD until the Agreement is fully executed. A longer timeframe could result if the consultant takes issue with terms and conditions, such as insurance requirements.

The PA Turnpike PSPD furnishes an executed copy of the Supplemental Agreement to the Consultant and PA Turnpike PM.

The PA Turnpike PM/EM issues a Notice-to-Proceed (NTP) letter to the Consultant.

Note: The work needs to be authorized, as well as the supplemental agreement being fully executed, prior to the Consultant beginning any supplemental work.

2. ***Open-End Supplemental Agreement Authorization Process:***

The PA Turnpike PM/EM prepares the Commission agenda item for the new "Not-to-Exceed" dollar amount for the Supplemental Agreement. Any professional services supplement requests that exceed 25% (in the aggregate) of the original Commission approved amount and are greater than $250,000.00 (in the aggregate) also require an independent professional's written concurrence prior to requesting formal Commission approval. The PA Turnpike PM/EM will provide the following documentation, where applicable, to the independent professional for review purposes: request for proposal (published advertisement); original contract; supplemental technical proposal; supplemental price proposal; relevant PA Turnpike supplement review documentation (independent man-hour estimate, etc.); and, any other supporting documentation as appropriate. Prior to the Commission agenda item being signed by the appropriate PA

Turnpike higher level managers, the independent professional will complete and sign a review form as documentation of its review and concurrence with the requested supplement. The signed review form is required documentation that must accompany the supplement's Commission agenda item when it is being routed for signatures. It is the PA Turnpike PM/EM's responsibility to track the aggregate amount of a supplement to date and to initiate the independent professional review process when the aggregate supplement amount exceeds 25% of the original Commission approved amount and is greater than $250,000.00.

The PA Turnpike PM, EM, or DM prepares the Supplemental Scope of Work. The PA Turnpike PM/ EM provides a copy of the Supplemental Scope of Work to the PA Turnpike PSPD to include within the Supplemental Consultant Agreement. The PA Turnpike PSPD prepares the Supplemental Agreement based on the scope and type of work to be performed and the new Not-to-Exceed dollar amount and sends it to the Consultant for execution upon approval of the draft Supplemental Agreement by the Engineering Department, Legal Department, and CEO.

Upon receipt of executed copies from the Consultant, the authorized PA Turnpike officials execute the Supplemental Agreement. The PA Turnpike Legal Department reviews and approves the Supplemental Agreement as to form and legality, the Chair executes the Supplemental Agreement, and the Assistant Secretary/Treasurer executes the Attestation.

The PA Turnpike Legal Department submits executed copies to the Pennsylvania Attorney General's office for review and approval as to form and legality. Note that it typically takes 6 to 12 weeks from when the PA Turnpike PM/EM submits the Scope of Work to the PA Turnpike PSPD until the Agreement is fully executed. A longer timeframe could result if the consultant takes issue with terms and conditions, such as insurance requirements. The PA Turnpike PSPD furnishes a copy of the fully executed Supplemental Agreement to the Consultant and PA Turnpike PM/EM.

After the Supplemental Agreement is executed, amendments to the existing Work Order(s) and/or additional Work Orders can be assigned, as noted in the approved Commission agenda item and Supplemental Agreement. Note: The work needs to be authorized, as well as the supplemental agreement being fully executed, prior to the Consultant beginning any supplement work.

To issue a new Work Order or amend an existing Work Order, follow Items B.2, B.3, or B.4 above.

SUPPLEMENTAL AGREEMENT AUTHORIZATION LEVELS

Approved by:	**Agreement Amount**
PM and EM (if the EM is serving as the PM, the Assistant Chief Engineer is also required to authorize.)	Less than $250,000.00
PM, EM, and Assistant Chief Engineer	Greater than $250,000.00 and less than $500,000.00
PM, EM, Assistant Chief Engineer and Chief Engineer	$500,000.00 and over

Note: The supplemental agreement authorization levels are based upon the total agreement amount (original agreement amount plus all supplemental agreement amounts).

D. Related Information

- Sample Technical and Price Proposal Comments Letter (Job Specific Agreement)
- Sample Technical and Price Proposal Approval Letter (Job Specific Agreement)
- Sample Job Recommendation Memorandum and Negotiation Position Memorandum (Job Specific Agreement)
- Sample Work Order and Negotiation Position Memorandum (Job Specific Open End)
- Sample Work Order Amendment and Negotiation Position Memorandum (Job Specific Open End)
- Sample Negotiation Position Memorandum (Task Specific Open End)
- Sample Amendment within a Negotiation Position Memorandum (Task Specific Open End)
- Sample Supplement Recommendation Memorandum and Negotiation Position Memorandum (Job Specific Supplemental Agreement)

B.03 Contract Management

A. Introduction

The purpose of this section is to address the general contract management responsibilities of the PA Turnpike Project Manager (PM).

B. Invoicing

The PA Turnpike PM receives the invoice from the Design Consultant (DC) through the Vendor Portal.

The PA Turnpike PM reviews the invoice for accuracy and completeness. The PA Turnpike PM reviews and/or confirms the accuracy of the Contract Numbers, Purchase Order Number, and Overall Contract Values; ensures that the invoiced Overhead Rate corresponds to the currently approved overhead rate in ECMS (ECMS screen printout provided with the invoice) or the previously approved FAR audited overhead rate that is on file; and verifies that complete and proper attachments are provided, including time sheets and all other backup documents, such as Contract Percent Complete, ECMS overhead rate printout and Monthly Status Reports or Monthly Project Progress Meeting Minutes.

If any information is missing, the PA Turnpike PM requests the missing data from the DC, and the entire invoice file is resubmitted to the PA Turnpike PM.

After the PA Turnpike PM is satisfied with the invoice, approval is processed through the Vendor Portal.

For the process, see Vendor Portal - Invoicing – SmartDocs Help.

For final invoicing, see Part G – Design Project Closeout, Section 2 – Review and Approve Final Invoice.

C. Diverse Business/Diverse Business Enterprise (DB/DBE) Monitoring and Reporting

In October 2025, the U.S. Department of Transportation (DOT) announced significant changes to the federal Disadvantaged Business Enterprise (DBE) program. The PA Turnpike is complying with the Interim Final Rule, DOT guidance, and potential impacts.

At this time, DCs are required to continue submitting the EO-402 PS, PA Turnpike Monthly DB/DBE Professional Services Status Report on a monthly basis with participation from Diverse Businesses in accordance with 74 Pa.C.S. §303. This requirement applies specifically [and only to] to Veteran-Owned Small Businesses (VBE) and Service-Disabled Veteran-Owned Small Businesses (SDVBE), which were not impacted by the Interim Final Rule (IFR).

Until further notice following recertification, DCs are advised not to submit the EO-402 PS, PA Turnpike Monthly DB/DBE Professional Services Status Report on a monthly basis for Disadvantaged Business (DB) participation involving Disadvantaged Business Enterprise (DBE), Women Business Enterprise (WBE), and Minority Business Enterprise (MBE) companies. Currently, with the exception of VBE and SDVBE vendors, DC submission of the EO-402 forms via the Vendor Portal or the uploads of copies to PCDS is not required at this time.

D. Consultant Insurance Requirements–Yearly

The PA Turnpike PM receives a copy of the DC's certificates of insurance before the DC performs any work on the project. The PM verifies that the certificates of insurance meet the requirements as specified in the DC's agreement with the PA Turnpike. The certificates of insurance are updated and resubmitted to the PM annually, based on the policy's expiration date over the life of the DC's contract with the PA Turnpike. The PM also provides a copy of all certificates of insurance, including any updated certificates, to the PA Turnpike's Risk Manager. Any questions regarding insurance coverage should be made to the PA Turnpike's Risk Manager.

E. Consultant Overhead and Labor Rates

Overhead and applicable labor rates will be based on the rates established in PennDOT's Engineering Construction Management System (ECMS) at the time of contract execution. The PA Turnpike PM will receive for each Work Order a listing of DC employees anticipated to work on the various tasks, with documents that confirm ECMS approval of the proposed overhead and labor rates.

The DC must have a Federal Acquisition Regulation (FAR) Audit performed for each fiscal year during which the DC's work was performed under the services, completed, and accepted by the PA Turnpike. Each FAR Audit must be furnished to the PA Turnpike, at no direct cost to the PA Turnpike, within six (6) calendar months following the DC fiscal-year end.

The PA Turnpike will accept revised Overhead Rates if approved by PennDOT in ECMS and, in this event, an additional FAR Audit would be unnecessary. When an actual overhead rate is established for any fiscal year, invoices submitted for the work performed during that year, using a provisional rate, will be adjusted by an overhead adjustment invoice to reflect the actual FAR overhead rate. Overhead adjustment invoices shall be submitted within six (6) calendar months following the establishment of the actual Overhead Rate. The accepted audited fiscal year Overhead shall be used as the provisional Overhead Rate for the ensuing fiscal year and, at its end, the DC and the PA Turnpike or PennDOT will establish the accepted audited Overhead Rate, and foregoing adjustments will be made again. Verification of the DC's Overhead Rate, together with the appropriate adjustment of the DC's billing, will be performed for each of the DC's fiscal years for the term of the Agreement. This also applies to any subconsultants of the DC.

For work orders with a specific rate of compensation as the method of payment, the specific rate factor developed at the time of execution of the agreement will be used for invoicing for the life of the agreement. All construction consultation work orders should be standalone work orders and specific rate of compensation.

F. **Internal PA Turnpike Labor Costs**

All PA Turnpike Engineering internal labor needs to be charged to the appropriate phase of work within an individual project. Typically labor associated with the Study Phase should be charged to the "-1" level 2 WBS; labor associated with the Design Phase should be charged to the "-2" level 2 WBS; and labor associated with the Construction Phase should be charged to the "-3-01" level 3 WBS. Please note that labor relating to the construction of the project should be charged to the "-3-01" WBS. This includes all consultant CM/CI costs.

PA Turnpike PMs are to charge the labor costs (time) for reviewing a PS&E submission to the Design WBS Number and not the Construction "-3-01" WBS Number that is on the PS&E package. The construction contract number for the project typically has a "-3-02, or -3-03, or -3-04" extension. It is important that the "-3-02" number is reserved solely for the contractor's costs on the project.

Another important note is once a project is in construction, any time that a PA Turnpike PM has spent on the project, such as attending construction progress meetings, reviewing RFIs, reviewing shop drawings, and attending final inspections, must be charged to the "-3-01" WBS Number. The "-3-01" WBS Number is always for Construction Management/Construction Inspection services as well as all PA Turnpike labor charges once the project is active in construction.

NOTE: No PA Turnpike labor costs are to be charged to the contract number that is on the construction contract (WBS #-03-02 or subsequent #'s) documents. That number is only for contractor charges.

G. Related Information

- PennDOT Pub. 93 - Policy and Procedures for the Administration of Consultant Agreements
- Part G – Design Project Closeout, Section 2 – Review and Approve Final Invoice
- Vendor Portal

Part C – Preliminary Design

C.01 Initiation

A. Receive Detail Schedule

The Design Consultant (DC) prepares and submits a detailed Critical Path Method (CPM) schedule for all the necessary tasks associated with the approved scope of work for the preliminary design. The detailed schedule is submitted in either Excel or a PDF, with readily identifiable milestone dates.

The PA Turnpike PM or the Design Manager (DM) reviews the submission to verify that all milestone dates are included and that the completion date for the preliminary design is reasonable. The PA Turnpike PM or DM provides comments. The DC addresses the comments and submits a final preliminary design schedule. The PA Turnpike PM may discuss milestone dates with the PA Turnpike Category Manager to verify that the schedule meets project expectations as defined by the Capital Program.

If the project is using a PCDS, the PA Turnpike PM or DM saves the detailed schedule in the project file structure under the Project Management/Schedule folder. If a PCDS is not being used, the list is saved in the project file structure under the Project Management/Schedule folder on the PA Turnpike network ENG folder.

The PA Turnpike PM reviews the schedule on a monthly basis. If updates are needed, the PA Turnpike PM provides comments to the DC, who makes revisions and submits an updated schedule.

PA Turnpike PM also reviews and updates as needed the milestones for their projects in the Contract Status database on a monthly basis.

B. Receive Project Specific Quality Management Plan

In accordance with the PA Turnpike Quality Assurance (QA) Program implemented in April 2012, the DC develops a Project-Specific Quality Management Plan (PSQMP) for all projects. The PA Turnpike PM or DM provides to the DC all of the PA Turnpike QA Program documents necessary to prepare the PSQMP during the agreement process, soon after a satisfactory proposal is submitted and prior to the Kick-off Meeting.

The DC prepares and submits the PSQMP to the PA Turnpike PM or DM for review within 45 days of agreement execution. The PSQMP should be submitted in accordance with the guidelines established in the PA Turnpike Project Specific Quality Management Plan (PSQMP) Guidelines.

The PA Turnpike PM reviews the submission to verify that all objectives are met. The PSQMP objectives are to achieve the following:

1. Identify key project quality roles and resources.

2. Identify and describe quality processes and procedures applicable to the project.
3. Identify specific technical references to be followed, as applicable.
4. Serve as a one-stop reference tool for the PM and other project staff in carrying out steps related to quality control and quality assurance.
5. Provide the PA Turnpike with a concise picture of the DC's quality-related processes and procedures for the specific project.

If all objectives are met, the PA Turnpike PM or DM accepts the PSQMP in writing. If the project is using a PCDS, the PSQMP is saved within the project file structure under the Project Management folder. If there are multiple PSQMP documents, then a PSQMP folder is created within the Project Management folder.

C. Receive Cash Drawdown

At the beginning of the project, the DC prepares and submits a cash drawdown schedule that details projected dollars to be spent on a monthly basis for the entire preliminary design phase. The cash drawdown will be submitted in Microsoft Excel.

The PA Turnpike PM reviews the submission to determine if the dollar amounts are reasonable, and the total negotiated amount is expended by the completion date established earlier in the process. The PA Turnpike PM can provide recommendations for the cash drawdown. The DC reviews comments and revises the cash drawdown, if needed.

If the project is using a PCDS, the PA Turnpike PM posts the drawdown schedule to the consultant specific invoice folder within the Shared Confidential folder. It is recommended that the PA Turnpike PM setup notifications on the invoice folders in the PCDS. Setting up notifications will cause an email to be sent to their PA Turnpike email address whenever a file is uploaded to the invoice folders.

The PA Turnpike PM reviews the cash drawdown schedule on a monthly basis. If updates are needed, the PA Turnpike PM provides comments to the DC, who makes the needed changes and submits an updated cash drawdown. At a minimum, the DC will submit an updated cash drawdown on a quarterly basis.

D. SAP Updates

1. ***Project Capital Planning***

On a quarterly basis, the PA Turnpike PMs are asked to review and update, if necessary, planned values and provide this data to their Category Managers. The best time to review and update planned dollars is when the PA Turnpike PM is processing an invoice. The PA Turnpike PM revises the planning values for each planned WBS Element based on the most recent cost estimates and/or cost drawdown. The planning values need to be broken down into months for the current fiscal-year values and by year for any subsequent fiscal years. The Category Manager reviews each individual project, along with its overall category values. After review and approval by the Category Manager, the Program Manager collects and forwards all planned costs to the PA Turnpike Planning Unit to be inputted in SAP. See Reference Lesson 1 of the LOPS-02 Manual for more detailed information.

2. ***Project Schedule***

a. ***SAP***

At the beginning of the project, the PA Turnpike PM enters the forecast dates for the Level 2 WBS Design and Construction in SAP, under Part A - Project Initiation, Section 1 – Project Set-Up. The project schedules should be reviewed on a monthly basis. If the project schedule changes, the PA Turnpike PM must update the forecast dates in SAP. The procedure to update schedule information is included in Lesson 4 of the LOPS-02 Manual.

When a Level 3 WBS element is created for the construction contract, per Part D – Final Design, Section 2 – Define Construction Contracts, the PA Turnpike PM must input the forecast dates for the Level 3 WBS element. These forecast dates may change and should be reviewed on a monthly basis.

b. ***12-Quarter Planning Schedule***

At the beginning of the project, the PA Turnpike PM also enters the forecast dates in the **Microsoft Dynamics CRM.** The 12-Quarter Planning Schedule is a report located within the **Microsoft Dynamics CRM**. The project schedules should be reviewed on a monthly basis. If the project schedule changes, the PA Turnpike PM must update the forecast dates in the **Microsoft Dynamics CRM**.

Several of the 12-Quarter Planning Schedule dates entered will be locked down. Any changes to the 12-Quarter Planning Schedule will need to be verified with Contract Management if the Date Change Request Form is required. Changes to any project on the 5-Quarter Planning Schedule will require the Date Change Request Form to be completed and approved. The dates cannot be changed without this form being completed and approved.

E. Identify Deliverables

After the Scope of Work is finalized, the DC prepares and submits a list of design deliverables. The DC prepares this list by reviewing each task in the preliminary design scope of work. Each task should have some form of deliverable. Below is a list of typical Preliminary Design deliverables that may be required on a project:

- PSQMP
- Cash Drawdown Schedule
- Project Schedule
- Milestone Schedule
- Design Criteria Submission
- Design Criteria Approval (PA Turnpike, PennDOT, and Townships)
- Proposed Construction Centerline
- Preliminary Line and Grade
- Preliminary Right-of-Way (ROW) Geometry Plans
- Bridge Alternatives Analysis (Not for Facilities)
- Interchange Alternatives Analysis
- Typical Sections

- Cross-Sections
- Preliminary Drainage/E&S/SWM
- Bridge Inspections and Reports (Not for Facilities)
- Bridge TS&Ls and Rehabilitation/Repair Detail Development (Not for Facilities)
- Culvert Inspections and Reports (Not for Facilities)
- Hydrologic and Hydraulic Analysis
- Culvert TS&Ls
- Retaining Walls
- PA One Call
- Plot Utilities
- Utility Verifications
- Intent-to-Enter Letters
- Best-Fit As-Built ROW Centerline (Not for Facilities)
- Property Lines and Legal ROW
- Required Right-of-Way Lines and Easements
- Geotechnical Reconnaissance Plan
- Geotechnical Problem Statement and Draft Exploration Plan
- Test-Boring Logs
- Preliminary Geotechnical Engineering Report
- Preliminary Structure Foundation Submission
- Pavement Designs
- Preliminary Traffic Control Plan
- Preliminary Signing and Pavement Marking Plan
- Preliminary ITS Devices
- Preliminary Fiber Optic Plan (including coordination, protection, relocation, etc.)
- Preliminary RMA vs Non-RMA calculations
- Transportation Management Plan
- Construction Cost Estimates
- Environmental Permits Listing
- Environmental Reports
- Public Involvement Program Documents (Not for Facilities)
- Design Field View Submission (or 30% submission for Facilities)
- Constructability Review
- Environmental Overview Report and Mapping (Not for Facilities)
- Wetland and Waterway Delineation
- Wetland and Waterway Mapping
- Wetland and Waterway Report
- Cultural Resource Reports
- Noise Report
- Smart Work Zone System Plans
- Point-of-Access Study (POA)
- Traffic Impact Study (TIS)

The PA Turnpike PM or DM reviews the list of design deliverables. If needed, the PA Turnpike PM or DM provides comments, and the DC addresses the comments and submits a final list. See Part C – Preliminary Design, Section 10 – Deliverable Coordination/Tracking for the tracking of deliverables.

F. Process First Invoice (Preliminary Design Phase)

The PA Turnpike PM should not process the first invoice until the following items, as described above, are provided by the DC:

1. Detailed Schedule
2. PSQMP
3. Cash Drawdown Schedule
4. Design Deliverables List

G. Related Information

- PA Turnpike Quality Assurance Program
  - PA Turnpike Project Specific Quality Management Plan (PSQMP) Guidelines
  - PSQMP Word Document Template
  - PA Turnpike Quality Verification Checklists
    - Discipline Quality Verification Checklist
    - Project Quality Verification Checklist
    - Contract Management Checklist
    - Geotechnical Quality Assurance Form
- Project Systems Complex Project Lifecycle Processing – LOPS-02 Manual
- Date Change Request Form
- Microsoft Dynamics CRM
- Constructability Review Guidance
- Part A – Project Initiation, Section 1 – Project Set-up
- Part C – Preliminary Design, Section 10 – Deliverable Coordination/Tracking
- Part D – Final Design, Section 2 – Define Construction Contracts
- Traffic Management Plan (TMP) Requirements Flow Chart

C.02 Public Coordination

A. Introduction

Public Coordination is essential for the PA Turnpike to maintain a positive, proactive posture throughout project development and implementation. The goal of Public Coordination is to inform, educate, and engage key stakeholders, interested citizens, and Pennsylvania Turnpike customers in a manner that facilitates the successful and timely completion of a highway improvement project; meets the goals of the PA Turnpike; and meets the needs of the Pennsylvania Turnpike customers and communities adjacent to the project area. The PA

Turnpike Project Manager (PM) or Design Manager (DM) should utilize the tools identified below and in the project Transportation Management Plan, while coordinating with the Design Consultant (DC), to keep the general public, public officials, project stakeholders, and the media informed about the project as it progresses from preliminary design through construction.

Public coordination should occur early and often; typically soon after early studies and the Transportation Management Plan (TMP) is drafted. The frequency will vary depending on the complexity of the project.

The PA Turnpike's Public Engagement Resources Webpage provides an overview of public involvement protocols and guidelines to perform public engagement activities for PA Turnpike projects.

The PA Turnpike Engineering Department has implemented a Systemwide Public Engagement contract to help provide consistency in its public engagement efforts. In doing so, the contract holder has been asked to work with the PA Turnpike Project Manager (PM), Design Manager (DM), Design Consultant (DC) and existing public engagement project teams on strategies and tactics to 1) help increase awareness among stakeholders and the public of these critical components of infrastructure, 2) educate them on these projects' purpose, need, details and potential impact on their lives, and 3) that the PA Turnpike understands its responsibility in doing so in a transparent and equitable manner. All public involvement efforts should include the PA Turnpike's Engineering Project Specialist to ensure the proper outreach tools are being utilized.

B. Local Municipal Ordinance Compliance

Questions received from local municipalities related to PA Turnpike compliance with local land use, subdivision, stormwater management, and land development ordinances, requirements or design criteria should be directed to the PA Turnpike design project manager. Designers working on the PA Turnpike's behalf are not authorized to submit applications or permits to local municipalities for land use, zoning or land development purposes. The PA Turnpike Design PM will advise the DC of the appropriate course of action after consulting with PA Turnpike legal staff.

C. Assessment of Community Interests and Issues

Each project involves a variety of community interests, concerns, and issues that must be addressed throughout design and construction. The first step is to assess the project area to identify the potential issues and concerns.

Key community concerns and potential issues to be aware of in most projects include the following:

- Need for private property access to complete preliminary design tasks.
- Interest in noise walls and other potential environmental impacts.
- Concerns about stormwater management.
- Need for right-of-way/property acquisition.
- Timing and impacts of construction, including detours, traffic, and noise.

- Relationship to and community issues surrounding nearby projects.

D. Public Outreach Tools

This element describes the tools that will be created to facilitate ongoing communication with project stakeholders and the general public throughout the project. All materials described below will be updated regularly during the project. Email is the preferred method of project communication but, when specifically requested or otherwise appropriate, mailed notifications will be used. If a TMP is required, additional communication and delivery methods may be necessary. The PA Turnpike PM or DM shall reference the TMP for further direction.

1. Project Introduction Letter:

The first public outreach effort to the local community should be an introduction letter. In this letter the project manager should introduce themselves, explain the history of the project, and outline future expectations for property owners (i.e. – NOITE letters, studies, public meetings, tentative timeframes, etc.). An example Project Introduction letter is referenced in the appendix.

2. Notice of Intent to Enter (NOITE) Letters:

For projects where the Preliminary Design Scope of Work indicates the potential for Right-of-Way (ROW) acquisition and/or survey activities outside of the existing Legal ROW, the PA Turnpike PM or DM coordinates with the DC to send out NOITE letters for all properties possibly impacted. See Part C – Preliminary Design, Section 6 – Right of Way for additional information. An example NOITE letter is in Chapter 20 of the Design Consistency Guidelines (DCGs).

3. Public Officials List:

The PA Turnpike PM or DM develops and maintains a list of public officials which includes the following representatives at a minimum. The PA Turnpike PM or DM shall refer to the project TMP for additional project officials. The list is updated as needed during project development.

- Township Managers and Elected Officials for each Municipality
- County Planning Commission Executive Director
- County Planning Commission Transportation Services Director
- County Commissioners
- County Executive Director
- Pennsylvania State Representatives and Staff Designees
- Pennsylvania State Senators and Staff Designees
- Pennsylvania Department of Transportation Engineering District

The PA Turnpike PM or DM contacts all municipalities within the project area and selects a point of contact for the project. The PA Turnpike PM keeps the appropriate executive-level PA Turnpike staff informed of any public issues or concerns and copies the PA Turnpike Director of Government Affairs on all correspondence with elected officials. The PA Turnpike

PM should coordinate, review, and approve in advance all communications with public officials.

4. Project Website:

The PA Turnpike PM coordinates with PA Turnpike staff to determine if a project-specific website is required. If a website is desired, the PA Turnpike PM coordinates with the DC or DM and the PA Turnpike Engineering Project Specialist for developing and maintaining the project website during the life of the project. The Engineering Project Specialist will open a ticket in the PA Turnpike's Service Now to request a new construction microsite and ensure the DC or DM has editing permissions. The information available at the start of the project will be general in nature and will become more detailed as the project progresses. The website will be the primary day-to-day source of information to the public about the project.

The initial project website will include the following pages, which will be updated regularly. New pages will also be added, as appropriate, during the design process.

- Project Overview
- Design & Construction Details
- News & Public Involvement
- Team & Contact Info

5. Media Communications:

The PA Turnpike PM or DM coordinates among the DC, the PA Turnpike Strategy and Communications Department, and PA Turnpike public involvement staff to develop and disseminate press releases, feature articles, or meeting advertisements deemed necessary for the project.

Media contacts are directed to the PA Turnpike Press Office, unless otherwise directed by the PA Turnpike.

E. Stakeholder & Community Outreach

On a project by project basis, the PA Turnpike PM should determine the impact to the public and coordinate with the Unit Manager on public meeting requirements. The project TMP shall also be consulted for additional stakeholder and community outreach requirements.

For projects with minimal impacts a public meeting may not be required whereas a major reconstruction project will require extensive public coordination/meetings.

The PA Turnpike's Public Engagement Resources Webpage provide guidance, templates, and other resources for public meetings, project website, and other engagement strategies. The logistics and materials identified should be used to create forums for information sharing and building relationships between the project and stakeholder groups to share information and concerns.

F. Related Information

- Part C – Preliminary Design, Section 6 – Right of Way
- Public Engagement Resources Webpage

C.03 Design Field View (DFV)

Note:-Facilities considers this a 30% Design Submission.

A. Introduction

The Design Field View (DFV) is a major milestone submission that typically completes Preliminary Design. The DFV must be developed in sufficient detail and with adequate supporting documents to obtain approval for the project's preferred alternative and proceed with Final Design.

B. DFV Submission Coordination and Review

The DFV submission includes a detailed report, plans, and cost estimate, along with all other supporting documents from preliminary engineering. The PA Turnpike Project Manager (PM) distributes and facilitates the PA Turnpike departmental review of the DFV submission.

1. *Design Consultant (DC) submits to PA Turnpike PM or Design Manager (DM):*

The PA Turnpike PM or DM coordinates the DFV package distribution list with the DC. Prior to distribution, and in accordance with the PA Turnpike Quality Assurance (QA) Program and the DC's approved Project-Specific Quality Management Plan, the PA Turnpike PM or DM verifies that the submission is complete.

The PA Turnpike PM distributes the PA Turnpike copies to the design units and other applicable departments, including Engineering Construction, Traffic Engineering and Operations, Fare Collection, Electronic Toll Collection, Facilities, *FOMC* – PA Turnpike's Fiber, Operations, Maintenance, and Commercialization vendor and Maintenance.

The **PA Turnpike Quality Verification Checklists** are completed by the DC and submitted to the PA Turnpike PM or DM for the DFV Submission.

2. *Conduct Concurrent Reviews:*

Each PA Turnpike design unit, Traffic, Maintenance, and other applicable Departments are given time to perform a review of the DFV; preferably four weeks. Review times for smaller projects may be shortened to two weeks with approval from the PA Turnpike PM's Design Unit Manager. All comments from the PA Turnpike reviewers are given to the PA Turnpike PM. For projects that employ a DM, the PA Turnpike PM forwards all PA Turnpike comments to the DM. Only those PA Turnpike comments received by the due date established by the DM will be incorporated.

The PA Turnpike PM or DM consolidates and coordinates all comments received from the PA Turnpike design units and DM team prior to forwarding them to the DC.

The PA Turnpike PM or DM coordinates with the PennDOT District or Central Office, when necessary, in seeking comments and resolution to comments.

3. *Plan Presentation Compliance Checks:*

For any project that involves plans development, files are made available to be checked for Plan Presentation Standards Compliance.

C. Conduct DFV Office and Field Meetings (30% submission for Facilities)

The DFV meetings complement the DFV Submission or 30% submission and are typically held within weeks after the submission is delivered. This is an important opportunity to reach consensus on critical issues, identify aspects of the project requiring special attention in Final Design, and identify the potential environmental impacts and footprint of the selected alternative.

1. *Design Field View Office Meeting:*

The PA Turnpike PM, along with the DC, arranges and schedules an office meeting with all reviewers to discuss and resolve any issues with the DFV or 30% Facilities submission. The office meeting should also identify any specific issues that need to be verified in the field.

Pennsylvania Department of Transportation (PennDOT) District personnel are invited by the PA Turnpike PM or DM to participate in the meeting when the project includes significant PennDOT involvement or has any impact to PennDOT's roads. For Facilities projects, the PA Turnpike PM should check with their supervisor for invitations.

PA Turnpike design units and any other applicable PA Turnpike departments and other outside agencies are also invited, depending on the nature of the project or the nature of reviewer comments. For Facilities projects, the PA Turnpike PM should check with their supervisor for invitations.

2. *Design Field View Field Meeting:*

A field view meeting is held, unless otherwise waived by the Assistant Chief Engineer – Design, to further evaluate any issues observed during the field view.

The PA Turnpike PM or DM will ensure that the DC provides the necessary field equipment or markings, such as a bucket truck, station marking, etc.

PA Turnpike design units and other PA Turnpike departments, such as Maintenance, Fare Collection, Electronic Toll Collection, Traffic, Facilities, etc., and PennDOT personnel are invited to this meeting at the discretion of the PA Turnpike PM or DM.

D. Related Information

- PA Turnpike Project Specific Quality Management Plan (PSQMP) Guidelines

- PA Turnpike Quality Verification Checklists
  - Discipline Quality Verification Checklist
  - Project Quality Verification Checklist
  - Contract Management Checklist
  - Geotechnical Quality Assurance Form

C.04 Traffic Engineering and Operations

A. Traffic Data Collection

The PA Turnpike Project Manager (PM) coordinates requests for current Pennsylvania Turnpike traffic data. The Design Consultant (DC) requests traffic data from the Pennsylvania Department of Transportation (PennDOT) and local municipalities for non-PA Turnpike facilities; specifically, state and local roads. When current traffic data are unavailable, the DC conducts traffic counts in accordance with the needs of the project.

The PA Turnpike PM coordinates the DC requests for historic Pennsylvania Turnpike traffic data with the PA Turnpike Manager of Traffic Engineering or their designee. Traffic growth rates are provided from the PA Turnpike growth report for PA Turnpike roadways and interchanges. On projects involving new interchanges, the DC coordinates with the local Metropolitan Planning Organization (MPO) or Regional Planning Association (RPA), as needed, to establish growth rates and traffic projections based on the design year. The DC determines traffic growth rates for Pennsylvania State Routes from the latest PennDOT Traffic Data Reports and appropriate adjustment factors.

B. Crash Data Collection (Not applicable for Facilities projects)

The PA Turnpike PM or Design Manager (DM) coordinates with the DC to request crash data. Following review of PA Turnpike crash data, the DC may request individual crash reports from the PA Turnpike.

A letter request for crash data is prepared for PennDOT and local municipal roadways if PA Turnpike data are unavailable or for non-PA Turnpike facilities. The DC prepares the letter request for crash data to PennDOT and local municipalities, where needed. The PA Turnpike PM, DM, and Manager of Traffic Engineering are copied on the letter.

C. Develop Conceptual Maintenance and Protection of Traffic (MPT) Scheme for Mainline (Specification; Plans)

The PA Turnpike PM meets with the PA Turnpike Manager of Traffic Engineering and Manager of Incident Management and Traffic Operations (or their designees) and the DC to discuss the DC's conceptual Maintenance and Protection of Traffic plan (MPT) to be used on the project. The

conceptual MPT on the PA Turnpike mainline will indicate whether staged construction will be used or short-term, single-lane closures will be implemented during construction. If staged construction is proposed, the staging scheme and narrative of the construction sequence, as part of the specifications, along with the conceptual staging cross-section are prepared by the DC for review by the DM or the PA Turnpike Manager of Traffic Engineering and Manager of Incident Management and Traffic Operations (or their designees). For overhead bridges, traffic control for beam demolition and erection, that is, traffic stoppages or "Plan Xs" is designed. For interchanges, interchange ramp maintenance and protection of traffic, including cross-overs, half-width construction, or closure, is determined.

D. Determine MPT for Other Roads (Detour, Signal, and Staging)

The PA Turnpike PM or DM should ensure coordination with PennDOT or local municipality for concurrence with the local road MPT. The PA Turnpike PM or DM will request the DC to prepare conceptual MPT plans for other roadways. The DC's sequence for construction along existing roads or new alignments will establish the MPT and determine whether or not there will be staged construction, a detour route, or temporary signalization. Potential impacts to existing signals along detour routes will be considered. Traffic control design for other state or local roads must also accommodate non-motorized forms of travel, including bicycles and pedestrians.

E. Develop Transportation Management Plan (TMP) (Not applicable for Facilities projects)

The PA Turnpike PM or DM shall review the TMP Requirements Flow Chart before the project kick-off. Even if the project does not meet TMP requirements, per the flow chart, the PA Turnpike PM or DM shall meet with the Manager of Incident Management and Traffic Operations and Manager of Traffic Engineering to confirm a TMP is not needed.

The PA Turnpike Manager of Traffic Engineering and Manager of Incident Management and Traffic Operations will confirm whether a TMP is necessary for the project. If a TMP is required, the PA Turnpike PM or DM shall work with the PA Turnpike Manager of Traffic Engineering and Manager of Incident Management and Traffic Operations to determine the intensity of the TMP and milestone dates. The DC shall begin obtaining all pertinent information to complete the TMP after the project kick-off. At a minimum, the project TMP shall be updated by the DC at the 60%, 75%, Pre-Final PS&E and Final PS&E submission dates. The TMP is intended to be a living document and may need to be updated through the first few construction meetings.

Before submitting a TMP for review at the above milestone dates, the PA Turnpike PM or DM should verify that the DC has included the sections as shown in the TMP Requirements Flow Chart.

F. Sign Replacements (Major Guide and/or Secondary Signs) (Not applicable for Facilities projects)

The PA Turnpike PM or DM will ask the DC to evaluate the age and condition of signs to determine whether or not replacement is necessary. The DC will prepare fabrication drawings for the Guide Signs or overhead bridge road name signs to be replaced. The DC will coordinate with the PA Turnpike PM to obtain sign and sign location data through the **PA Turnpike Sign**

Inventory System, when available. Otherwise, the DC will need to obtain sign and sign locations from other sources.

The PA Turnpike PM or DM will ask the DC to coordinate preliminary sign structure plans and specifications with the PA Turnpike Bridge Unit. The PA Turnpike PM or DM will ask the DC to verify and note utility locations as they relate to the proposed sign structure foundations, according to the utility coordination process identified in Part C – Preliminary Design, Section 7 – Utility Design.

G. ITS Coordination – Impacts and Needs

The PA Turnpike PM or DM will coordinate with the DC and the PA Turnpike Manager of Incident Management and Traffic Operations or designee to identify existing ITS devices within the project limits. Potential impacts to existing ITS devices or the replacement or installation of new ITS devices should be discussed and coordinated as appropriate for the project. This also applies to in-pavement TPMS sensors located within the service plaza ramps and parking areas.

H. Smart Work Zone (SWZ) Coordination

The PA Turnpike PM or DM will review the SWZ Deployment Guidelines and coordinate with the DC, PA Turnpike Manager of Incident Management and Traffic Operations, and PA Turnpike Manager of Traffic Engineering to identify potential SWZ needs during construction.

At the start of the project, some information needed to complete the SWZ Guidelines Worksheet will be unknown, but the general characteristics of the work zone will give an idea if SWZ treatments will be useful. As the project progresses to 60%, 75%, Pre-Final PS&E, and Final PS&E, the worksheet should be finalized.

The SWZ Deployment Guidelines do not prescribe what SWZ applications to use during construction. It is intended to help determine whether or not SWZ will be beneficial during construction. The PA Turnpike PM or DM will coordinate with the DC, PA Turnpike Manager of Incident Management and Traffic Operations, and PA Turnpike Manager of Traffic Engineering to identify SWZ applications to use during construction.

I. Receive/Review Preliminary Traffic Deliverables

PA Turnpike Traffic Engineering and Operations Department personnel will review preliminary traffic submissions on PA Turnpike-managed projects, as noted above. If a DM is assigned to a project, the DM reviews submissions and coordinates formal or informal discussions, as appropriate, with PA Turnpike Traffic Engineering and Operations Department personnel. The PA Turnpike PM or DM submits the DFV submission to the PA Turnpike Traffic Engineering and Operations Department for review and comment.

J. Related Information

- Part C – Preliminary Design, Section 7 –Utility Design
- PennDOT's Traffic Data Reports

- PA Turnpike Sign Inventory System
- Traffic Management Plan (TMP) Requirements Flow Chart
- Smart Work Zone (SWZ) Deployment Guidelines

C.05 Environmental Items

A. Introduction

Because the environmental investigations for any project may vary greatly, it is difficult to capture all of the potential studies that might be required. The Initial Field View (Part A – Project Initiation, Section 3) task and the Scope of Work (Part A – Project Initiation, Section 4) task will be used to establish the specific investigations required for each project. The investigations that may take place during the project initiation phase are listed below.

- Preliminary RMA vs Non-RMA calculations to determine E&S and NPDES permit requirements
- Wetlands Delineation Field Work
- Stream and Aquatic Habitat Field Survey
- Chapter 93 Classification Determination of Area Streams
- Preliminary Jurisdictional Determination Report
- Preliminary Jurisdictional Determination Agency Field View
- Wetlands/Streams Functional Assessment Field Work
- Wetlands/Streams Functional Assessment Report
- Initiate limited search for potential wetland/stream mitigation opportunities including mitigation banking
- Pennsylvania Natural Diversity Inventory (PNDI) Search/Threatened and Endangered Species Early Coordination Letters
- Threatened and Endangered Species Field Surveys
- Advanced Tree Clearing
- Land Use/Land Cover Mapping
- Farmlands Data (as related to the need for Agricultural Lands Condemnation Approval Board [ALCAB], which should be needed very infrequently)
- Unique Geological Resources Inventory
- State Game Lands, State and National Forests and Parks, Natural Landmarks, Sanctuaries and/or Refuges
- Groundwater Information
- Federal Emergency Management Agency (FEMA) Mapping to Determine Floodplains/Floodways
- Phase 1 Environmental Site Assessment – Waste Sites
- Historic Structures Background Information Review
- Area of Potential Effect (APE) Establishment for Cultural Resource Survey
- Pennsylvania Historical Resource Survey (PHRS) Forms/ Determination of Eligibility Report Preparation

- Archeology– Background Information Review
- Geomorphological Field Work
- Phase I Field Work
- Phase I Archeological Survey Report
- Noise Monitoring Plan Preparation
- Conduct Noise Monitoring in the Field
- Noise Model Development
- Determine where noise impacts occur
- Determine if noise abatement is warranted, feasible, and reasonable
- Noise Analysis Report Preparation

The following are additional investigations on Facilities projects.

- Asbestos Survey Report
- Lead Survey Report
- Underground Storage Tank Report
- Air Quality Survey Report
- Water Quality Report
- Wastewater Management

Coordination of many of these projects with the various regulatory agencies will often require the scheduling of meetings with these agencies. These meetings may be office meetings, field meetings or a combination. The PA Turnpike Project Manager (PM) should consult with the Environmental Unit staff and, if applicable, with the assigned Design Manager (DM) to determine who will coordinate the dates, times, locations, and agendas for the meetings.

B. Receive/Review Reports and Provide Comments

The Design Consultant (DC) prepares draft reports for investigations and submits them to the PA Turnpike PM or DM for review. Note that many of the individual studies listed above may be submitted in a single report. For instance, all of the Wetland Delineation and Wetland Functional Assessment work may be submitted as one document. Similarly, Historic Structures Investigations, Archeological Investigations, and the multiple phases of the Noise Analysis Evaluations may be included in one document.

The PA Turnpike PM or DM provides these reports to the assigned Environmental Unit liaison for review. The Environmental Unit Liaison reviews the documents and provides comments, usually electronically, to the PA Turnpike PM, DM, and/or the DC. The reviewer is available to answer questions or clarify comments at the request of the PA Turnpike PM, DM, or DC.

C. Approve Deliverables

Upon resubmission of the subject reports, the PA Turnpike PM or DM provides the report to the assigned Environmental Unit liaison to verify that the comments have been addressed and to review any new information that has been included. The Environmental Unit Liaison coordinates with the PA Turnpike PM or DM and confirms whether or not the report is acceptable. If it is not, the Environmental Unit Liaison again provides comments, usually electronically, to the PA Turnpike PM or DM.

Many of the documents prepared during this phase will be submitted to the appropriate regulatory agencies upon the PA Turnpike's satisfaction. For example, a Wetland Delineation and Functional Assessment Report will be submitted to the U.S. Army Corps of Engineers (USACE) and PADEP Regional Permit Coordination Office (RPCO), and cultural resource reports will be submitted to PA Historical Museum Commission (PHMC). The documents may be submitted by the PA Turnpike Environmental Unit Liaison or directly by the DC, if approved in advance by the PA Turnpike Environmental Unit Liaison.

If the regulatory agency provides comments on a submission, the PA Turnpike Environmental Unit Liaison will direct the DC as to the course of action. The DC may be instructed to address the comments and resubmit the report for further review.

D. Environmental Tracking Charts/Tables

The Environmental Project Status Form is used to monitor the status of the various environmental tasks. The DC can update the fields in the form with necessary information during the Design phase. The DC updates this form for every design review meeting as needed.

Note: With few exceptions, projects are 100% PA Turnpike-funded, so the preparation of National Environmental Policy Act (NEPA) documents is not required. In the event that federal funds are used for a project, the FHWA and PennDOT will be involved, and NEPA scoping will be necessary. Those projects will be handled on a case-by-case basis, and further coordination with the PM and Environmental Unit will be required.

E. Related Information

- Part A - Project Initiation, Section 3 - Initial Field View
- Part A - Project Initiation, Section 4 - Scope of Work
- Part C – Preliminary Design, Section 9 – Stormwater Management
- Environmental Project Status Form
- PennDOT Pub 584 – Appendix 12E – Guidance on Chapter 102 Requirements for Road Maintenance Activities
- PA DEP Chapter 102 – Road Maintenance Activities FAQ

C.06 Right of Way

A. Introduction

The following tasks will be performed on projects in which the Preliminary Design Scope of Work indicates the potential need for Right-of-Way (ROW) acquisition and/or survey activities outside of the existing Legal ROW:

- Obtain Property Owner Information
- Send "Notice of Intent-to-Enter" Letters
- Receive and Review Preliminary ROW Documents

B. Obtain Property Owner Information

The Design Consultant (DC) obtains the following Property Owner information for the project and submits the data to the PA Turnpike Project Manager (PM) or Design Manager (DM):

- Tax Maps
- Property Owner Names (if any chance of property impacts)
- Tax Parcel Number for Each Parcel
- Property Address
- Owners' Tax Office Mailing Addresses
- Municipality: Borough, Township, Village, or City
- County
- Citation (Instrument Number, Orphan's Court Docket, or Deed Book and Page) by which Owner Received Title
- Full Copy of Conveyance Instrument
- Associated Subdivision, Survey Boundary Plans

C. Send "Notice of Intent-to-Enter" (NOITE) Letters

Following the sample two-page NOITE letter from the Design Consistency Guidelines (DCGs), the DC drafts a letter specific to the project and submits the letter to the PA Turnpike PM or DM for review. If the letter is acceptable, the PA Turnpike PM or DM submits the letter to the PA Turnpike Legal Department for review and signature on the second page.

The DC identifies the property owners that will receive the NOITE. The PA Turnpike PM creates a list within the ROW Tracker Application to track the NOITE letters including dates the letters were received and comments for returned letters in the detail remarks column. The PA Turnpike PM or DM supplies sufficient PA Turnpike letterhead and envelopes to the DC. The DC prepares and mails the NOITE letters to the property owners within the project area. The DC prepares page one on PA Turnpike letterhead, addressing the letter to the individual property owner, and attaches a duplicate of page two with the Legal Department's signature.

The DC mails out the letters to property owners by U.S. Certified Mail, return-receipt (green card) requested. For Facilities projects, PA Turnpike PM may prepare and mail out letters to project owners.

If the PCDS is utilized, the ROW Tracker App is used for ROW tracking and Notice of Intent to Enter is maintained as its own list in the App. If a PCDS is not being used, the DC creates a tracking chart, utilizing the PA Turnpike Notice of Intent-to-Enter Excel Tracking Chart template, and updates the chart as needed.

If ANY NOITE Letters are returned as "undeliverable" or delivery is "refused" by the property owner, the DC immediately notifies the PA Turnpike PM or DM, who then immediately notifies the PA Turnpike Legal Department for action.

The DC provides the Certified Mail Delivery Receipts (green cards) and all letters returned as "undeliverable" or "refused" to the PA Turnpike PM or DM as a deliverable.

D. Receive/Review Preliminary ROW Documents

The DC reviews the ROW documents to determine if Property Lines "match-up" from the deeds. If there are any overlaps, discrepancies, or gaps between the deeds, the DC presents the Property Lines with metes and bounds for each deed on a mosaic and submits the mosaic to the PA Turnpike PM or DM for review.

In addition, in the Preliminary Design phase, the DC establishes the Legal ROW Baseline, Legal ROW Lines, and Legal ROW Lines for Limited Access; determines the Required ROW Lines from Preliminary Roadway Design; and coordinates any utility relocations to determine the potential need for Substitute ROW.

The DC submits the Best-Fit centerline alignment to the PA Turnpike PM or DM, for subsequent review by the PA Turnpike ROW Unit. **(Not applicable for FEMO projects)**

The flow path for the receipt/review of Preliminary ROW Plans is from the DC to the PA Turnpike PM or DM, to the PA Turnpike Design Services Unit, to the PA Turnpike Legal Unit. This ensures that the PA Turnpike Design Services Unit reviews the Plans prior to PA Turnpike Legal Unit review.

E. Related Information

- Part C – Preliminary Design, Section 9 – Stormwater Management
- Design Consistency Guidelines (DCGs)
  - Chapter 6 – Right-of-Way
  - Chapter 20 – Notice of Intent to Enter (NOITE) Letter Example (Figure 20.4)

C.07 Utility Design

A. Research Utilities within Project Limits

The PA Turnpike Project Manager (PM) or Design Consultant (DC) requests existing data from the assigned Utility Liaison (UL). The UL provides the current PA Turnpike utility listing from the

Utility Log and Utility Management Application (UMA). On large scale projects, the UL will also supply copies of the Utility files and existing agreements. If the project is using a PCDS the information is placed in the Utilities/FIO folder using the template in the Tracking Charts folder under Project Management. The Design Consultant (DC) is notified when information is added or updated in the FIO folder.

The PA Turnpike PM or DC obtains additional information through the PA One-Call System, field verification (to verify indicated facilities) and courthouse research, if necessary. For in-house projects, the UL will perform the One-Call. The UL will identify existing PA Turnpike utilities using the UMA for all projects. The PA Turnpike PM or DC notifies the UL of any incorrect data from PA Turnpike Utility Listing.

The PA Turnpike PM or DC populates the PA Turnpike Utility Tracking Chart with utility data. If the project is utilizing a PCDS, the PA Turnpike Utility Tracking Chart is maintained in the Project Management/Tracking Chart folder. (Note: Facilities does not typically use a Utility Tracking Chart but if the project warrants and is requested by the UL, a Utility Tracking Chart should be used)

B. Utility Verification

The DC or PA Turnpike UL sends a Letter of Project Notification, with plans provided by the DC, to Utility Companies for verification of utility type, size, and location. The PA Turnpike UL notifies FOMC vendor to obtain the PA Turnpike Fiber type, size and location. The DC or PA Turnpike PM updates the project plans with information received from Utility Companies and PA Turnpike FOMC. On large-scale projects, the PA Turnpike UL, and DC, and Facilities-PM may also conduct an Initial Informational Utility Meeting.

The PA Turnpike UL, DM DC, and Facilities PM identify necessary locations for Subsurface Utility Engineering (SUE) to locate underground facilities, with approval from the PA Turnpike PM.

C. Related Information

- Utility Log
- Utility Tracking Chart
- Design Consistency Guidelines (DCGs)
  - Chapter 13 – Utilities
  - Chapter 14 – ITS Devices and Fiber Optic Infrastructure

C.08 Geotechnical Design

A. Review of Submissions

Submissions, as determined at the project Kick-Off Meeting, may include some or all of the following:

- Reconnaissance Plan
- Subsurface Exploration Planning Submission (SEPS)
- Geotechnical Data Submission
- Preliminary Geotechnical Engineering Report (GER)

Early and consistent coordination and communication is key to keeping the geotechnical items in focus and moving as this area is typical via separate open-end drilling programs.

1. *PA Turnpike-Managed Projects*

- PA Turnpike Geotechnical Liaison receives and reviews all submissions from the PA Turnpike Project Manager (PM).

2. *Projects with Design Managers*

- Submissions are made to the Design Manager (DM), with copies/notification made to PA Turnpike Geotechnical Liaison.
- The DM performs initial review of geotechnical submissions.
- The DM coordinates formal or informal discussions, as appropriate, with the Geotechnical Design Management Team.
- The DM, in coordination with the PA Turnpike Geotechnical Liaison, is to determine which submissions are required in Final Design.
- The DM provides Final geotechnical comments to PA Turnpike Geotechnical Liaison.
- The PA Turnpike Geotechnical Liaison coordinates comments with the DM and PA Turnpike PM.
- When warranted and/or requested, the DM arranges for a Special Geotechnical Meeting with the PA Turnpike Geotechnical Liaison to discuss the project.

B. Drilling Contract

Verify NOITEs have been issued or reissued if it's been a considerable amount of time since last notice (at the discretion of the PA Turnpike PM), before initiating subsurface investigations.

It is preferred to perform drilling via PA Turnpike Open-End Drilling Contracts. The PA Turnpike Geotechnical Engineering Manager, with input from the project PA Turnpike Geotechnical Liaison, determines whether drilling is to be conducted under an existing PA Turnpike Open-End Drilling Contract or contracted by the Design Consultant (DC), DM, or Project Geotechnical Consultant. Pennsylvania Turnpike Drilling Protocols for Open-End Drilling Contracts are outlined in Appendix K of the PA Turnpike DCG. The protocol document identifies roles and responsibilities of project stakeholders.

Maintenance and protection of traffic (MPT) on the PA Turnpike roadways is preferred to be performed by the PA Turnpike Maintenance Department. The ability of the PA Turnpike Maintenance Department to support the drilling activities will be determined on a case-by-case basis through the PA Turnpike Drilling Manager. If the PA Turnpike Maintenance Department is unable to provide traffic control, coordination with the PA Turnpike Geotech Liaison and Drilling

Manager will be required. Refer to the DCG Appendix C for Maintenance and Protection of Traffic (MPT) Protocols for Drilling Contracts.

A meeting in advance of submission of the SEPS (a Pre-SEPS meeting) may be warranted for complex projects or where multiple drilling phases are desirable.

Drilling activities may require permits for access (HOP for PennDOT, or other locales that may have special requirements; railroads; as well as private entities), and/or environmental permitting for site access, stream crossings, etc.

C. Related Information

- Design Consistency Guideline (DCGs)
  - Chapter 8 – GEOTECHNICAL DESIGN
  - Appendix C – MPT Protocols for Drilling Contracts
  - Appendix K – Pennsylvania Turnpike Drilling Protocols

C.09 Stormwater Management

A. Introduction

Stormwater management design is a critical design element impacting right-of-way needs and design timelines. The stormwater design process should be initiated early in preliminary design and no later than following Line and Grade approval. The following items are to be included in the preliminary stormwater design process:

- Review of applicable state and local stormwater regulatory requirements to define applicable design standards.
- Desktop site characterization including evaluation of existing topography, land use, cover conditions, drainage, soils, geology, groundwater, floodplains, location of potable water wells and other water supplies, identification of tributary waters, Chapter 93 classifications for tributary waters, local flooding or other drainage issues, and any other pertinent available information to inform stormwater design. EPA's Water Resource Registry (WRR) can be used as a source of information for site characterization and initial BMP siting.
- Coordination of information between consultants doing Environmental and Stormwater design:
  - Wetland and Waters Delineations
  - Chapter 93 Classification Determination of Area Streams
  - Agency Jurisdictional Determinations (Preliminary and/or Final)
  - Land use/Land Cover Mapping
  - Unique Geologic Resource Inventory
  - Groundwater Information
  - FEMA Mapping
  - Environmental Site Assessments Data
  - Pennsylvania Historic Resource Information

  - Geomorphic Assessments
  - Stormwater Control Measure Operations and Maintenance Manual (SCMOM)
  - Other information as appropriate
- Develop a conceptual stormwater management plan based on available desktop information supplemented by early action environmental investigations. The Conceptual plan should include identification of potential SCM locations and SCM types required to meet regulatory requirements with back-up alternatives. All SCM types should be considered for application as applicable.
- Identify potential sites for early field soils investigations and prepare an early action soil and infiltration testing plan.
- Advance conceptual stormwater design to preliminary/DFV level including:
  - Preliminary PCSM plans, details, and calculations documenting stormwater control measure (SCM) locations, size, and configuration.
  - SCM grading and detailing
  - Establish ROW and easement requirements necessary to accommodate proposed SCM's.
  - Prepare a soils evaluation and infiltration testing plan for implementation during Final Design.
- Schedule Project Coordination meeting to introduce the project to the appropriate PADEP Regional Permit Coordination Office (RPCO) staff and the applicable County Conservation District, identifying any special considerations or constraints (Optional). A required pre-application meeting should be scheduled prior to permit submission to the county conservation district(s) or RPCO.

B. Receive/Review Reports and Provide Comments

The Design Consultant (DC) prepares draft reports for investigations and submits them to the PA Turnpike PM or DM for review. Reports shall be prepared documenting the conceptual stormwater analysis and early action soil and infiltration testing, and preliminary/DFV stormwater analysis and soils investigation and infiltration testing plan.

The PA Turnpike PM or DM provides these reports to the assigned stormwater management specialist and/or Environmental Unit Liaison for review. The PA Turnpike staff member reviews the documents and provides comments to the PA Turnpike PM, DM, and or DC. The reviewer is available to answer questions or clarify comments at the request of the PA Turnpike PM, DM, or DC.

C. Approval of Deliverables

Upon resubmission of the subject reports, the PA Turnpike PM or DM provides the reports to the assigned PA Turnpike Environmental Unit Liaison to verify that all comments have been addressed and to review any new information that has been included. The PA Turnpike Environmental Unit Liaison coordinates with the PA Turnpike PM or DM and confirms whether or not the report is acceptable. If it is not, the PA Turnpike Environmental Unit Liaison again provides comments to the PA Turnpike PM or DM.

D. Related Information

- Design Consistency Guidelines (DCGs)
  - Chapter 7 – Drainage
  - Chapter 16 – Stormwater Management

- Part C – Preliminary Design, Section 5 – Environmental Items

- Part C – Preliminary Design, Section 6 – Right of Way

- Part C – Preliminary Design, Section 8 – Geotechnical Design

C.10 Deliverable Coordination/Tracking

A. Verify Deliverables

The PA Turnpike Project Manager coordinates with the Design Consultant (DC) or Design Manager (DM) to verify receipt of the deliverables identified for the project in the Preliminary Design Initiation process. The deliverables will vary from project to project, depending on project size and complexity. See Part C – Preliminary Design, Section 1 – Initiation for a list of typical deliverables that may be required on a project.

If the project is using a PCDS, the deliverables are tracked and submitted through the PCDS File Manager Application in the Project Management/Tracking Charts folder. If the project does not use a PCDS, then a **Deliverables Tracking Chart** is maintained in the project file structure under the Project Management/Tracking Charts folder. For Facilities projects, the PM will maintain the Project Management Folder. The deliverables are prioritized with due dates to ensure the project is completed on time.

B. Related Information

- Part C – Preliminary Design, Section 1 – Initiation

C.11 PennDOT Coordination

A. Initial PennDOT Coordination

The purpose of initial coordination with PennDOT in preliminary design is to make PennDOT aware of the project and understand PennDOT's review and approval requirements, including the need for a Highway Occupancy Permit (HOP). The PA Turnpike Project Manager (PM) or Design Manager (DM) provides PennDOT with a general scope of work and the anticipated time frame for project design and construction; requests that PennDOT provide any information it may have on the project area, such as as-built plans, traffic volumes, accident history, etc.; and confirms whether or not there are any proposed or ongoing PennDOT projects in the vicinity that will conflict with the PA Turnpike's project.

The PA Turnpike PM or DM coordinates this effort by contacting the appropriate PennDOT District Turnpike Coordinator by telephone or email or, if warranted by the project size, schedules a meeting. The meeting is attended by the PA Turnpike PM, DM, Design Consultant (DC); the appropriate PA Turnpike Design Unit Liaison, if needed; and the PA Turnpike PM's supervisor and/or other PA Turnpike senior staff, if needed.

B. Document Results of Initial Coordination and/or Meeting

The PA Turnpike PM or DM should obtain written confirmation on whether a HOP is needed for the project. If an HOP is required for the project, the process can vary across the state and the PA Turnpike PM or DM must coordinate during preliminary design with the PennDOT District coordinator to determine application expectations for their respective District. For any PennDOT coordination meetings, DC or PA Turnpike PM or DM prepares minutes to document the meeting and note any action items that require follow-up.

C. Preliminary Plans and Report Submissions

As part of initial coordination with PennDOT, the PA Turnpike PM should clarify PennDOT's design review and submission requirements. The DC or PA Turnpike PM or DM forwards preliminary plans and reports to PennDOT for review and comment as required, including the Safety Review, DFV, and TS&L. (Not applicable for Facilities projects). These reviews are coordinated through the PennDOT District Turnpike Coordinator. Comments are discussed and addressed in the project plans, as deemed feasible and reasonable.

The DC or PA Turnpike PM or DM invites PennDOT representatives to attend the DFV/TS&L field view. This invitation is sent to the PennDOT District Turnpike Coordinator. For projects requiring a HOP, Figure 4 provides an overview of the HOP coordination and submission process.

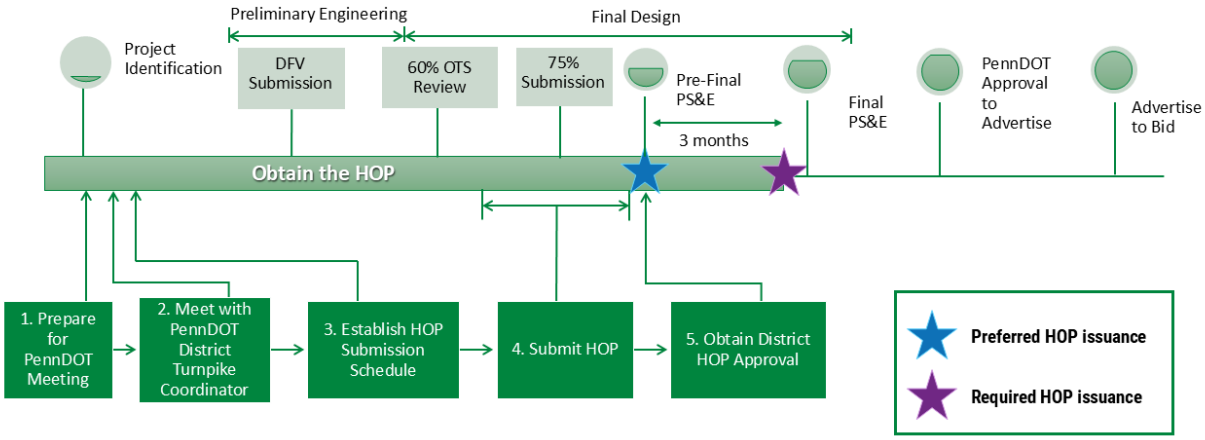

Figure 4. Overview of PennDOT HOP Process

C.12 DOM Documentation Audit

A. Introduction

The purpose of the DOM Documentation Audit is to verify that the DOM processes regarding project documentation are being followed in accordance with the PA Turnpike's Office of Audit and Advisory Services, in response to an independent Capital Projects Risk and Control Assessment Audit in 2013.

B. Documentation Requirements

The PA Turnpike has developed and defined documentation requirements and processes, including:

- Systems and tools for managing project documentation;
- Clearly defined roles and responsibilities for managing project documentation;
- Consistent project file structures;
- Continuous training to key personnel.

C. Preliminary Design Documentation Audit

PA Turnpike management requires that the PA Turnpike Project Manager (PM) perform continuous monitoring against the established management processes to ensure project files are maintained within the prescribed policies and procedures.

The PM should use the Project Manager Audit Checklist to record and audit all project documentation required in the DOM.

At the completion of Preliminary Design, the PA Turnpike PM should submit the continuously completed PM Audit Checklist to his or her supervisor to verify that all documentation has been continuously monitored.

Part D – Final Design

D.01 Initiation

A. Receive Detail Schedule

The Design Consultant (DC), in conjunction with the PA Turnpike Project Manager (PM) or Design Manager (DM), develops the project schedule. The schedule is coordinated with the PA Turnpike Category Manager and the Contract Management Services Manager to develop the letting schedule dates.

The DC prepares and submits a detailed schedule for all the necessary tasks associated with the approved scope of work for the final design. The detailed schedule is submitted in either Excel or Microsoft Project, with milestone dates clearly identified.

The PA Turnpike PM or DM reviews the submission to verify that all milestone dates are included and that the established completion date is correct. The PA Turnpike PM or DM provides comments. The DC incorporates the required modifications and submits a final schedule.

If the project is using a PCDS, the PA Turnpike PM or DM saves the detailed schedule in the Schedule folder within the Project Management folder or Facilities project folder if PCDS is not used. The Schedule folder also contains an Excel spreadsheet named Milestones Design, which is a comprehensive list of possible milestones for design projects. Estimated and actual start and completion dates should be established for each milestone used based on the project tasks. If using PCDS the Milestones app should be used to create a list of milestones for each construction contract. If not using a PCDS, the list is saved in the project file structure, under the Project Management/Schedule folder.

The PA Turnpike PM reviews the schedule on a monthly basis. If updates are needed, the PA Turnpike PM provides comments to the DC, who makes the revisions and submits an updated schedule.

PA Turnpike PM also reviews and updates as needed the milestones for their projects in the Contract Status database on a monthly basis.

B. Receive Project Specific Quality Management Plan

In accordance with the PA Turnpike Quality Assurance (QA) Program, implemented April 2012, the DC develops a Project Specific Quality Management Plan (PSQMP) for all projects. During the agreement process, the PA Turnpike PM or DM provides the PA Turnpike QA Program documents necessary to prepare the PSQMP to the DC. This should occur soon after a satisfactory proposal is submitted and prior to the Kick-off Meeting.

The DC prepares and submits the PSQMP to the PA Turnpike PM or DM or to the PA Turnpike Category Manager for review within 45 days of agreement execution. The PSQMP should be

submitted in accordance with the guidelines established in the PA Turnpike Project Specific Quality Management Plan (PSQMP) Guidelines.

The PA Turnpike PM reviews the submission to verify that all objectives are met. The PSQMP objectives are to achieve the following:

1. Identify key project quality roles and resources.
2. Identify and describe quality processes and procedures applicable to the project.
3. Identify specific technical references to be followed, as applicable.
4. Serve as the one-stop reference tool for the PM and other project staff in carrying out steps related to quality control and quality assurance.
5. Provide the PA Turnpike with a concise picture of the DC's quality-related processes and procedures for this specific project.

If all objectives are met, the PA Turnpike PM or DM accepts the PSQMP in writing. If the project is using a PCDS, the PSQMP is saved within the project file structure, under the Project Management folder. If there are multiple PSQMP documents, then a PSQMP folder is created within the Project Management folder.

C. Receive Cash Drawdown

The DC prepares and submits a cash drawdown schedule that details projected dollars to be spent on a monthly basis for the entire final design life. The cash drawdown will be submitted in Microsoft Excel.

The PA Turnpike PM reviews the submission to determine if dollar amounts are reasonable and to ensure that the total negotiated amount will be utilized by the completion date established earlier in the process. The PA Turnpike PM can provide recommendations for the cash drawdown. The DC reviews the comments and revises the cash drawdown, if needed.

If the project is using a PCDS, the PA Turnpike PM posts the drawdown schedule to the consultant specific Shared Confidential/Invoice folder.

The PA Turnpike PM reviews the cash drawdown on a monthly basis. If updates are needed, the PA Turnpike PM provides comments to the DC, who makes the needed changes and submits the updated cash drawdown. At a minimum, the DC will submit an updated cash drawdown on a quarterly basis.

D. SAP Updates

1. ***Project Capital Planning***

On a quarterly basis, the PA Turnpike PMs are asked to review and update, if necessary, the planned values and provide this data to their Category Managers. The best time to review and update planned dollars is when the PA Turnpike PM is processing an invoice. The PA Turnpike PM revises the planning values for each planned WBS Element based on the most recent cost estimates and/or cost drawdown. The planning values need to be broken down into months for the current fiscal-year values and by year for any subsequent fiscal years.

The Category Manager reviews each individual project, along with its overall category values. After review and approval by the Category Manager, the Program Manager collects and forwards all planned costs to the PA Turnpike Planning Unit to be inputted in SAP. See Reference Lesson 1 of the LOPS-02 Manual for more detailed information.

2. *Project Schedule*

a. ***SAP***

At the beginning of the project, the PA Turnpike PM enters the forecast dates for the Level 2 WBS Design and Construction into SAP, under Part A – Project Initiation, Section 1 – Project Set-up. The project schedules should be reviewed on a monthly basis. If the project schedule changes, the PA Turnpike PM must update the forecast dates in SAP. The procedure to update schedule information is included in Lesson 4 of the LOPS-02 Manual.

When a Level 3 WBS Element is created for the construction contract per Part D – Final Design, Section 2 – Define Construction Contracts, the PA Turnpike PM must input the forecast dates for the Level 3 WBS element. These forecast dates may change and should be reviewed on a monthly basis.

b. ***12-Quarter Planning Schedule***

At the beginning of the project, the PA Turnpike PM also enters the forecast dates in the **Microsoft Dynamics CRM.** The 12-Quarter Planning Schedule is a report located within the **Microsoft Dynamics CRM**. The project schedules should be reviewed on a monthly basis. If the project schedule changes, the PA Turnpike PM must update the forecast dates in the **Microsoft Dynamics CRM**.

Several of the 12-Quarter Planning Schedule dates entered will be locked down. Any changes to the 12-Quarter Planning Schedule will need to verify with Contract Management if the Date Change Request Form is required. Changes to any project on the 5-Quarter Planning Schedule will require the **Date Change Request Form** to be completed and approved. The dates cannot be changed without this form being completed and approved.

E. Identify Deliverables

After the Scope of Work is finalized, the DC prepares and submits a list of design deliverables. The DC prepares this list by reviewing each task in the final design scope of work. Each task should have some form of deliverable. Below is a list of typical Final Design deliverables that may be required for a project.

- Roadway Design
- Alignment Studies (Not applicable for Facilities)
- Line and Grade Submission
- Typical Sections Submission
- HOP (Widening and Signal)
- Roadway Drainage and Stormwater Management (SWM)
- Deep Pipe Report (Not applicable for Facilities)

- Culvert Hydrologic and Hydraulic (H&H) Report
- Cross-Sections
- Constructability Review
- 60% Over the Shoulder (OTS) Review
- Contract Management Meeting (Special Provisions)
- 75% Design Submission
- 90% Design Submission
- Final TS&L 3
- Culvert TS&L and Foundation Report
- Wall TS&L
- Test Pits and/or Borings for Stormwater Soils Evaluation
- Infiltration Tests
- Test Borings
- Foundation Reports
- Structure Plans
- Roadway GER (Not applicable for Facilities)
- Temporary Shoring Data Report (Generally, not applicable for Facilities)
- Utility Coordination
- Pavement Marking Plans
- Lighting
- Roadside Development (Not applicable for Facilities)
- Erosion and Sedimentation Control (E&SC) Plan
- Environmental Studies
- Traffic Signal Plans (Not applicable for Facilities)
- Traffic Control Plan
- ITS Device Plans
- Fiber Optic Plan (including coordination, protection, relocation, etc.)
- Transportation Management Plan
- Contract Documents
- NPDES Permit
- Joint Permit Application
- Chapter 105 Permit (from DEP)
- Section 404 Permit (from U.S. Army Corps of Engineers)
- Right-of-Way Plans
- Toll Plaza Design
- List of Proposed Geotechnical Documents Available to Contractors (GDAC)
- Geotechnical Documents Available to Contractors (GDAC)
- Final PS&E
- Design Calculations
- Asset Breakdown Form
- CAD files
- Smart Work Zone System Plans

The PA Turnpike PM or DM reviews the list of design deliverables. If needed, the PA Turnpike PM or DM provides comments. The DC addresses the comments and submits a final list. See Part D – Final Design, Section 11 – Deliverable Coordination/Tracking for tracking of deliverables.

F. Process First Invoice (Final Design Phase)

The PA Turnpike PM will not process the first invoice until the following items, as described above, are provided by the DC:

1. Detailed Schedule
2. PSQMP
3. Cash Drawdown
4. Design Deliverables List

G. Related Information

- Milestones Design
- PA Turnpike Project Specific Quality Management Plan (PSQMP) Guidelines
- Project Systems Complex Project Lifecycle Processing – LOPS-02 Manual
- Date Change Request Form
- Microsoft Dynamics CRM
- Constructability Review Guidance
- Part A - Project Initiation, Section 1 – Project Set-up
- Part D – Final Design, Section 2 – Define Construction Contracts
- Part D – Final Design, Section 9 – Environmental Items
- Part D – Final Design, Section 11 – Deliverable Coordination/Tracking

D.02 Define Construction Contracts

A. Introduction

The purpose of defining construction contracts is to identify the schedule of all construction contracts for the project and plan costs in SAP for each construction contract. While most projects will include only one construction contract, larger projects may be split up into two or more construction contracts or have early-action construction contracts. The number of construction contracts will be determined by the PA Turnpike Project Manager (PM), the Design Unit Manager, and the Assistant Chief Engineer – Design.

For Facilities projects, most projects will include multiple prime construction contracts. The number of construction contracts will be determined by the Facilities PM and the Director of Facilities.

B. Create WBS, Network, and Activity in SAP

The PA Turnpike PM creates a Level 3 WBS under the Level 2 CONSTRUCTION WBS for each construction contract proposed in the project. For more detailed information on creating WBSs, refer to Lesson 2 – Project Structures of the LOPS-02 Manual. The PA Turnpike PM also creates a network under the new WBS. The Level 3 WBS and network number are needed so they can be added into the contract documents for plan development. The activity for the Level 3 WBS is **NOT** created at this time. The Contract Management Services Manager creates the activity at the time of bidding of the construction contract.

If project delivery is via purchase order or job order contract, the Facilities PM will create activity at time of bidding the project or issuance of job orders.

C. Related Information

- Project Systems Complex Project Lifecycle Processing – LOPS-02 Manual

D.03 Letting Schedule

A. Introduction

The purpose of the PA Turnpike Letting Schedule is to plan for the procurement of construction services for projects required to maintain and upgrade the PA Turnpike system. The Letting Schedule is planned based on need and project readiness, utilizing internal and external resources to execute the adopted Capital Plan. In addition, in developing the Letting Schedule, the PA Turnpike strives to balance PA Turnpike project needs with contractor availability to maximize the potential to obtain cost-effective bid prices for PA Turnpike projects.

B. Quarterly Updates

The Contract Management Services Manager (CMSM) in Engineering - Construction is responsible for coordinating the Letting Schedule. The CMSM obtains input for quarterly Letting Schedule updates from Engineering Design and Facilities personnel to provide the bid letting outlook for the next five quarters. The CMSM also coordinates with PennDOT to avoid potential conflicts on large and/or complex projects. The PA Turnpike Project Manager's (PM) role is to review the most recent Letting Schedule and provide updated information to the Design Unit Manager responsible for the project. Update information may require the PA Turnpike PM to determine the status of permit information, ROW information, or other clearance factors that may affect the project schedule. When a project-scheduled PS&E delivery date is within the five-quarter Letting Schedule, the PA Turnpike PM informs the responsible Design Unit Manager that the project must be included on the Letting Schedule.

D.04 Progress Submissions

A. Determine Progress Submissions Required

Based on project scope, size, and complexity, the PA Turnpike Project Manager (PM) determines the type of progress submissions that are required. Smaller projects may only need a Pre-Final PS&E and Final PS&E Submission, while larger, more complex projects will also require a 60% OTS Review and/or a 75% Submission.

1. ***60% Over the Shoulder (OTS) Review***

The 60% OTS plan reviews are to be conducted at regularly scheduled Design Review Meetings.

Refer to the 60% OTS General Guidance and the PA Turnpike – Design Deliverable Requirements for more information.

2. ***Contract Management Meeting (Special Provisions)***

The PA Turnpike PM must schedule a meeting between the Contract Management Services Manager, the project Contract Management liaison, the PA Turnpike PM, and the design consultant. This meeting shall be scheduled when the special provisions book and item numbers are being developed. The purpose of this meeting is to review PA Turnpike guidance on the development of item numbers, descriptions, and special provisions.

3. ***75% Submission***

The 75% Submission provides an update on the progress of final design. This submission includes plans, specifications, and a construction cost estimate, along with all other supporting documents from final design. The unit leader and/or supervisor must review all compiled 75% Submission comments with the PA Turnpike PM.

Refer to the 75% Submission Guidance and the PA Turnpike – Design Deliverable Requirements for more information.

4. ***Pre-Final PS&E Submission***

The Pre-Final PS&E Submission consists of fully completed plans, specifications, and construction cost estimate, along with all other supporting documents from final design.

Refer to the Pre-Final PS&E Submission Guidance, PA Turnpike – Design Deliverable Requirements, and Part D – Final Design, Section 13 – Pre-Final PS&E Submission of this manual for more information.

5. Title Sheet Submission

The Title Sheet Submission consists of a full size title sheet for signatures, a PDF of the contract plans, a PDF for the estimate, and a PDF of the Notice to Bidders.

6. *Final PS&E Submission*

The Final – PS&E Submission consists of fully completed plans, specifications, and construction cost estimate, along with all other supporting documents from final design.

Refer to Part D – Final Design, Section 16 – Final PS&E Submission of this manual for more information.

B. Plan Presentation Compliance Checks:

For any project that develops plans, files are made available to be checked for Plan Presentation Standards Compliance. This should occur at the Pre-Final PS&E Submission. Right of Way Plans should also be reviewed in the Plan Presentation Compliance Check.

C. Related Information

- Part D – Final Design, Section 7 – Right of Way Design and Acquisition
- Part D – Final Design, Section 13 – Pre-Final PS&E Submission
- Part D – Final Design, Section 16 – Final PS&E Submission
- PA Turnpike - Design Deliverable Requirements
- 60% OTS General Guidance
- 75% Submission Guidance
- Pre-Final PS&E Submission Guidance

D.05 Traffic Engineering and Operations

A. Introduction

The Final Design Traffic Engineering tasks include preparation of Final Traffic Control Plans and Associated tasks, Final Transportation Management Plan, Final Signing Plans, Final Pavement Marking and Delineation Plans, Final ITS Plans, Final coordination of guiderail and concrete barrier, and Specifications.

B. Final Traffic Control Plans and Associated Tasks

1. ***Finalize Maintenance and Protection of Traffic (MPT) for PA Turnpike Mainline:***

The PA Turnpike Project Manager (PM) or Design Manager (DM) will ask the Design Consultant (DC) to finalize MPT staging plans for PA Turnpike mainline work and requirements for construction-stage transitions. If a Transportation Management Plan (TMP) is required, all MPT plans shall be included as an appendix within the TMP (See TMP Flow Chart and Contents).

2. ***Obtain Allowable Working Hour Requirements:***

The PA Turnpike PM coordinates with the PA Turnpike Traffic Engineering and Operations Department to obtain the allowable working hour requirements for each construction contract. The contract limits for all work, the contract schedule, and contract-specific details, such as full depth paving, etc. are provided by the DC and forwarded to the PA Turnpike Traffic Engineering and Operations Department by the PA Turnpike PM for determination of the allowable working hour requirements.

3. ***Plan X's: (Typically not applicable for Facilities)***

"Plan X's" are a planned, pre-determined detour route developed for incidents and major construction activities. The DC will provide the number of Plan X's, along with direction, duration, time of year, and actual year of implementation. Potential conflicts with other projects that have Plan X's and are in proximity to the project area are coordinated. If a TMP is required, all Plan X's and project coordination shall be included as an appendix within the TMP (See TMP Flow Chart and Contents).

4. ***Detours:***

Approval of the detour route and plans is obtained from the PA Turnpike prior to obtaining approval from PennDOT and Local Municipalities. The DC includes a copy of the PennDOT District detour approval letter with the PS&E submission. The PA Turnpike PM includes a copy of the approval letter with the PS&E package submitted to the PA Turnpike Construction Contract Manager for submission to PennDOT Central Office. If a TMP is required, all detours shall be documented within the TMP as an appendix. If the detour is in place longer than a period of three days, covers should be included for advanced major guide signs. (See TMP Flow Chart and Contents).

5. ***Lane Rental Fees:***

The PA Turnpike PM asks the DC to select the proper road segments for the determination of Lane Rental Fees and submit to the PA Turnpike Traffic Engineering and Operations Department for review.

6. *Road User Costs: (Typically not applicable for Facilities)*

The PA Turnpike PM requests Road User Costs for Plan X's or traffic stoppages from the PA Turnpike Traffic Engineering and Operations Department. The PA Turnpike PM needs to discuss with the PA Turnpike Traffic Engineering and Operations Department the number of traffic stoppages, the times and days of the permitted stoppages as well as the dollar amount to be added to the specifications.

7. *Road Users Liquidated Damages (RULD's): (Typically not applicable for Facilities)*

The PA Turnpike PM requests RULD's from the PA Turnpike Traffic Engineering and Operations Department. RULD's are typically included for all total reconstruction projects, larger bridge projects, and some interchange reconstruction work.

8. *MPT for Non-PA Turnpike Roadways:*

The DC coordinates review and approvals of final MPT plans and specifications with PennDOT and/or Local Municipalities. The DC includes a copy of the PennDOT District MPT approval letter with the PS&E submission. The PA Turnpike PM includes a copy of the approval letter with the PS&E package submitted to the PA Turnpike Construction Contract Manager for submission to PennDOT Central Office. If a TMP is required, all MPT plans shall be included as an appendix within the TMP. (See TMP Flow Chart and Contents).

9. *Traffic Signal Permit: (Typically not applicable for Facilities)*

The DC coordinates approvals for Temporary and/or Permanent Traffic Signals with PennDOT and Local Municipalities, as required. If a TMP is required, all temporary traffic signal permit documentation shall be included as an appendix within the TMP. (See TMP Flow Chart and Contents).

A project should not be let until Signal Maintenance Agreements with Local Municipalities for permanent traffic signals are finalized.

The PA Turnpike PM or DM will ask the DC to provide supporting materials for Highway Occupancy Permits (HOP), according to the process identified in Part D – Final Design, Section 12 – PennDOT Coordination, Item C.

10. *MPT Restrictions of Operations During Holiday Periods*

The PA Turnpike PM requests Holiday Periods schedule from the PA Turnpike Traffic Engineering and Operations Department for inclusion in the specifications.

11. *MPT Standard Details*

The PA Turnpike PM requests the applicable MPT standard details from the PA Turnpike Traffic Engineering and Operations Department for inclusion in the specifications.

12. *Sign Installation and Removal Quantities*

The PA Turnpike PM requests the applicable Sign Installation and Removal Tabulations from the PA Turnpike Traffic Engineering and Operations Department for inclusion in the specifications.

13. *PA Turnpike Sign Fabrication Standard Details*

The PA Turnpike PM requests the applicable PA Turnpike Sign Fabrication Standard Details from the PA Turnpike Traffic Engineering and Operations Department for inclusion in the specifications.

C. Final Transportation Management Plan

The PA Turnpike PM or DM will ask the Design Consultant (DC) to finalize the TMP. The TMP shall include all pertinent information as documented in Subsection E within Part C – Preliminary Design, Section 4 – Traffic Engineering and Operations. The PA Turnpike PM or DM will need approval from the Manager of Incident Management and Traffic Operations and Manager of Traffic Engineering before the TMP will be considered final.

The PA Turnpike PM or DM will also need to schedule TMP coordination and implementation tabletop exercises prior to construction. The number of tabletop exercises will be at the discretion of the PA Turnpike Traffic Engineering and Operations Department. The purpose of these meetings will be to bring all critical parties together to discuss TMP implementation, usage and issues/concerns. The PA Turnpike PM or DM should reference the Roles and Responsibilities Section of the TMP as a starting point for meeting attendees. (See TMP Flow Chart and Contents).

During construction, the Traffic Engineering and Operations Department is responsible for scheduling, coordination, and implementation of tabletop exercises.

D. Final Signing Plans *(Typically not applicable for Facilities)*

Final signing plans are provided to the PA Turnpike Traffic Engineering and Operations Department for review.

The PA Turnpike PM or DM will ask the DC to coordinate final sign structure plans and specifications with the PA Turnpike Bridge Unit. The PA Turnpike Bridge Unit determines monotube color as part of the final signing plans. The PA Turnpike PM or DM will ask the DC to verify that the location of sign structure foundations is clear of utility conflicts, according to the utility coordination process identified in Part C – Preliminary Design, Section 7 – Utility Design.

The DC coordinates with PennDOT or local municipalities on sign maintenance responsibilities for non-Turnpike signing. These are signs that the PA Turnpike replaces during construction and that will be maintained by others on PennDOT or local roads.

E. Final Pavement Marking and Delineation Plans

The determination as to whether or not final pavement marking and delineation plans are needed is done in coordination with the PA Turnpike Traffic Engineering and Operations Department. If final plans are required, they will include the extent of pavement markings along features such as roadways, ramps, gores, parking lots, etc.

Pavement marking materials are specified by the DC for review by the PA Turnpike Traffic Engineering and Operations Department.

F. ITS Coordination

The PA Turnpike PM or DM will coordinate with the DC and the PA Turnpike Manager of Incident Management and Traffic Operations or designee to finalize ITS plans/specs and construction coordination as appropriate for the project.

The PA Turnpike PM or DM asks the DC to provide supporting materials for Highway Occupancy Permits (HOP) for Non-PA Turnpike roadways, according to the process identified in Part D – Final Design, Section 12 – PennDOT Coordination, Item C.

G. Smart Work Zone (SWZ) Coordination

The PA Turnpike PM or DM will coordinate with the with the DC, PA Turnpike Manager of Incident Management and Traffic Operations, and PA Turnpike Manager of Traffic Engineering to finalize plans/specs for any SWZ applications that will be used during construction.

H. Receive/Review Final Traffic Deliverables

The PA Turnpike PM or DM coordinates with the DC to ensure that the following items are available for review by the PA Turnpike Traffic Engineering and Operations Department with the Final Traffic Submissions:

- Single Lane and Holiday hours data
- Project attachments for specifications, including:
  - Minimum lane requirements
  - Holiday hour restrictions
  - MPT Standard Details
  - Road User Liquidated damages, if required (Not applicable for Facilities)
  - Road User Costs, if required (Not applicable for Facilities)
  - Sign installation and removal sheets, if required (Not applicable for Facilities)
  - PA Turnpike Sign fabrication standard drawings, if required (Not applicable for Facilities)
- Traffic signal permits and signal maintenance agreement approvals (Not applicable for Facilities)
- Point of Access Study (POA)
- Traffic Impact Study (TIS)

I. Related Information

- Plan X route cards (Not applicable for Facilities)
- Part C – Preliminary Design, Section 4 – Traffic Engineering and Operations
- Part C – Preliminary Design, Section 7 – Utility Design
- Part D – Final Design, Section 12 – PennDOT Coordination, Item C
- Traffic Management Plan (TMP) Requirements Flow Chart and Contents
- Smart Work Zone Deployment Guidelines

D.06 Geotechnical Design

A. **Review of Submissions**

Submissions, as determined at the Kick-Off Meeting and Preliminary Design Review, may include some or all of the following:

- Geotechnical Engineering Report (GER)
- Soil Profile Plan
- Infiltration Test Report
- Subgrade Report (Cement Stabilized Subgrade)
- Geotechnical Treatment Plans
  - Must be submitted prior to the 75% Submission
  - All treatments must be shown in 75% Submission
- Structure Foundation Report
- Temporary Shoring Data Report (TSDR)
- List of Proposed Geotechnical Documents Available to Contractors (GDAC) – Submitted with Pre-Final PS&E
- Geotechnical Documents Available to Contractors - Actual pdf files, provided as one submission with Final PS&E

1. *PA Turnpike-Managed Projects*

- The PA Turnpike Geotechnical Liaison receives and reviews all submissions from the PA Turnpike Project Manager (PM).

2. *Projects with Design Managers*

- Submissions are made to the Design Manager (DM), with copies/notification made to PA Turnpike Geotechnical Liaison.
- The DM reviews submissions.

- The DM coordinates formal or informal discussions, as appropriate, with the Geotechnical Design Management Team.
- The DM provides Final geotechnical comments to the PA Turnpike Geotechnical Liaison.
- The PA Turnpike Geotechnical Liaison coordinates comments with the DM and the PA Turnpike PM.
- When warranted and/or requested, the DM will arrange for a Special Geotechnical Meeting with the PA Turnpike Geotechnical Liaison to discuss the project.

B. Drilling Contract

Subsurface investigations may also be conducted during Final Design. The process and protocols are the same as identified in Part C – Preliminary Design, Section 8 – Geotechnical Design.

C. Related Information

- Design Consistency Guidelines (DCGs)
  - Chapter 8 – Geotechnical Design
  - Appendix C – MPT Protocols for Drilling Contracts
  - Appendix K – Pennsylvania Turnpike Drilling Protocols

D.07 Right of Way Design and Acquisition

A. Identify Required Right-of-Way (ROW)

The Design Consultant (DC) verifies the ROW needed to build the project and presents the "Required ROW Lines" on the Final Design plans.

If the project is using a PCDS, PA Turnpike Project Manager (PM) or Design Manager (DM) and PA Turnpike Design Services Unit Liaison will upload all existing PA Turnpike ROW information to the PCDS file structure. The Design Consultant (DC) will upload any additional ROW files (property deeds, property descriptions and property plans) before individual properties are identified for any takings or easements.

B. Create Property Owner WBS Element Numbers and ROW Numbers

The PA Turnpike PM or the PA Turnpike Design Services Unit Liaison creates the Property Owner WBS Element numbers in SAP when the design has progressed to a point that ROW impacts are known and there is reasonable assurance that acquisition is required.

A separate Level 3 WBS Element under the Level 2 ROW WBS Element is required for each property owner on a project in which ROW is to be acquired. Each property plot will show as a unique WBS Element. The PA Turnpike PM is responsible for providing the WBS Element to the DC for each of the plots.

The PA Turnpike Design Services Unit creates the ROW Number for all impacted parcels.

C. ROW Tracking

1. ROW Tracker Application

   The PA Turnpike PM should create the lists within the ROW Tracker Application for each construction contract associated with the project. After properties are identified for takings and/or easements, the DC will enter parcel information into the PCDS ROW Tracker Application by creating a ROW record for each parcel with a taking or easement. The DC maintains each record by utilizing the template in the ROW Tracker Application and updating the fields monthly. The DC should attach the property plot, property deed, and legal description to each ROW record. The PA Turnpike PM or DM reviews and verifies information received from the DC. The PA Turnpike PM or DM contacts the PA Turnpike Design Services Unit Liaison who assigns the ROW acquisition and WBS Element numbers and enters the numbers into the ROW Tracker Application.

   Once the ROW acquisition process is started, the PA Turnpike Legal Department or DC ROW Acquisition Consultant will update the appropriate fields in the ROW Tracker Application for each record including the Acquisition and Relocation fields if required. The ROW Tracker Application should be updated monthly by the PA Turnpike Legal Department or DC ROW Acquisition Consultant.

   The ROW Tracking Chart is available in the PCDS ROW Tracker Application through the Reports function in the app. The PA Turnpike Legal Department maintains the ROW Tracker App in the PCDS. The PA Turnpike Legal Department will create the report monthly and submit to the PA Turnpike PM and DM.

2. ROW Coordination Folder

   If the project is not managed in a PCDS, then the PA Turnpike PM creates the **ROW Tracking Chart** in the Legal ROW Coordination folder on the PA Turnpike network ENG folder and ensures that copies of all current deeds of record are saved there. The PA Turnpike PM or DM notifies the PA Turnpike ROW Acquisition Unit ROW Administrator that the project folder has been created and that the documents are available.

   The PA Turnpike Legal Department maintains the **ROW Tracking Chart** in electronic format, updates it monthly and, if changes are made, submits the chart to the PA Turnpike Project Manager (PM) or Design Manager (DM) three days prior to the next scheduled monthly meeting.

   The PA Turnpike PM or DM contacts the PA Turnpike Design Services Unit Liaison who assigns the ROW acquisition and WBS Element numbers and enters the numbers into the **ROW Tracking Chart**.

   The PA Turnpike PM or DM reviews and verifies information received from the DC.

D. Receive/Submit Final ROW Plans and Legal Descriptions for Review

When there is a DM, prior to final stamping and sealing of documents, the DC submits ROW Plans and Legal Descriptions to the DM, the PA Turnpike Legal Department, the ROW Acquisition Consultant for review, copying the PA Turnpike PM the PA Turnpike Design Services Unit Liaison on the transmission. The DM reviews the plans, makes comments, and submits one set of "mark-ups" to the DC. The DC re-submits the plans, following the same procedure, until all comments are satisfactorily addressed.

When there is no DM, prior to final stamping and sealing of documents, the DC submits the ROW Plans and Legal Descriptions to the PA Turnpike Design Services Unit Liaison, the PA Turnpike Legal Department, and the ROW Acquisition Consultant for review, copying the PA Turnpike PM on the transmission. The PA Turnpike PM reviews the comments and submits one set of "mark-ups" to the DC. The DC re-submits the plans, following the same procedure, until all comments are satisfactorily addressed. The PA Turnpike Design Services Unit Liaison then forwards the ROW Plans and Legal Descriptions to the PA Turnpike ROW Acquisition Unit, copying the PA Turnpike PM on the transmission.

E. Submit Final ROW Plans and Legal Descriptions

The PA Turnpike PM or DM submits Final ROW Plans and Legal Descriptions to the PA Turnpike Design Services Unit Liaison.

The PA Turnpike Design Services Unit Liaison notifies the PA Turnpike ROW Acquisition Unit ROW Administrator that the Final ROW Plans are available for review, either within the ROW file structure and the ROW Tracker App in the PCDS or the "Legal ROW Coordination" folder in the PA Turnpike network ENG folder.

After review by the PA Turnpike ROW Acquisition Unit, by the Appraiser, and by Title Searchers, and after negotiations by the PA Turnpike ROW Acquisition Unit or ROW Acquisition Consultant with the property owners, the plans may or may not be acceptable for acquisition.

If, during the ROW Acquisition process, corrections or other modifications are required, the plans are resubmitted to the DC for revision. This process is repeated until the PA Turnpike Right-of-Way Administrator deems the plans acceptable for acquisition. Update the ROW Tracking Chart with final plans to the Legal Department with final plan date.

F. Finalize ROW Acquisition Plan Set and Provide Final Plan Set to the Design Services Unit for Archival Indexing and Permanent Storage in Plans Database.

The PA Turnpike Design Services Unit Liaison verifies that the DC or in-house Licensed Land Surveyor and Engineer have properly signed and sealed the final set of ROW plans.

The PA Turnpike Design Services Unit Liaison acquires the seal and signature of the PA Turnpike Chief Engineer.

The PA Turnpike Design Services Unit Liaison secures the signature of the PennDOT Deputy Secretary for Highway Administration when necessary.

The PA Turnpike Design Services Unit Liaison requests the PA Turnpike Legal Department to prepare an Agenda Item to be submitted for Commission Approval and execution of the Project ROW Title Sheet.

After the Commission's Approval, the PA Turnpike Design Services Unit Liaison ensures the Commission's official embossed seal is imprinted on the Title Sheet, as well as the signature of the Secretary Treasurer, confirming Commission Approval.

The Final ROW Plan Set is indexed and archived by the Design Services Unit. The Final ROW Plan Set may need to be recorded in the Road Docket Section of the County Recorder of Deeds Office.

G. ROW Acquisition

The PA Turnpike ROW Acquisition Unit, or it's ROW Acquisition Consultant, orders appraisals and title searches, and utilizes plans provided by the PA Turnpike Design Services Unit to enter into negotiations with property owners to acquire required ROW.

As steps progress, the PA Turnpike ROW Acquisition Unit updates the ROW Tracking Chart with entries relevant to the unit's work.

If negotiations are successful with owners, the PA Turnpike ROW Acquisition Unit and Legal Department coordinate with the PA Turnpike Design Services Unit to prepare all the necessary acquisition Legal Documents, Commission Agenda Items, compensate the owners, and execute legal documents and record them in the appropriate county Recorder's and Prothonotary's Offices.

If negotiations are unsuccessful with owners, the PA Turnpike Legal Department compiles all necessary legal documents, Commission Agenda Items, and condemns the properties by the filing of Declarations of Taking in the Courts of Common Pleas.

H. Obtain Statement of ROW Clearance

The PA Turnpike PM requests the PA Turnpike Design Services Unit to issue a ROW Clearance Letter. If there will be no ROW takes, the PA Turnpike Design Services Unit produces a Clearance Letter. If there are ROW takes, the PA Turnpike Design Services Unit reviews and forwards the clearance request to the PA Turnpike ROW Administrator, who produces the Clearance Letter.

I. Related Information

- Part C - Preliminary Design, Section 6 – Right of Way
- Design Consistency Guidelines (DCGs)
  - Chapter 6 – Right-of-Way
- ROW Tracking Chart

D.08 Utility Coordination and Design

A. Determine Impacts, Relocation Requirements and Restrictions

The Design Manager (DM), PA Turnpike Project Manager (PM) and Utility Liaison (UL) review the Design Field View plans for impacts.

The DM, Design Consultant (DC) or PA Turnpike PM issues a work order for subsurface utility engineering (SUE). The DC surveys all findings and updates drawings.

The PA Turnpike UL and DC schedule the utility meeting/field view to review impacts with utilities. The PA Turnpike PM, DM, UL, and DC attend the utility meeting/field view and determine relocation requirements and/or necessary working restrictions.

The PA Turnpike UL and DC coordinate with FOMC vendor to determine relocation requirements and/or necessary working restrictions to protect the PA Turnpike fiber network.

B. 4181 Packages

If Public Utilities exist in or around the project area proper coordination must occur. The UL should be consulted to determine if it is appropriate to use a 4181 Package process to document all coordination.

The PA Turnpike UL or DC requests 4181 Packages and right-of-way documentation/proof of private rights from Utility Companies. The PA Turnpike UL or DC requests working restrictions for non-impacted utility facilities from Utility Companies.

The PA Turnpike PM or DM, UL, and DC review and approve 4181 Packages and relocation plans.

C. Utility Agreement

The PA Turnpike UL is responsible for the following:

- Creation of the SAP Network for funding, if reimbursement agreements are required.
- Creation of the SAP Network for funding the FOMC support work if needed.
- Assist IT Department in preparation of the necessary Scope and cost of FOMC support work.
- Review of Utility's 4181 package including estimates.
- Preparation of Commission Agenda Items to enter into agreements with Utilities and approve estimate.
- Release of the SAP Network after receipt of Commission Approval of Agenda Item.
- Preparation of the necessary agreements and forwarding to Utilities for signatures.
- Routing of utility agreements through the PA Turnpike for execution; attach Approved Agenda Item and Utilities Insurance Certificate.
- For Facilities projects, PA Turnpike PM must incorporate utilities agreement process for new utilities services.
- For utility relocations that are planned to be performed as prior work and will require traffic control on the Pennsylvania Turnpike roadway:

  - Coordination with the PA Turnpike Traffic Engineering and Operations Department to determine allowable traffic times for the work.
  - Preparation of the SAP notification for the PA Turnpike Maintenance Department to create a Work Order request for traffic control.
- Forwarding of the executed copy of the Agreement and approved Agenda Item to Contracts Management for assignment of Contract number and Purchase Order number.
- Forwarding of the executed copy of the Agreement to the Utility with Notice to Proceed.
- Processing and tracking of Utility Invoices.
- Processing and tracking of FOMC Invoices through project funding.
- Updating of **Utility Log** and Utility files to reflect changes.

D. PS&E Submission

The PA Turnpike PM or DM and the UL review and approve construction plans and Specifications for correct information regarding Utility Plans and Special Provisions in contract documents. The PA Turnpike UL issues a Utility Clearance memorandum for the project. FOMC clearance should be obtained as part of the Utility Clearance process.

E. Projects Involving Work over Railroad (Typically not applicable to Facilities projects)

1. ***Public Utility Commission (PUC) Application***

The PA Turnpike PM or DM, DC, or UL contacts the Railroad (RR) and/or PUC to obtain site-specific RR information.
The PA Turnpike PM or DM, DC, or UL gathers the necessary information to prepare the PUC Application.

The PA Turnpike PM or DM, DC, or UL makes formal application to PUC. The PUC schedules and conducts the field view meetings with RR representatives and affected Utilities representatives. The PA Turnpike PM or DM, DC, and PA Turnpike UL attend.

The PA Turnpike or PM and DC finalizes the Engineering Plans and Specifications, and the PUC issues the final order.

2. *Reimbursement Agreement for Preliminary Engineering*

The PA Turnpike PM or DM or DC provides the RR with the project scope of work and preliminary plans and requests a preliminary engineering estimate from the RR. The PA Turnpike UL reviews and approves the RR preliminary engineering estimate.

The PA Turnpike UL is responsible for the following:
- Creation of the SAP Network for funding the RR reimbursement agreement.
- Preparation of the Commission Agenda Item to enter into an agreement with the RR for preliminary engineering and approval of the funding estimate.
- Release of the SAP Network after receipt of the Commission Approval of Agenda Item.
- Preparation of the necessary agreements and forwarding to the RR for signatures.

- Routing of the RR agreement through the PA Turnpike for execution, attach Approved Agenda Item.
- Forwarding of the executed copy of the Agreement and the approved Agenda Item to Contracts Management for assignment of Contract number and Purchase Order number.
- Forwarding of the executed copy of the Agreement to the RR with Notice-to-Proceed.
- Processing and tracking of RR Invoices.

3. *Reimbursement Agreement for Construction Services*

The PA Turnpike PM or DM or DC submits final design plans and/or specifications to the RR for review and approval. The PA Turnpike PM or DM, DC, or UL receives design approvals from the RR and a force-account estimate for construction services required of the RR.

The PA Turnpike UL reviews and approves the RR engineering estimate for Construction Services. The PA Turnpike UL prepares a RR Reimbursement Agreement for Construction Services in the same manner as for Preliminary Engineering, described in Item E.2 above.

F. Related Information

- Design Consistency Guidelines (DCGs)
  - Chapter 13 - Utilities

- Utility Log (Maintain and update Utility Crossing Log information as necessary)

D.09 Environmental Items

A. Introduction

As with the environmental investigations in Part C – Preliminary Design, Section 5 – Environmental Items, it is difficult to capture all of the studies that might be required during the Final Design phase; however, the Preliminary Design investigations will drive the work needed. If wetland and stream mitigation is addressed via a mitigation bank, then the following items on mitigation are not required.
All other Final Design investigations may include the following:

- Wetland Mitigation Site Selection Report
- Stream Mitigation Site Selection Report
- Conduct Wetlands survey, cultural resource and waste management investigations of Mitigation Sites
- Agency Field View of Mitigation Sites
- Right-of-Way Plan for Mitigation Sites
- Utility work for Mitigation Sites
- Historic and Archeological Investigations and Reports for Mitigation Sites
- Preliminary Design of Wetland and Stream Mitigation
- Final Design of Wetland and Stream Mitigation

- Prepare National Pollutant Discharge Elimination System (NPDES) and Joint Permit Application for the Mitigation Sites
- Plans, Specifications & Estimate (PS&E) preparation for Wetland and Stream Mitigation
- Determine if State Parks, etc., unique geologic resources or groundwater resources are affected and develop mitigation measures
- Conduct field surveys for T&E species based on Preliminary Design
- Further coordination with U.S. Fish & Wildlife Service (USFWS) and State agencies regarding T&E species
- T&E Mitigation design, as needed
- Tree clearing, as needed
- Prepare Farmlands Assessment Report (FAR) and ALCAB Presentation (if needed)
- Determine if Conditional Letter of Map Revision (CLOMR) is required and prepare application (if needed)
- Conduct Phase 2 Environmental Site Assessment (ESA) if needed; Develop remediation plan if needed
- Historic Structures – prepare Criteria of Effect Report and Memorandum of Understanding (MOU) or Programmatic Agreement (PA) (if needed)
- Archeology – Conduct Phase II investigations and prepare Phase II Report; Conduct Phase III (data Recovery) investigations and prepare Data Recovery Report. Prepare MOU or PA
- Hold Public Meeting to present results of the Noise Study. Hold meeting to allow impacted residents to select noise barrier color and texture
- Design Noise barriers (Structures Unit manages this aspect)
- Prepare and submit NPDES Permit Application for the Highway Project
- Prepare and submit PADEP/USACOE Joint Permit Application for the Highway Project
- For Facilities projects, prepare and submit plans for Asbestos Abatement, Lead Removal, Storage Tank Removal, Air and Water Quality issues, Wastewater Management
- RMA vs Non-RMA calculations to determine E&S and NPDES permit requirements

B. Receive/Review Reports and Provide Comments

The Design Consultant (DC) prepares draft reports for the various investigations and submits them to the PA Turnpike Project Manager (PM) or Design Manager (DM) for review.

The PA Turnpike PM or DM provides these reports to the assigned PA Turnpike Environmental Unit Liaison for review. The PA Turnpike Environmental Unit Liaison reviews the document and provides comments, usually electronically, to the PA Turnpike PM, DM and/or the DC. The reviewer is available to answer questions or clarify comments at the request of the PA Turnpike PM or DM, or DC.

C. Approve Deliverables

Upon resubmission of the subject reports, the PA Turnpike PM or DM provides the report to the assigned PA Turnpike Environmental Unit Liaison to verify that the comments have been addressed and to review any new information that has been included. The PA Turnpike Environmental Unit Liaison coordinates with the PA Turnpike PM or DM and determines whether or not the report is acceptable. If it is not, the PA Turnpike Environmental Unit Liaison provides comments, again, usually electronically, to the PA Turnpike PM or DM.

Many of the documents prepared during this phase will be submitted to the appropriate regulatory agencies following PA Turnpike approval. A document may be submitted by the PA Turnpike PM or DM or directly by the DC, if approved in advance by the PA Turnpike PM and the PA Turnpike Environmental Unit Liaison.

If the regulatory agency provides comments on the submission, the PA Turnpike PM or DM will direct the DC as to the course of action. The DC may be instructed to address the comments and resubmit the document for further review.

D. Permit Applications

While there is a long list of permits that might be required for any particular project, there are several that are typically needed for PA Turnpike projects. The following is a brief list and description of those authorizations:

1. ***Impacts to Waters of the United States/Waters of the Commonwealth***

- U.S. Army Corps of Engineers Section 404 Permit
- PADEP Chapter 105 Permit

A Joint Permit Application has been developed to apply for both permits simultaneously. Some activities may qualify for general permits, which require a different, more simplified application. The PA Turnpike PM or DM consults with the PA Turnpike Environmental Unit Liaison to determine the appropriate application needed for each project.

2. ***Earth-Disturbance Activities***

Depending upon the amount of earth disturbance, and the PADEP's Chapter 93 classification of the watershed, different authorizations are required. The following is a generalized guide to the type of authorization needed.

Area of Disturbance	*Permit Type*
Less than 1 acre	Erosion & Sediment Control (E&SPC) Plan
More than 1 acre	General NPDES Permit
Activities in watersheds classified as EV or HQ (Waters of Special Protection) or where there are issues with on-site contaminated soils or other site conditions of environmental concern.	Individual NPDES Permit

The PA Turnpike established a Memorandum of Understanding (MOU) with PADEP that moved review of all PA Turnpike NPDES permits from Regional PADEP Offices to PADEP's Regional Permit Coordination Office (RPCO). RPCO staff are responsible for coordination of both waterway and NPDES permits for the Turnpike Commission. County Conservation

Districts with PADEP delegation agreements will still review and issue general NPDES permits. Individual permits and all waterway permits are reviewed and permits are reviewed and issued by RPCO. As with the preceding section, the PA Turnpike PM or DM consults with the Environmental Unit Liaison to determine the appropriate application(s) required, and the submission procedure for each project. The PA Turnpike also establishes a MOU with the US Army Corps of Engineers (USACE) that provides a single point of contact for coordination and permit review for each of the three USACE Districts in which the PA Turnpike system is located.

Applications typically go through a multiphase review at the regulatory agency, which includes a Completeness review and a technical review. The Completeness review is performed first to ensure that the application contains all of the required information. The agency notifies the applicant if additional information is required. After the application is deemed administratively complete, the agency initiates the technical review of the application. This phase is usually the longest, due to the nature of the review. The agency issues review letters containing its comments and requesting responses. In this phase, the PA Turnpike PM and its DC, and the DM coordinate with the PA Turnpike Environmental Unit Liaison to provide the necessary responses. In both phases of the review, there are specific time frames within which the applicant must respond so that the application is not returned. If the application is returned, the evaluation process must begin over again.

There is a section within PADEP's regulations that specifically address "road maintenance activities". If road maintenance activities involve earth disturbance of 25 acres or more, an Erosion and Sediment Control Permit is required. For maintenance activities that disturb less than 25 acres, a written Erosion and Sediment Control Plan must be prepared. The PA Turnpike PM or DM should consult with the PA Turnpike Environmental Unit Liaison to determine whether or not a project meets the requirements for road maintenance activities and the type of permitting that may be required. The determination and coordination should be a deliverable to accompany every design submission.

Because the processing times for different permit types vary widely, it is wise to submit applications as early as practicable to provide the agency with sufficient time for review. On any project that requires the submission of a permit application, a pre-application meeting must be held in advance of submission. It is recommended that this meeting be held after infiltration testing is completed and the stormwater design is advanced to a pre-final stage. Additional consultation or pre-application meetings can be scheduled as needed. The meeting attendees should include the County Conservation District, DEP RPCO, and the U.S. Army Corps of Engineers, as appropriate. The meeting should be arranged by the PA Turnpike PM, DC, or DM. Pre-application meetings can be held at various locations. The purpose of the pre-application meeting is to discuss items such as the types of permits that may be required and the format of the application. Coordination with the PA Turnpike Environmental Unit Liaison is necessary prior to scheduling this meeting.

As with Part C – Preliminary Design, Section 5 – Environmental Items, many of these Final Design tasks will require scheduling office or field meetings, or both, with the appropriate regulatory agencies. The PA Turnpike PM should consult with the PA Turnpike Environmental Unit Liaison and the DM to determine who will coordinate the dates, times, locations, and agendas for the meetings.

E. Tree Clearing

The time of year restrictions pertaining to tree felling needs to be considered to avoid delays in the project schedule. The PA Turnpike retains a third party contractor to perform tree felling in advance of construction for projects, as needed. The PA Turnpike PM needs to identify if tree clearing is needed for the project in CRM and complete the additional information in CRM at least two years in advance of the project to avoid project delays. If tree felling is required for the project, the PA Turnpike should complete the Tree Felling Work Checklist.

F. Reimbursement to Municipalities and County Conservation Districts

The Commission has authorized (**PA Turnpike Agenda Item G-8, approved 11/14/06**) the Engineering Department to provide reimbursement to municipalities for costs, up to $25,000.00, incurred during the review of PA Turnpike Stormwater Management plans and other documents that require municipal approval as part of the permit process. The Commission only pays a disturbed acreage fee of $150.00 per disturbed acre for County NPDES permit reviews. All other fees are not subject to be paid for Commission NPDES permit reviews where the Commission is the applicant. A letter agreement reviewed by Legal Department then signed by the PA Turnpike PM or PA Turnpike Unit Manager and the Municipality is used to document the agreement and create the SAP PO to make payment for these services.

G. Permit Tracking

The Environmental Project Status Form is used to monitor the status of the various environmental tasks. The DC should use this form and update the fields with necessary information throughout the design process. The DC should update the form for every design review meeting, as needed. For projects utilizing a PCDS, the Environmental Project Status Form will be maintained in the PCDS file structure under the Project Management/Environmental folder. For projects not using PCDS the Environmental Project Status Form will be maintained on the PA Turnpike ENG folder.

H. Related Information

- Part C - Preliminary Design, Section 5 - Environmental Items
- Tree Felling Work Checklist
- Environmental Project Status Form
- PennDOT Publication 584 – Appendix 12E – Guidance on Chapter 102 Requirements for Road Maintenance Activities
- PA DEP Chapter 102 – Road Maintenance Activities FAQ

D.10 Stormwater Management

A. Introduction

Advance Preliminary Stormwater, Erosion and Sedimentation Control design to Final Design and prepare all NPDES permit and Municipal stormwater management documents. Coordinate with the Geotechnical/Soils Consultant on final soil analysis and infiltration testing, and establish final ROW needs for stormwater control measures. The stormwater and Erosion and Sedimentation Control Design are critical elements of the NPDES permit submission (See Part D – Final Design, Section 9 – Environmental Items). Every effort should be made to advance these design elements to facilitate timely submission of NPDES Permit Documents.

B. Review of Submissions

Submissions, as determined at the Kick-Off Meeting and Preliminary Design Review, may include some or all of the following:

- Draft NPDES Permit Notice of Intent
- PCSM Permit Modules and Support Calculations
- PCSM Plans, Details, and Special Provisions
- Municipal Stormwater Management Site Plan
- E&S Permit Modules and Support Calculations
- E&S Plans, Details, and Special Provisions
- PCSM and E&S reports.

1. PA Turnpike-Managed Projects

- The Design Consultant (DC) submits all deliverables to the PA Turnpike Project Manager (PM). The PA Turnpike Stormwater Liaison receives and reviews all submissions from the PA Turnpike PM.
- After all documents have been approved by PA Turnpike Stormwater Liaison the DC assembles and delivers permit documents to appropriate agencies and municipalities.

2. Projects with Design Managers

- The DC submits all documents to the Design Manager (DM), with copies/notification made to PA Turnpike Stormwater Liaison.
- The DM reviews submissions.
- The DM coordinates formal or informal discussions, as appropriate, with PA Turnpike Stormwater Liaison.
- The DM provides Final comments to the PA Turnpike Stormwater Liaison.
- The PA Turnpike Stormwater Liaison coordinates comments with the DM and the PA Turnpike PM.
- When warranted and/or requested, the DM will arrange for a stormwater meeting with the DC and PA Turnpike Stormwater Liaison to discuss the project.
- When all documents have been approved by PA Turnpike Stormwater Liaison the DM assembles and delivers the documents to appropriate agencies and municipalities.

C. Related Information

- Design Consistency Guidelines (DCGs)
  - Chapter 16 – Stormwater Management
- Part D – Final Design, Section 6 – Geotechnical Design
- Part D – Final Design, Section 7 – Right of Way Design and Acquisition
- Part D – Final Design, Section 9 – Environmental Items

D.11 Deliverable Coordination/Tracking

A. Verify Deliverables

The Project Manager (PM) coordinates with the Design Consultant (DC) or Design Manager (DM) to verify receipt of the deliverables identified for the project in the Final Design Initiation process. The deliverables will vary, depending on the project's scope, size, and complexity. See Part D – Final Design, Section 1 – Initiation for a list of typical project deliverables that may be required.

If the project is using a PCDS, the deliverables are tracked and submitted through the PCDS File Manager Application in the Project Management/Tracking Charts folder. If the project does not use a PCDS then a **Deliverables Tracking Chart** is maintained in the project file structure, under the Project Management/Tracking Charts folder. The deliverables are prioritized with due dates to ensure that the project is completed on time. A **Deliverables Tracking Chart – Template** is located in the PCDS File Manager

If PCDS is not used on a Facilities project, project files will be kept in the PA Turnpike ENG folder.

B. Related Information

- Part D – Final Design, Section 1 – Initiation

D.12 PennDOT Coordination

A. Coordination

The PA Turnpike Project Manager (PM) or Design Manager (DM) continues the coordination effort started in Preliminary Design for the project with the appropriate PennDOT District Turnpike Coordinator.

B. Final Plans and Report Submissions

The Design Consultant (DC) or the PA Turnpike PM or DM forwards the appropriate final plans and reports to PennDOT for review and comment, including the Pre-Final PS&E. These reviews are coordinated through the PennDOT District Turnpike Coordinator. Comments are discussed and incorporated in the project documents, as deemed feasible and reasonable. The PennDOT District Turnpike Coordinator provides written approval for the Pre-Final PS&E. This also includes any MPT and detour plans.

C. PennDOT Highway Occupancy Permit (HOP)

If an HOP is required for the project, the process can vary across the state and the PA Turnpike PM or DM must coordinate in advance with the PennDOT District Coordinator early to determine application expectations for their respective District. Following PennDOT coordination, the DC or PA Turnpike PM or DM will prepare and submit an HOP application through PennDOT's ePermitting System. Figure 5 provides an overview of typical HOP submission schedule. PennDOT's District Permit Manager should issue the HOP within three 30-day review cycles; however some PennDOT Districts may take longer.

The DC or PA Turnpike PM or DM should include the PennDOT District Turnpike Coordinator authorization to the PA Turnpike Contract Management with the submittal of the Pre-PS&E for correspondence with PennDOT Central Office.

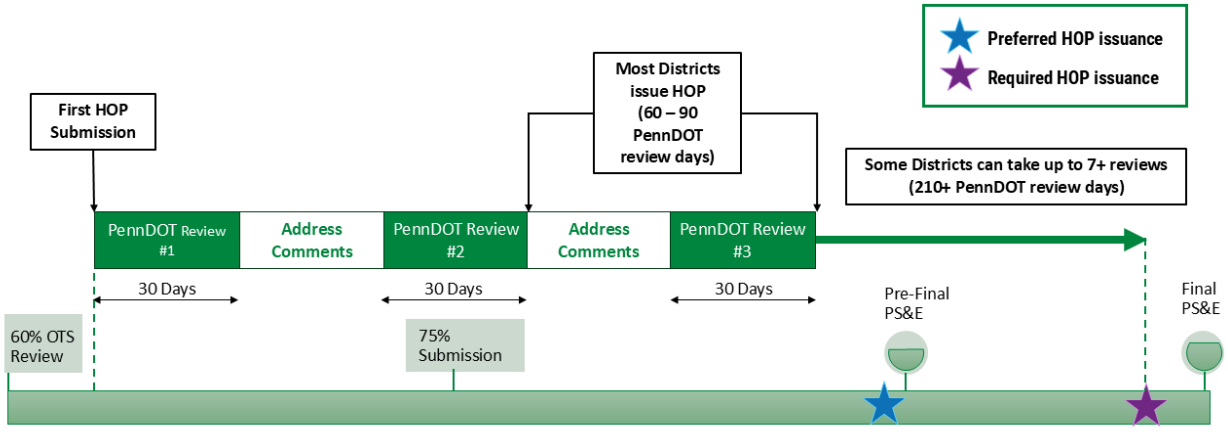

Figure 5. PennDOT HOP Submission Schedule

D. Related Information

- PennDOT ePermitting System (EPS)
- PennDOT PUB 282, Highway Occupancy Permit (HOP) Operations Manual
- PennDOT PUB 10C, DM-1C, Final Design Plan Development, Chapter 4.3.C

D.13 Pre-Final PS&E Submission

A. Introduction

The Design Consultant (DC) prepares and submits the Pre-Final submission to the PA Turnpike Project Manager (PM) or Design Manager (DM). The Pre-Final PS&E Submission incorporates all previous comments and discussions from design review meetings.

The Pre-Final PS&E that the DC submits is intended to be 100% complete. The intent is to have the PA Turnpike review what is to be advertised and the DC to address any comments. Refer to the Pre-Final PS&E Submission Guidance for more information.

The Pre-Final Submission provides the deliverables as identified in the Engineering Project Management – Guidelines for Deliverables section of the PA Turnpike - Design Deliverable Requirements. The PA Turnpike PM should meet with unit leader and/or supervisor and review all comments prior to the DC addressing the comments. The submission should be evaluated internally and include a recommendation if the project should be released with a supporting explanation.

In accordance with the PA Turnpike QA Program and the PA Turnpike Project Specific Quality Management Plan (PSQMP) Guidelines, all appropriate PA Turnpike Quality Verification checklists must accompany the Pre-Final PS&E submission.

B. Related Information

- Pre-Final PS&E Submission Guidance
- PA Turnpike Project Specific Quality Management Plan (PSQMP) Guidelines
- PA Turnpike - Design Deliverable Requirements

D.14 Completion Date Meeting

A. Introduction

The Completion Date Meeting is held after the PA Turnpike Project Manager (PM) receives and incorporates all previous comments and obtains the required approvals and clearances from all Departments and prior to the Final PS&E date listed on the letting schedule. The scheduled date of the meeting must be a minimum of one week, preferably two weeks, prior to the Title Sheet Submission to allow for any issues coming out of the meeting to be incorporated into the Final Contract Documents.

The PM completes the following forms and compiles required documents for the Completion Date Meeting.

1. **Asset Breakdown Form:** The PM prepares a Asset Breakdown Form in accordance with the Commission defined assets listed and directions included with the form. The PA Turnpike PM uses the most recent DC's estimate to prepare the form. Once the form is complete, the PM sends the form to Accounting.

2. **Milestone Review Checklists:** The PM compiles the checklists of reviewers that have completed reviews at 60% OTS, 75%, and Pre-Final PS&E milestone submissions. For project reviews conducted in Bluebeam Studio, the Bluebeam Studio Review Checklist can be used and provided. These checklists will be reviewed during the Completion Date Meeting.

3. **Completion Date Form:** The PM partially completes the Completion Date Form by listing the dates of the required approvals and clearances, including, but not limited to:
   - Permission to Advertise (Capital Plan Approved Date if project was included in approved Capital Plan or Commission meeting date for approval for independently funded projects)
   - PennDOT Approval
   - ROW Clearance
   - Utility Clearance
   - Environmental Clearance

   The PM coordinates with the Funding Category Manager to obtain the Construction Budget based on the current Capital Plan. The PM also provides the date the Asset Breakdown Form was submitted to Accounting.

4. **Contract Documents and Other Documents:** The PM compiles contract documents and other documents to aid in establishing the NTP and completion date, including, but not limited to:
   - Contract Documents
   - Available Single Lane Charts
   - Transportation Management Plan (TMP) (developed by the Design Consultant)
   - Construction Schedule (based on the required working days and developed by the Design Consultant)
   - Photos

Attendees at the Completion Date Meeting include the PA Turnpike PM, PA Turnpike PM's Supervisor (optional), Assistant Chief Engineer – Design, PA Turnpike Contract Management Services Manager, PA Turnpike Contract Management Liaison (optional), PA Turnpike Manager of Traffic Engineering, PA Turnpike Traffic Engineering Liaison (optional) and any other necessary PA Turnpike unit liaisons or representatives. The intent of this meeting is to determine the project construction completion date based on available working hours as well as the construction schedule.

At the meeting, an anticipated Notice to Proceed (NTP) date is determined. Once a completion date is agreed upon, the NTP and completion date are inserted into the Completion Date Form. Prior to approval of the Completion Date Form, the PA Turnpike Traffic Engineering liaison must verify that all comments have been addressed. The Completion Date Form is then circulated for signature to the PA Turnpike PM, Funding Category Manager, Manager of Traffic Engineering,

Assistant Chief Engineer – Design, Assistant Chief Engineer – Construction, Contract Management Services Manager. The completion date is inserted into the contract documents and becomes the official project completion date.

B. Related Information

- Completion Date Form
- Asset Breakdown Form

D.15 Title Sheet Submission

The Title Sheet submission is due to the PA Turnpike Contract management by noon on the "Title Sheet" date (see PA Turnpike Letting Schedule). The PA Turnpike PM or DM is responsible for obtaining the following items from the DC for this submission:

- One (1) Full size Paper Title sheet, signed and sealed by the Design Consultant
- One (1) complete full-sized PDF of the entire contract plan set
- One (1) complete PDF of the current construction cost estimate
- One (1) PDF of the Notice to Bidders
- Completion Date Form

All approvals and clearances for the contract must be obtained at this time, including but not limited to, Permission to Advertise (Capital Plan Approved Date if project was included in approved Capital Plan), PennDOT Approval, Utility Clearance (including fiber), ROW Acquisition Clearance (Legal), ROW Clearance (Design Services), and Environmental Clearance.

D.16 Final PS&E Submission

A. Receive PS&E

Once the Design Consultant (DC) has addressed all review comments received from the Pre-PS&E Submission and conducted a final quality review, a Final PS&E submission is sent to the PA Turnpike Project Manager (PM) or Design Manager (DM) for final approval.

The Final PS&E Submission provides the deliverables as identified in the Engineering Project Management – Guidelines for Deliverables section of the PA Turnpike – Design Deliverable Requirements.

In accordance with the PA Turnpike QA Program and the PA Turnpike – Project Specific Quality Management Plan (PSQMP) Guidelines, all appropriate PA Turnpike Quality Verification checklists must accompany the Final PS&E submission.

B. Verify PS&E

The PA Turnpike PM or DM back-checks to ensure that all comments have been addressed from the Pre-Final PS&E submission.

C. Incorporate Final Comments

The PA Turnpike PM or DM incorporates any remaining comments, and the submission is finalized by the DC. The DC resubmits to the PA Turnpike PM or DM.

D. Approve PS&E

The PA Turnpike PM or DM issues approval of the Final PS&E to the DC, and the DC submits all final documents as indicated for the Final PS&E in the PA Turnpike - Design Deliverable Requirements. For projects that employ a DM, the DM provides a signed letter to the PA Turnpike PM indicating that the plans are complete and ready for bid.

E. Related Information

- Part D – Final Design, Section 1 – Initiation, Item E - Identify Deliverables
- Part G – Design Project Closeout, Section 1 – Confirm all Deliverables
- PA Turnpike Project Specific Quality Management Plan (PSQMP) Guidelines
- PA Turnpike – Design Deliverable Requirements

D.17 Final Deliverables

A. Introduction

In addition to the Final PS&E Submission, other Final Deliverables, as identified in the Contract Documents section of the PA Turnpike – Design Deliverable Requirements and as noted in Part D – Final Design, Section 1 – Initiation, Item E – Identify Deliverables, are submitted along with the Final PS&E or as requested by the PA Turnpike Project Manager (PM) or Design Manager.

B. Related Information

- Part D – Final Design, Section 1 – Initiation, Item E – Identify Deliverables
- PA Turnpike – Design Deliverable Requirements

D.18 Consultant Evaluation

A. Introduction

In order to provide an improved process for documenting consultant performance on PA Turnpike Design and Construction Management/Construction Inspection (CM/CI) projects, a consultant performance evaluation process has been developed for use by PA Turnpike personnel. The form, FORM PTC 22-94A, will be used to record and maintain a database of performance history for all Design and CM/CI consultants. There are separate evaluation criteria for Design and CM/CI consultants respectively; both provide predetermined performance metrics for the evaluations.

The use of this form will provide a standardized, uniform approach when evaluating consultant performance. The information gathered through these evaluations is ultimately intended to improve consultant performance due to an improved means of communicating expectations and results. This will also provide quantitative data during the consultant selection process on PA Turnpike contracts. The form is available for use on all PA Turnpike Design and CM/CI contracts within the Consultant Evaluation application in Microsoft Dynamics CRM.

B. Consultant Evaluation Process

At a minimum, one consultant evaluation shall be completed for every design project identified in the 12-Quarter Planning Schedule (i.e. biddable projects). Interim evaluations may be performed at the Project/Unit Manager's discretion for larger projects having longer durations or for open end design contracts that may contain several large work orders.

The evaluations should be completed for each "Prime" consultant. The "Prime" consultant is responsible for work performed by their respective sub consultants. For Design contracts, consultant evaluations shall take place:

- At the bid opening date, and
- Upon completion of construction

A post-design evaluation must be completed by the PA Turnpike Construction Project Manager to evaluate the effectiveness of the consultant's design through the construction process as outlined in Part 4 of FORM PTC 22-94A. If the PA Turnpike Design Project Manager previously performed an evaluation of the design consultant as outlined in Parts 1-3 of FORM PTC 22-94A, continue the consultant evaluation on Part 4 of the same form. Both the PA Turnpike Design and Construction Project Managers should sign the FORM PTC 22-94A completed for Parts 1-4 prior to forwarding the consultant evaluation to the Assistant Chief Engineer – Design for review and signature. If the PA Turnpike Design Project Manager did not previously perform an evaluation of the design consultant as outlined in Parts 1-3 of FORM PTC 22-94A, contact the Assistant Chief Engineer – Design for further direction prior to performing a post-design evaluation.

For CM/CI project specific agreements one consultant evaluation shall be performed upon completion of each construction project. For non-project specific CM/CI agreements, one consultant evaluation shall be performed upon completion of the agreement. Interim evaluations may be performed at the Project Manager's discretion for longer duration projects

or yearly for open end contracts if a large work order has been completed. CM/CI consultant evaluations must be completed by the PA Turnpike Construction Project Manager and forwarded to the Assistant Chief Engineer – Construction for review and signature.

For all other Non-project specific open end contracts (e.g. traffic, survey, geotechnical, etc.), one final consultant evaluation shall be performed at the conclusion of the contract; interim evaluations may be completed as needed.

Follow the process and procedures for obtaining approval signatures and proper file retention of consultant evaluations as outlined in Section F - Process Following Completion of Consultant Evaluation.

C. Performance Metrics

In order to provide uniformity in evaluating consultant performance, predetermined performance metrics are provided in FORM PTC 22-94A.

For Design Consultants, the performance metrics are:

- Project Management, Communication, & Coordination
- Project Design Quality Assurance and Control
- Project Design Schedule and Budget Performance
- Project Consultation & Coordination after Design

A ranking should be provided for each of the specific elements of the performance metrics.

For CM/CI Consultants, the performance metrics are:

- Project Management, Communications & Coordination, containing seven specific elements
- Quality Assurance & Control, containing six specific elements
- Work Performance & Dependability, containing eleven specific elements

A ranking should be provided for each of the specific elements of the performance metrics.

D. Evaluation Criteria

The criteria and factors that are to be used are described in detail on the first page of each evaluation form. The ratings range from *"1 – Unsatisfactory"* through *"5 – Outstanding"*. Performance ratings below 3 and above 4 should be accompanied by comments or notes explaining the reason for the rating level. A "Notes/Comments" box has been provided for your use below each performance metric that is to be evaluated. Additionally, if one of the predetermined performance metrics does not apply to the consultant's work that you are evaluating, a rating of "N/A" (or not applicable) may be selected for that metric.

E. Performance Data

The data that is entered into each consultant evaluation form is stored within the Consultant Evaluation application in Microsoft Dynamics CRM. This information can be retrieved or utilized for future reporting on consultant performance.

F. Process Following Completion of Consultant Evaluation

1. The Project Manager (PM) completes a preliminary Consultant Evaluation and review with the Engineering Manager (EM) and ACE for concurrence.
2. After the EM concurs with the Consultant Evaluation, the PM digitally signs and dates a copy of the completed evaluation.

   Note: The ACE – Design is responsible for the review of all design consultant evaluations, and the ACE – Construction is responsible for the review of all CM/CI consultant evaluations.

3. The PM forwards the completed evaluation to the consultant for signature.
4. The PM saves any evaluation returned by a Consultant to the P&DS Consultant Evaluations ENG folder.

D.19 DOM Documentation Audit

A. Introduction

The purpose of the DOM Documentation Audit is to verify that the DOM processes regarding project documentation are being followed in accordance with the PA Turnpike's Office of Audit and Advisory Services, in response to an independent Capital Projects Risk and Control Assessment Audit in 2013.

B. Documentation Requirements

The PA Turnpike has developed and defined documentation requirements and processes, including:

- Systems and tools for managing project documentation;
- Clearly defined roles and responsibilities for managing project documentation;
- Consistent project file structures;
- Continuous training to key personnel.

C. Final Design Documentation Audit

PA Turnpike management requires that the PA Turnpike Project Manager (PM) perform continuous monitoring against the established management processes to ensure project files are maintained within the prescribed policies and procedures.

The PM should use the Project Manager Audit Checklist to record and audit all project documentation required in the DOM.

At the completion of Final Design the PA Turnpike PM should submit the continuously completed PM Audit Checklist to his or her supervisor to verify that all documentation has been continuously monitored.

Part E – Bid Letting

E.01 Submit Final Contract Documents to Contract Management

A. Introduction

As determined by the current PA Turnpike Letting Schedule, the PA Turnpike Project Manager (PM) or Design Manager (DM) provides the Contract Documents as required to the Contract Management Unit by 12:00 Noon of the day listed.

B. Title Sheet

By Noon on the "Title Sheet" date (see PA Turnpike Letting Schedule), the PA Turnpike PM or DM provides the Title Sheet deliverables identified in the Engineering Project Management – Guidelines For Deliverables section of the PA Turnpike - Design Deliverable Requirements.

C. Final PS&E

By Noon on the "FINAL PS&E" date (see PA Turnpike Letting Schedule), the PA Turnpike PM or DM provides the Final PS&E deliverables identified in the Engineering Project Management – Guidelines For Deliverables section of the PA Turnpike - Design Deliverable Requirements.

D. Related Information

- PA Turnpike - Design Deliverable Requirements

E.02 Pre-Bid Activities

A. Introduction

The purpose of this section is to define the roles of the PA Turnpike Design Project Manager (PM) from Advertisement to Bidding of a construction project.

B. EBS Questions and Responses

Questions for any construction project must be submitted electronically in EBS by registered business partners.

The following business rules have been applied to the EBS system functionality:

- Registered business partners must be logged in to the system to submit questions. Registered business partners can review, edit, and/or delete a question before submitting it. After a question is submitted, changes to the question are not permitted.
- Anyone logged in to EBS can view submitted questions and responses.

- The designated Project Manager receives an email from the EBS Help Desk whenever a question is submitted.
- Only the designated Project Manager and the contract management staff have the security to respond to questions for a specific contract.
- If a consultant designer is a registered business partner, they have access to view the questions submitted but cannot provide responses in EBS.
- Only the date and time when the question was submitted are visible to anyone logged in to the system other than the designated Project Manager and the contract management staff. The designated Project Manager and the contract management staff also see the individual and company of the person submitting the question.
- All responses show the date and time of the response as well as the name of the responder.
- A question queue for all outstanding questions for each contract is available to the designated Project Manager only.
- Only the designated Project Manager and the contract management staff can review, edit, and/or delete a draft response before submitting it.
- Published responses to a question cannot be modified or deleted. Supplemental responses to a question are permitted.
- Only the contract management staff have the ability to delete a question and will only do so for inappropriate questions/comments (e.g., foul language or incorrect contract). If a question is deleted, any response pertaining to that question is also deleted and an email is sent from the EBS Help Desk to the contractor who posted the question.
- Registered business partners can submit questions until the Wednesday before the bid opening date.
- Responses can be posted until 48 hours before bid time.

Other items to keep in mind:

- Responding to questions in EBS does not replace the need for an addendum. Any changes to plans, specifications, or bid documents must be issued in proper addendum format.
- If questions are received via phone or e-mail, direct the person to submit his/her question in EBS without providing a response to the question.
- It is the responsibility of the designated Project Manager to respond to all questions. The contract management staff is only provided security to respond to questions as an administrative function of the system and as a backup, should the Project Manager be unable to provide responses. The contract management staff does not monitor the questions and responses but is available to provide assistance in the formulation of a response and/or determination of proper addendum content.
- Project Managers must notify a contract management staff member if an alternate person is responsible for responding to questions for an extended period of time (vacation, illness, etc.) so that the designated project manager in EBS can be changed.
- Be concise in responses. Provide a specification reference or plan reference without providing discussion, opinion, or interpretation. If the questions will be addressed by addendum, the response should indicate that.

C. Attend Pre-Bid Meeting (IF HELD)

The PA Turnpike Contract Management Unit is responsible for scheduling and facilitating the Pre-Bid Meeting, if one is held. The PA Turnpike Design PM or DM and DC prepares the agenda. The PA Turnpike Design PM or DM and DC will be in attendance to provide a project overview and provide follow-up for any addendum items identified. The only questions that the Contract Management Unit can answer during this meeting are about EBS or the bidding process. No project specific questions will be answered.

D. Related Information/Appendix

- PA Turnpike Pre-Bid Meeting Guidelines

E.03 Issue Addenda

A. Introduction

The PA Turnpike Project Manager (PM) or Design Manager (DM) contacts the Contract Management Services Manager (CMSM) to determine the need for an addendum for the project. The Design Consultant, PA Turnpike PM, or DM prepares and submits an addendum to the Contract Management Unit with any needed revised files for Addenda deliverables identified in the Engineering Project Management – Guidelines For Deliverables section of the PA Turnpike - Design Deliverable Requirements.

B. Addendum Guidelines

When a question is received and sent to the consultant for an answer, please provide an explanation of the answer (if necessary) and a PROPOSED RESPONSE to the Commission PM. Responses should directly answer the question without providing discussion, opinion, elaboration or interpretation. If the questions will be addressed by addendum, the response should indicate just that. The PM will publish responses most of the time, some may be posted by contracts management.

Except in very rare occurrences, all questions need to have an answer POSTED WITHIN 48 HOURS of the question being asked, that means reviewed and approved by the PM also.

The general rule for answering question is, if it is in the plans or specifications, point to the plan sheet or specification number, if it isn't in the plans or specifications and should be, it will be handled by addendum.

It is highly recommended to put the skeleton of the addendum together from day 1 and keep updating it. Changes are to follow the order of the spec book and the plan listing. Please use a recently issued addendum as a reference, request one from the Commission if you wish.

If you are making a minor revision to a spec, do not replace the whole thing, clearly write up only the revision. Again, using a current example should make this clear.

If adding a new spec, the entire spec is written into the addendum write up.

In the write up of drawing changes, provide a short description of the change made on the plan.

Either/Or items need to include the Either and the or portions as applicable in the write up and must match the item on the sheet that is changing (i.e. Pipe Design on a Tab sheet would be listed as Pipe Design #).

It is highly recommended to update any drawings per the addendum as soon as you realize you need to make a change. Addendum number and date go in the lower right corner of the drawing. NO COLOR. Cloud all changes, do not delete text, x it out and make the change. Again, reference a recent addendum for guidance. If you prepare a sheet and have no addendum date, put "XX" in the date to hold it, as soon as you get the official date, change it and upload to PCDS.

Upload all information to PCDS piecemeal as soon as it is ready. We DO NOT WANT OR NEED everything in a single package. The more that is done ahead of time, the less rushing needs to happen.

Do NOT change the name of the Tab Wizard file, USE the addendum feature.

Do not make changes to the Index numbering after advertisement, if a spec needs to be added it will be the next sequential number.

When doing the write up of changes for sheets, group sheets together as much as possible to reduce addendum length. Use the Tab Wizard addendum output as a reference and backcheck. This can get tricky in the way Tab Wizard shows changes, but generally if an item is added, you list all sheets in the tab set that the item shows up on. See existing addendums for a reference.

Typically, the end of contractor questions is the Wednesday before bid opening. Final addendum items shall be provided to the PA Turnpike PM by noon on Thursday following questions closing. The PA Turnpike PM reviews the addendum for completeness and provides it to the Contract Management Liaison by 2pm on Thursday.

If your contract has Diesel or Asphalt price adjustments update the index amount as necessary. Index prices are updated the last Wednesday of the month for the following month. Index prices must be current and must be updated even if it is the only addendum item.

Keep in mind the intent of the addendum is to clearly and correctly change the bid documents. It is not for the correction of typos, etc. These changes have an impact on the contractor's bid, schedule and/or means and methods and must be communicated as clearly and concisely as possible. Contractors are only given six weeks to bid a project that may have taken years to design. Changes made by addendum may not be the perfect solution or the same as a change while the project was in design, but it must be accurate, biddable & constructible. Changes made the Friday before bid may also be different than changes made a week after advertisement.

C. Addendums involving changes to the Permitted E&S and/or PCSM Plans

The PA Turnpike is unable to make changes to the E&S or PCSM permit plans, without the written approval of County Conservation District and/or PADEP.

The following process shall be implemented so that changes to plans, identified during the bidding process, can be communicated in order to obtain the required written approval from the County Conservation District and/or PADEP.

- Once a change to the E&S and /or PCSM plans is noted, the design project manager and contracts management need to make the assigned Environmental liaison aware.
- The designer shall maintain a running log of the changes which are being requested, per addendum, through the bidding process.
- The Environmental liaison shall review the list with the designer, for each applicable addendum throughout the bidding process.
- Once discussed with the designer and contracts management, the environmental liaison will then communicate with the County Conservation District and/or PADEP that an addendum is prepared, that a permit modification will be submitted and that forthcoming change requests will be presented at the completion of bidding. This early communication is making them aware of the forthcoming request.
    - At the time of the first notification, the Environmental Liaison shall share a timeline with the County Conservation District or PADEP, on when the final addendum is to be issued.
    - The Environmental Liaison must clearly convey to the County Conservation District or PADEP the changes being requested and if they are quantified into 1 of the 3 categories allowed for permitted plan changes/modifications:
        - Field Change
        - Minor Permit Modification
        - Major Permit Modification

      Descriptions of these three categories can be referenced at Chapter_102_Permit_Amendments_FAQ.

- Any revisions to E&S and/or PCSM plans will be noted with an addendum tag on the applicable sheet by the designer per addendum procedures.
- The Monday after the final addendum, the contracts management PM will provide the environmental liaison the latest E&S and/or PCSM plans along with the applicable addendum text files.
- Environmental liaison will coordinate the revisions with the appropriate agency(ies) for approval.
- It is the goal of this process to have this all completed by the time Notice to Proceed is provided to the contractor.
- Please note, once the project has been bid and is in the procurement process, the plans CANNOT be changed. If additional changes are required, they will need to be handled by the PA Turnpike Construction Management, contractor and coordinated with the PA Turnpike Environmental Laison.

D. Related Information

- PA Turnpike - Design Deliverable Requirements

E.04 Review Bid to Estimate

A. Introduction

The PA Turnpike Project Manager (PM) or Design Manager (DM) is contacted by the Contract Management Services Manager (CMSM) if there is a significant difference in the bids as compared to the engineer's estimate. Based on this review of bid items, the PA Turnpike PM or DM makes recommendations to the CMSM to either award the contract or reject it. These recommendations should note the major differences and provide justification to the differences if the recommendation is to award the contract.

Part F – Errors and Omissions

F.01 Errors and Omissions

A. Introduction

This section establishes a procedure to identify, investigate, and document errors and omissions in consultant-prepared construction plans and contract documents. This section also documents the consultant's financial responsibility for the cost of plan revisions and added construction costs resulting from errors.

An Error is defined as a flaw presented by the Consultant in a set of plans, specifications, contract documents or computations as a result of negligent engineering or document preparation. Negligent engineering and/or document preparation is a failure to meet the standard of reasonable care, skill and diligence that an engineering professional would ordinarily exercise.

A Omission is defined as an oversight in the plans, specifications, contract documents or design computations that results in additional or extra work that should have been included in the original contract documents.

The purpose of the Error Review Committee is to review and resolve potential errors and omissions. The Error Review Committee members include the following PA Turnpike personnel:

- PA Turnpike Chief Counsel (or designee)
- Chief Engineer
- Assistant Chief Engineer – Construction
- Assistant Chief Engineer – Design
- Contract Management Services Manager (or designee)
- PA Turnpike Design Project Manager (PM)
- PA Turnpike PM's Supervisor
- Manager of Facilities or Director of Traffic Engineering & Operations, if applicable
- PA Turnpike Construction Project Manager (If the project is in construction)
- PA Turnpike Construction Project Manager's Supervisor (If the project is in construction)

The PA Turnpike attempts to recover all PA Turnpike costs incurred that are determined to be the responsibility of consultant. These costs would include all of the re-design costs required to revise the contract documents. Depending on when the error or omission is discovered, they may also include any additional costs related to construction.

It is essential that the DC and/or DM is notified of the alleged error/omission and given the opportunity to participate in the solution.

B. Errors and Omissions Discovered Before Contract Letting

Errors and omissions that are discovered prior to contract letting are expected to be corrected by the DC and/or DM at no additional costs to the PA Turnpike. These corrections are incorporated as an addendum to the contract documents. See Part E – Bid Letting, Section 3 – Issue Addenda for additional information.

At the first indication of a potential error or omission, the PA Turnpike Design PM notifies his supervisor and attempts to resolve the issue with the DC and/or DM. The PM's supervisor notifies the Assistant Chief Engineer – Design and Chief Engineer. If the PA Turnpike PM is not able to resolve the issue, the PA Turnpike PM may notify the Error Review Committee and the Error Review Committee may convene for review and resolution. The ACE - Design drafts a letter to be sent to the DC and/or DM identifying the issues and directing them to correct the error or omission at their own costs.

C. Errors and Omissions Discovered Prior to Construction (of item of work related to error/omission)

For errors and omissions discovered after contract letting but prior to construction, the DC and/or DM is expected to make all changes to the contract documents to correct the issue at no cost to the PA Turnpike. These corrections are incorporated as a Change Order to the construction contract. See COM, Part B – Project Administration, Section 5-1 – Preparation of Change Orders on Construction Contracts for additional information.

At the first indication of a potential error or omission, the PA Turnpike Design PM notifies his supervisor and attempts to resolve the issue with the DC and/or DM. The PM's supervisor notifies the Assistant Chief Engineer's (Design and Construction) and the Chief Engineer. If the PA Turnpike PM is not able to resolve the issue, the PA Turnpike PM may notify the Error Review Committee and the Error Review Committee may convene for review and resolution. The ACE - Design drafts a letter to be sent to the DC and/or DM identifying the issues and directing them to correct the error or omission at their own costs.

D. Errors and Omissions Discovered During and After Construction (of item of work related to error/omission)

For errors and omissions discovered during and after when physical construction of the item of work related to the error/omission has taken place, the DC and/or DM is expected to make all changes to the contract documents to correct the issue at no cost to the PA Turnpike. These corrections are incorporated as a Change Order to the construction contract. See COM, Part B – Project Administration, Section 5-1 – Preparation of Change Orders on Construction Contracts for additional information.

The DC and/or DM is also responsible for the construction costs for any work done incorrectly that needs to be removed, as well as the associated removal costs. The PA Turnpike is responsible for the construction cost for the revised work. This is the construction cost the PA Turnpike should have paid for the initial construction without an error or omission.

Other costs the DC and/or DM may be responsible for include construction delay costs due to the error or omission as well as costs above what would have normally been paid for the work to be performed or expedited (overtime, fabrication, remobilization of MPT cost, unit cost re-negotiations, etc.).

At the first indication of a potential design error or omission, the PA Turnpike Design PM notifies his supervisor and the ACE - Construction or ACE - Design. The Design Error Review Committee convenes to discuss the issue and determine if action is warranted. If action is warranted, the ACE - Construction drafts a letter for review by the Design Error Review Committee and an official letter is generated putting the DC and/or DM on notice of a possible design error. All costs are tracked and the DC and/or DM are notified of their responsibility for ongoing costs.

E. Payment Processing Procedures

When a DC and/or DM is responsible for costs associated with errors and/or omissions, the Assistant Chief Engineer – Construction or Assistant Chief Engineer – Design letter shall direct the consultant to reimburse the PA Turnpike with a check made out to the Pennsylvania Turnpike Commission. For accounting purposes, also instruct the consultant to include the project's purchase order number in the memo line.

The letter shall direct the consultant to send the payment to the ACE – Construction or ACE – Design that drafted the letter. Once received, the Assistant Chief Engineer will forward the payment to Accounting for deposit.

F. Related Information

- Part E – Bid Letting, Section 3 – Issue Addenda
- Construction Operations Manual (COM): Part B – Project Administration, Section 5-1 – Preparation of Change Orders on Construction Contracts
- PennDOT Publication 93, Chapter 5, Section 5.8 - Design Error Process

Part G – Design Project Closeout

G.01 Confirm All Deliverables

A. Introduction

The purpose of this section is to ensure that the PA Turnpike has received all project design deliverables prior to Design Project Closeout.

In Part C – Preliminary Design, Section 1 – Initiation, Item E – Identify Deliverables, a listing of Preliminary Design Deliverables is developed and tracked as per Part C – Preliminary Design, Section 10 – Deliverable Coordination/Tracking.

In Part D – Final Design, Section 1 – Initiation, Item E – Identify Deliverables, a listing of Final Design Deliverables is developed; tracked as per Part D – Final Design, Section 11 – Deliverable Coordination/Tracking; and submitted as per Part D – Final Design, Section 16 – Final PS&E Submission and Part D – Final Design, Section 17 – Final Deliverables.

The PA Turnpike Project Manager (PM) reviews both the Preliminary Design and Final Design Deliverables listings and confirms that all deliverables have been received and the records are filed as per the PA Turnpike's Record Retention Policy.

B. Related Information

- Part C – Preliminary Design, Section 1 – Initiation, Item E – Identify Deliverables
- Part C – Preliminary Design, Section 10 – Deliverable Coordination/Tracking
- Part D – Final Design, Section 1 – Initiation, Item E – Identify Deliverables
- Part D – Final Design, Section 11 – Deliverable Coordination/Tracking
- Part D – Final Design, Section 16 – Final PS&E Submission
- Part D – Final Design, Section 17 – Final Deliverables
- PA Turnpike - Design Deliverable Requirements

G.02 Review and Approve Final Invoice

A. Process Final Invoice

The PA Turnpike Project Manager (PM) reviews the Final Invoice as per Part B – Acquire Resources, Section 3 – Contract Management, Item B – Invoicing, with the addition of the following:

- The PA Turnpike PM revises the activity quantity in CJ20N to reflect the total final invoiced amount.

- The PA Turnpike PM makes a note in the Vendor Portal that the invoice is "final" when approving it, then sends an **email notification** to the project's Procurement Specialist and the Manager of Professional Services Procurement to process the invoice, identifying the invoice as **FINAL.** The PA Turnpike PM also copies the Contract Management Department on the email.

See Reference Lesson 9 – Closing Projects, of the LOPS-02 Manual for more detailed information.

B. Related Information

- Part B – Acquire Resources, Section 3 – Contract Management, Item B – Invoicing

- Project Systems Complex Project Lifecycle Processing – LOPS-02 Manual

G.03 SAP Closeout

A. Introduction

The PA Turnpike Project Manager (PM) has managed the project from its early stages of study or preliminary design through to construction completion, and it is time to finish the project and close it out. Closing a project is a somewhat involved process. The PA Turnpike PM must make sure all steps are properly executed in a timely manner to allow new or modified assets to begin depreciation and to run and be cared for properly. For projects that extend over several years and may have assets in service before it is time to close the entire project, the PA Turnpike PM contacts PA Turnpike Accounting to inform them of the assets that are in service and request that they begin depreciation. See Part H – Construction, Section 4 – Asset in Service.

As a project goes through its life cycle, it may be appropriate to run the closing procedures on individual completed WBSs and place them on HOLD status until the entire project is ready to be closed out. Placing a WBS on HOLD will stop new charges from occurring and stop all labor charges. However, it will not stop invoices from being processed on an existing PO with funds remaining on the PO. When closing a project in the middle of the fiscal year, set the status to "HOLD" until the end of the fiscal year. At the end of the fiscal year, set the status to "Close" only after confirming with the Design Planning Unit.

The following basic steps are needed to close out a project in SAP:

1. Verify with the team members that all work is complete.
2. Determine if any open shopping cart items exist against the project.
3. Ensure that all items on POs have been fully received and invoiced.

4. All costs that have been incurred thus far, and settled to the Assets under Construction, need to be fully settled to the Fixed Assets that will be created or improved by the project.
5. Change User Status on WBS Elements to Technically Complete (TECO).
6. Change System Status on WBS Elements to TECO.
7. Change System Status on the Project Definition to TECO.
8. Change User Status on WBS Elements to Closed (CLSD).
9. Change System Status on WBS Elements to CLSD.
10. Change User Status on the Project Definition to Construction Complete (CONC).
11. Change System Status on the Project Definition to CLSD. (This step is performed by the Category Manager.)

For a complete description of the closing process, reference Lesson 9 – Closing Projects, of the LOPS-02 manual.

B. Related Information

- Project Systems Complex Project Lifecycle Processing – LOPS-02 Manual
- Part H – Construction, Section 4 – Asset in Service

Part H – Construction

H.01 Prepare Pre-Construction/Design Meeting Agenda

A. Introduction

The PA Turnpike Design Project Manager (PM) or Design Manager (DM) prepares the agenda and attends the Pre-Construction/Design Meeting. The PA Turnpike Construction PM is responsible for setting up the meeting. The PA Turnpike Design PM or DM will formulate the agenda based on their experience during the design phase, run the meeting, and prepares the minutes. The Pre-Construction Meeting Report Template includes topics typically covered in the meeting.

If a PCDS is being used, the PA Turnpike Design PM or DM will prepare the meeting minutes and transmit the minutes to the PA Turnpike Construction PM who will upload the agenda, attendance sign-in sheet, and meeting minutes into the PCDS.

The Construction PM or DM reviews and distributes the final minutes.

B. Related Information

- Pre-Construction Meeting Report Template
- Construction Operations Manual (COM): Part A – Section 1-1, Pre-Construction Design Meeting

H.02 Attend Pre-Construction Conference

A. Introduction

The PA Turnpike Design Project Manager (PM) or Design Manager (DM) attends the Preconstruction Conference. The PA Turnpike PM or DM should invite all project liaisons to attend. The PA Turnpike Construction PM prepares the agenda and runs the Preconstruction Conference. The PA Turnpike Design PM or DM, and all project liaisons, should review the agenda and be familiar with the project and able to answer any questions that the Construction Unit or contractor may have concerning the project.

B. Related Information

- Construction Operations Manual (COM): Part A – Section 1-2, Preconstruction Conference

H.03 Construction Involvement and Construction Progress Meetings

A. Introduction

During the course of the construction project, there may be construction questions, problems, or concerns due to differing existing site conditions, design vagueness, design omissions and errors, etc. The PA Turnpike Design Project Manager (PM) or Design Manager (DM) may be requested by Construction staff to help resolve these issues. The PA Turnpike Design PM or DM provides technical assistance and guidance, which could include providing recommendation to correct the issue, reviewing and approving shop drawings, preparing change orders, etc.

The PA Turnpike Design PM or DM attends the Construction Progress Meetings as available and as needed. It is recommended at a minimum that the PA Turnpike Design PM or DM attend the first few meetings until the project is smoothly moving forward. Typically, Construction staff and the contractor have questions and concerns with the project plans that can be resolved at these meetings.

B. Review of Temporary Shoring Support of Excavation Submittals

The PA Turnpike has developed guidelines for use when reviewing Contractor design-build Support of Excavation (SOE) submittals for conformance to the PA Turnpike's Temporary Shoring Special Provision.

The PA Turnpike Design PM or DM, once notified by the Construction Manager or Inspector in Charge, will follow the Guidelines to ensure the SOE submittals are reviewed and Mandatory and Advisory comments are provided to the Contractor through the Construction Manager.

C. Related Information

- Construction Operations Manual (COM): Part C – Section 1000-9, Temporary Shoring Support of Excavation (SOE)
- Guidelines For Review of Temporary Shoring Support of Excavation Submittals

H.04 Asset in Service

A. Introduction

The PA Turnpike Construction Project Manager (PM sends a copy of the Semi-Final/Final Inspection Letter to the PA Turnpike Accounting Department to inform Accounting of the corresponding asset(s) going In-Service. Project assets are defined on the Asset Breakdown Form provided to PA Turnpike Accounting in Part D – Final Design, Section 14 – Completion Date Meeting .

The In-Service date of the asset is generally assumed to be the same date as its **Semi-Final or Final Inspection**. The PA Turnpike Accounting starts to depreciate the asset on the In-Service date.

At the end of all construction projects, whether Facilities or Engineering, the PM should contact the Facilities Strategic Planning and Program Manager who is responsible for Master Data Management. A functional Location (FLOC) is required to be created in the SAP Plant Maintenance module. This is applicable for all building types to include, but not limited to the following types: Maintenance Sheds, Salt Storage Buildings, Interchange Buildings Utility Buildings, Toll Plazas, Service Plazas, Training Facilities, etc.

PA Turnpike Construction PM will also create list of all primary building equipment that will be entered in SAP Plant Maintenance Module by the appropriate Facilities personnel.

B. Related Information

- Construction Operations Manual (COM): Part D – Section 1-1, Conduct Semi-Final/Final Inspection
- Asset Breakdown Form

H.05 Final Inspection

A. Introduction

The PA Turnpike Design Project Manager (PM) or Design Manager (DM) attends any semi-final and final inspections and provides concurrence of the project, or any deficiency to be included, onto the Punch List to have the contractor correct or construct prior to final acceptance of the project. If necessary, due to conflicts in schedules, the PA Turnpike Design PM or DM can coordinate with the PA Turnpike Construction PM and perform the inspection at another time prior to or after the scheduled inspection date.

B. Related Information

- Construction Operations Manual (COM): Part D – Section 1-1, Conduct Semi-Final/Final Inspection

H.06 Post-Construction/Design Meeting

A. Introduction

The PA Turnpike Design Project Manager (PM) or Design Manager (DM) attends this meeting. The PA Turnpike Design PM or DM can travel to the site of the meeting or attend by means of video conferencing. It typically is scheduled immediately after the Final Inspection. The PA Turnpike Construction PM sets up the meeting, prepares the agenda, and prepares the meeting

minutes. The PA Turnpike Design PM should forward the appointment to the appropriate design liaisons who were part of the project. The Post-Construction Meeting Report Template includes topics typically covered in the meeting. The PA Turnpike Design PM is forwarded a copy of the draft minutes to approve prior to the PA Turnpike Construction PM finalizing them.

If a PCDS is being used the Construction PM will prepare the meeting minutes and upload them to a Meeting Minutes folder created in the Project Management folder.

The minutes of this meeting serve as a Lesson Learned document and are shared with others in the Engineering Design Unit as well as with the Design Consultant.

B. Related Information

- Construction Operations Manual (COM): Part D – Section 2-1, Post-Construction Design Meeting
- Post-Construction Meeting Report Template