

Assistant Construction Engineer / Manager Manual

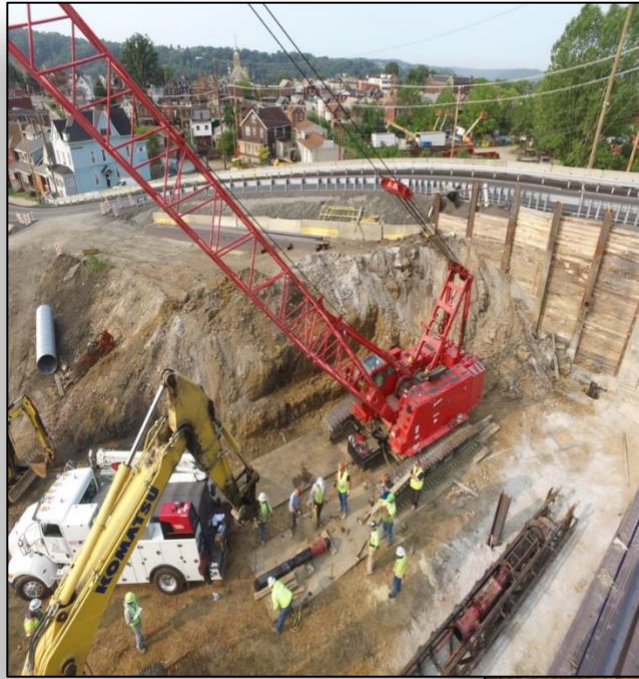


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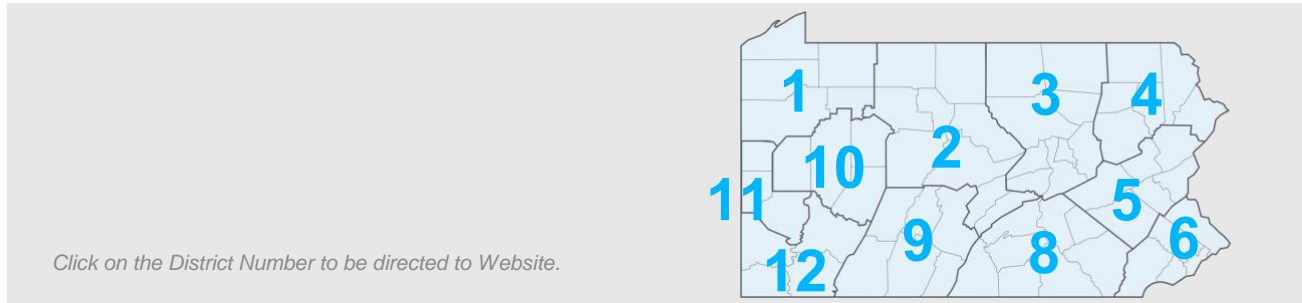
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ORGANIZATION OVERVIEW

The motto, "On time, on budget, and safely constructed," expresses the Department's overarching purposes for completing highway and bridge construction projects. Toward fulfilling the purposes of completing projects "on time and on budget", Assistant Construction Engineers / Managers (ACE/Ms) and their field staff (Managers, Supervisors, and Inspectors-in-Charge) must establish specific goals. However, the primary goal for any project is safety. ACE/Ms should be assured that Inspectors-in-Charge (IICs) will enforce all safety regulations for the Department's field staff and contractor's employees. ACE/Ms should also be assured that IICs are conducting regular safety meetings with their project staff and that Contractors are conducting weekly "toolbox" safety meetings. IICs should also encourage Department project staff to invite themselves to these "toolbox" safety discussions.

In order to meet project goals for safety and successful completion, an ACE/M (with involvement from a project's IIC) will begin every project by initiating communication with applicable District Units to fully develop a complete network of communications. A brief description of District Units follows.

DISTRICT DESIGN/BRIDGE UNIT

ACE/Ms should provide IICs with contact information for their Design Unit Project Manager whether projects were designed "in-house" or by a consultant firm. For projects involving structures, IICs should also contact their District Bridge Units and the Structures Control Engineers in their Construction Units to review scopes-of-work. This may be unnecessary if an IIC has already been involved in the design of a project or has participated in constructability reviews for a project.

COUNTY MAINTENANCE

ACE/Ms should make certain that IICs contact the Department's Assistant County Maintenance Manager who has maintenance responsibility for the area encompassing a project. Both parties should review project plans and specifications to ensure that County Maintenance concerns are addressed during construction.

GRADE CROSSING COORDINATOR

When a project will impact a railroad grade crossing, ACE/Ms should communicate with their District's Grade Crossing Coordinator. ACE/Ms should review all the requirements of a Public Utility Commission (PUC) Order with contractors, railroad representatives, and Department personnel at pre-construction conferences. Separate field meetings with IICs, contractors, and RR representatives may be necessary.

COMMUNITY RELATIONS COORDINATOR

Traffic impacts or detours resulting from highway construction must be communicated to a District Community Relations Coordinator (CRC). That responsibility may fall to an ACE/M or may be delegated to an IIC. Appropriate project information should be furnished, enabling a CRC to update their District's web page or project-specific website. Protocols for updating information, including frequency, may vary by District. Check with your District CRC for contacts, schedules, and protocols.

HAULING PERMITS

If the width of travel lanes through a project will be reduced or a detour is put into effect by construction activities, ACE/Ms or IICs notify the Hauling Permits office to restrict and divert wide loads. [Form M-937R, "Route/Bridge Restriction"](#) must be submitted to the Hauling Permits office at least 10 working days in advance of a restriction. Detailed information can be found in [PennDOT Publication 2, Project Office Manual](#), Section C.9.11-1.

TRAFFIC UNIT

When evaluating initial traffic control and detour setups, ACE/Ms and IICs coordinate with their District Traffic Units. Sign placement and conformity to Traffic Control Plans (TCP) are reviewed by Traffic Control Specialists assigned to the project. If there is a need to alter a TCP to accommodate field conditions, a District Traffic Unit representative should review and approve any changes. District Traffic Units also assist with locating pole foundations, reviewing shop drawings, programming traffic controllers, and participating in inspections for the start of 30-day signal tests. District Traffic Units should also assist with setting up Pennsylvania State Police coverage for projects, when necessary. A representative of a District Traffic Unit should be invited to attend pre-construction conferences.

SURVEY UNIT

Contractors are responsible for surveying, including staking structures, if applicable, and stationing for roadways. The Department is responsible for establishing Limits of Work as indicated in contract drawings. Survey Units can assist with providing project control points, as well as verification.

MATERIALS UNIT

ACE/Ms communicate with their District Materials Units to monitor the approval of sources of supply. ACE/Ms, along with IICs, work with their District Materials Units to address the disposition of failed materials, and to certify that all materials are in conformity with approved plans and specifications at project completion. Representatives from District

Materials Units should be invited to pre-construction conferences and should conduct periodic materials audits, as well as final materials audits.

UTILITIES UNIT

A District's Utilities Unit is available to relocate identified or unanticipated utility interference. A representative of the Utilities Unit should be invited to attend pre-construction conferences, as well as Utility Coordination Meetings with utilities' and contractors' representatives. Prompt identification, resolution, and disposition of utility conflicts are vital to completing a project on schedule. When utilities are being relocated on the project in advance of construction, inspection staff completes a Form D-4298, "Daily Utility Inspection Report". This form is used primarily during project design and may be requested or provided as part of a project's record upon project start. The form may be found in [PennDOT Publication 16, Design Manual Part 5](#), Appendix A, Figure A-1201. During the Construction Phase, utility work is documented in the PSA Utility log in the Engineering and Construction Management System (ECMS). [PennDOT Publication 2, Project Office Manual](#), Section B.1.11 provides additional guidance.

RIGHT-OF-WAY (ROW) UNIT

Involvement by a District Right-of-Way (ROW) Unit occurs primarily during project design. However, property owners may need reassurance that work on the project is within the Department ROW, or in cases of partial takes or easements, that they have been compensated for the actual impacts of construction specified in their ROW Agreement. A District ROW Unit can also assist with securing driveway releases. Invite a District ROW Unit representative to pre-construction conferences to discuss pertinent ROW issues, or to disseminate information about potential issues.

ENVIRONMENTAL UNIT

District Environmental Units provide guidance when modifications to project commitments, permits, or Erosion and Sediment Control Plans are necessary to meet field conditions. Representatives of District Environmental Units may also serve as liaison with local County Conservation Districts (CCD), the [PA Department of Environmental Protection \(PADEP\)](#), or the [US Army Corp of Engineers \(USACE\)](#). Representatives of District Environmental Units should be invited to pre-construction conferences to discuss permit requirements, the Environmental Commitments and Mitigation tracking System (ECMTS), and to have relevant forms signed.

GEOTECHNICAL UNIT

District Geotechnical Units assist with geotechnical issues, as well as large earthwork projects, and they verify the adequacy of structural foundations. ACE/Ms and IICs should involve their Geotechnical Unit when unfavorable subsurface conditions are encountered, such as unsuitable material, unstable material, sinkholes, and others. Representatives of District Geotechnical Units should be invited to pre-construction conferences to discuss pertinent geotechnical issues.

FINALS UNIT

ACE/Ms typically coordinate final paperwork between IICs and their Finals Units so that they may begin project finalization. ACE/Ms also monitor IICs for complete ECMS input necessary to begin a project's Finalization Checklist. The Finals Unit is responsible for interim and final audits of project records and initiate the processing of Acceptance Certificates and Notification of Final Quantities. Finals Units ensure that all contribution agreement payments are satisfied and coordinate closeout documents with the [Federal Highway Administration \(FHWA\)](#). Finally, they are responsible for archiving project records.

FISCAL UNIT AND PLANNING AND PROGRAMMING UNIT

Final costs and large extra or additional work costs should be reviewed with District Fiscal Units and Planning and Programming Units to assess budget impacts. Fiscal Units correct errors in the interface between ECMS and the SAP Enterprise Resource Planning System (SAP). If SAP rejects a pay estimate in a Payment Workflow, a Fiscal Unit revises the pay estimate.

Projects with FHWA oversight require FHWA 4232 Authorization before PS&E Approval and for any work orders over \$500,000. The Design Unit will coordinate with the Planning and Program Unit to input required 4232 information to the MPMS 4232 System. Once input by the Planning and Program Unit, 4232 information is transmitted to the Program Center, which reviews information and processes authorization requests through to the FHWA Regional Transportation Engineer for approval.

INFORMATION TECHNOLOGIES

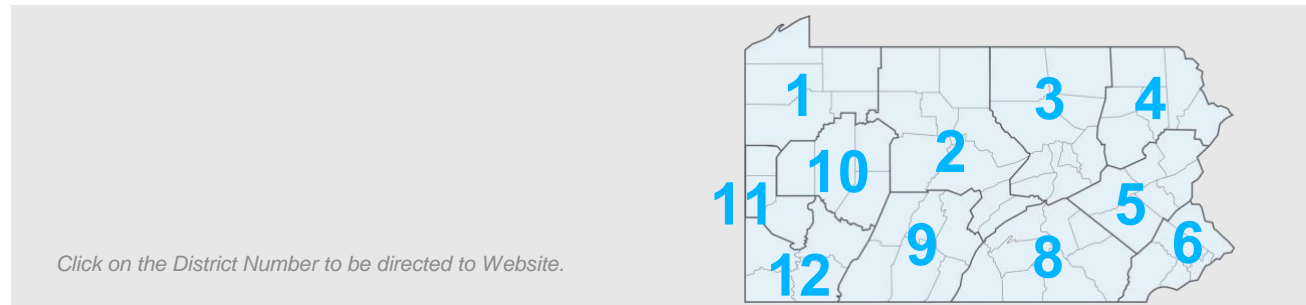
Currently, the Department uses four main computer systems that ACE/Ms work with regularly:

- Engineering and Construction Management System (ECMS)
- PennDOT Project Collaboration Center (PPCC)
- Multi-modal Project Management System (MPMS)
- SAP Enterprise Resource Planning System (SAP)

Together, these four systems provide a comprehensive set of tools, each with a unique role assisting ACE/Ms with their duties.

ECMS is a web-based program that provides a variety of project-specific information for all PennDOT Districts. With ECMS, ACE/Ms can perform daily tasks such as tracking letting schedules, issuing Notices-to-Proceed for their projects, justifying negotiated prices utilizing construction items' historical cost data, approving work orders and estimates, and accessing a wealth of project-specific information.

If ACE/Ms or field staff encounter a problem within ECMS, or have an idea to enhance the system, they should record the details, and then contact their District ECMS Coordinator by email or phone. The ECMS Coordinator will then report the incident through the Request for Service or call the IT Service Desk.

PRE-CONSTRUCTION ACTIVITIES**DESIGN**

ACE/Ms and their field staff can contribute to project design through pre-construction activities. Soliciting contributions and suggestions from field staff for project design, as well as the scheduling process, may serve as an excellent motivational tool. To reinforce that motivation, ACE/Ms could schedule their field staff to participate in pre-construction activities such as scoping field views, safety reviews, constructability reviews, design field views, and final design meetings whenever practical. Having one's ideas incorporated into a project's design can lend a great sense of accomplishment. Employing the experience of field staff could improve safety, reduce, or eliminate potential obstacles to success, and promote timely completion of a project's construction.

ACE/Ms and their field staff can also use this opportunity to share their construction knowledge with designers who may otherwise lack field experience. Conversely, designers may be able to demonstrate to field staff the processes involved in project design. Additionally, field managers may even be temporarily assigned to their District Design Units during periods of seasonal construction inactivity.

MILESTONE EVENTS & MEETINGS THROUGH DESIGN**SCOPING FIELD VIEW**

Every project is designed in two phases: Preliminary Engineering, and Final Design. After funding is secured, the official start of a project's design is the Scoping Field View. Every project, regardless of size or complexity, is subject to a Scoping Field View. ACE/Ms should attend, or have one of their field staff represent them, at the Scoping Field View for each of their projects. Depending upon their level of experience, input from ACE/Ms or field staff may be invaluable to a Scoping Field View.

The purpose of Scoping Field View is threefold:

1. To assess the level of effort required to advance a project to Plans, Specifications, and Estimates (PS&E) submittal, and to obtain environmental clearances.
2. To develop an accurate preliminary cost estimate of both design and construction costs for comparison to programmed costs.
3. To produce a comprehensive scoping document that:
 - Provides a clear description of project objectives.
 - Identifies project specific deliverables required for design development.
 - Serves as a basis for a consultant scope of work.
 - Identifies environmental resources which may be impacted by the project.
 - Evaluates all key issues affecting project development.
 - Assists the Design Project Manager with developing project schedules.

Detailed Scoping Field View procedures are provided in [PennDOT Publication 10C, Design Manual Part 1C](#), Chapter 2.2.B.6, "Scoping Field View."

VALUE ENGINEERING/ACCELERATED CONSTRUCTION TECHNOLOGY TRANSFER (VE/ACTT)

Value Engineering/Accelerated Construction Technology Transfer (VE/ACTT) is used to address well-defined challenges within project environments and make design decisions for key project components. Multi-discipline teams with key decision makers for each component are led by a Central Office VE/ACTT Coordinator and District Design Project Manager. A VE/ACTT team includes the project design team, contractors through APC, team leaders and individuals from different specialty areas, representatives from regulatory agencies, and FHWA transportation engineers.

Use VE/ACTT prior to starting preliminary or final design. It can be applied anytime during project development; however, application at early stages of project development will produce the most savings in engineering and construction costs.

See [PennDOT Publication 10X, Design Manual Part 1X](#), Appendices to Design Manuals, Appendix R.7 for additional information.

SAFETY REVIEW

PennDOT's design procedures require that a qualified District Safety Review Committee performs a Safety Review of every project. Safety Review occurs during Preliminary Engineering, before the Design Field View, when design is approximately 30% complete. The committee also determines if design exemptions may be granted for the project. Minutes of all Safety Review meetings are confidential and are identified as such when distributed.

See [PennDOT Publication 10X, Design Manual Part 1X](#), Appendices to Design Manuals, Appendix O, "Safety Review Procedures" for a detailed description of Safety Review procedures and a checklist of safety design features.

DESIGN FIELD VIEW

A Design Field View is conducted a few months after a Scoping Field View. At this meeting ACE/Ms review and discuss Design Field View Plans and may walk through the project with representatives from District Design, Maintenance, Traffic, Bridge, Utilities, and Environmental Units. Depending upon the type of funding and Scope of Work for the project, an FHWA Transportation Engineer may also attend.

At a Design Field View, ACE/Ms should identify potential problem areas and suggest possible solutions. An approximate starting date should also be established at this time. With an estimated date for the start of construction, ACE/Ms can begin to develop their staffing needs. Approval of Design Field View signals the end of Preliminary Engineering and the start of Final Design.

Detailed Design Field View procedures are provided in [PennDOT Publication 10C, Design Manual 1C](#), Chapter 3.6.B “Design Field View.”

DESIGN VALUE ENGINEERING

The FHWA requires a Value Engineering (VE) study for certain projects including:

- All projects on the National Highway System (NHS) receiving federal assistance with an estimated total cost of \$50 million or more.
- Bridge projects located on or off the NHS receiving federal assistance with an estimated total cost of \$40 million or more.
- Use of Federal-aid highway program (FAHP) funding on a Major Projects with an estimated cost of \$500 million or more.
- Any other Federal-aid projects the Secretary determines to be appropriate.

Studies must be performed using multidiscipline teams of individuals not personally involved in the design of the project. Study teams should consist of a team leader and individuals from different specialty areas, such as design, construction, environmental, planning, maintenance, ROW, and other areas depending upon the type of project under review. Studies lead to the development of a formal report outlining recommendations for improving a project and reducing overall costs.

DESIGN PROJECT CONTROL MEETINGS

Mid-sized and large projects have regularly scheduled project control meetings to coordinate work assignments, provide status updates to project teams, and allow direction from project managers. ACE/Ms or project IICs should make every attempt to attend design project control meetings.

FINAL DESIGN OFFICE MEETING

Final Design Office Meetings are design reviews conducted prior to the Final Design Plans Check and submission of PS&E packages. The purpose of these meetings is to provide an opportunity for the FHWA and the Bureau of Project Delivery (BOPD) to review and comment on a design. Final Design Office Meeting plans are forwarded to appropriate parties in advance, allowing sufficient time for a thorough review. At these meetings, review comments from all attendees are discussed and resolved.

In Final Design, PennDOT may elect to waive a Final Design Office Meeting and a Design Field View depending upon project type and complexity. ACE/Ms typically attend a constructability or safety review of a project prior to PS&E submission.

CONTRACT DEVELOPMENT

The Contract Management Unit receives Plans, Special Provisions, and Cost Estimates from Designers and generates bid documents. Information required by ACE/Ms includes:

Form CS101, Inspector's Field Office and Inspection Facilities Project Development Checklist

ACE/MS work with the Design Unit in their respective District to determine those items that should be included in an Inspector's Field Office and Inspection Facilities item in a project contracts. In addition, prime contractors may be required to provide an Internet Service Provider (ISP) for exclusive use by project staff for the duration of their projects. PennDOT provides project computers through a statewide lease agreement.

Complete a [Form CS101, "Inspector's Field Office and Inspection Facilities Project Development Checklist"](#) to specify the number and type of items that will be provided by PennDOT or the contractor. Such items include:

- Inspection trailers
- Field laboratories
- Communications equipment
- Specialized equipment
- Internet Service

The form also requires a section about level of Partnering and construction scheduling.

On the Job Training (OJT) Worksheet

An On the Job Training (OJT) Worksheet identifies whether a highway construction project's anticipated Scope of Work can support significant, effective, and meaningful training opportunities. If a project is identified as having the potential to support training, whether a federal-aid, state, or locally funded highway construction project, this identification will constitute inclusion of the "Training Special Provisions – Item 1999-9999" in the contract. The worksheet gives a suggested number of trainees based upon the estimated cost of the contract. However, a detailed review of a project's work operations in relation to the following should be considered when selecting the number of trainees.

1. The estimated minimum dollar value of a highway construction contract is \$3 million.
2. The duration of a contract must be anticipated to be a minimum of 7 months.
3. Project work operations must identify a minimum of 100 days that would support a specific craft. The anticipated scope of the work operations must indicate the potential for a significant, effective, and meaningful training program.
4. The work classifications or activities that can be supported by the anticipated scope of work of a project are identified from reviewing job descriptions, plans, and quantities.
5. Identification of a satisfactory ratio of trainees to journeymen anticipated to be in a contractor's workforce during normal operations must be identified. The U.S. Department of Labor recommends a ratio of between 1:10 and 1:4.

Also considered are factors such as:

1. Availability of minorities, females, and disadvantaged individuals, based upon geographic location of the project.
2. The total normal workforce expected for an average bidder.
3. An identified need for additional journeymen in the area.
4. The suggested minimum goal for the state.

Such a review will identify the potential number of training slots a PennDOT highway construction project can support. This information is also used to determine specific construction activities that would have potential to support significant, effective, and meaningful training opportunities, based upon a project's scheduled scope of work.

The final design phase of a project is also an excellent time to assist District Contract Management personnel with developing realistic schedules and reviewing project cost estimates. Construction Unit personnel typically have the experience to reliably estimate production rates and durations of numerous construction operations.

The OJT Worksheet is processed via ECMS from the project design manager to the District Labor Contract Compliance Agent (DLCCA), who coordinates with the project's ACE/Ms and completes the worksheet. The District Contract Management Manager (DCMM) reviews the Trainee Worksheet and approves the number of trainees, then forwards to Central Office's Bureau of Equal Opportunity (BEO), which will act as final reviewer/approver.

Road User Liquidated Damages (RULD)

Road User Liquidated Damages (RULD) are used in two different applications. RULD penalties can be assessed when certain elements of a project are not completed within a designated timeframe, either by number of days or by a specified milestone date. RULDs may also be assessed by the hour when contractors' traffic restrictions are not removed as required by applicable Maintenance and Protection of Traffic (MPT) special provisions.

Damages are calculated based upon the costs of delay of traffic due to an element of work. RULDs may be determined using the RULD Calculator in the ECMS File Cabinet.

The RULD rate must be supported by written analysis and justification, posted in the Project Development Checklist (PDC). Including a RULD rate is not recommended if a minimum RULD rate calculation is below \$1000/day. Use judgment if the calculation is excessively high. Damages are set to ensure accelerated construction, however if set too high an RULD may lead to claims.

For additional information refer to [PennDOT Publication 10C, Design Manual, Part 1C](#), Transportation Engineering Procedures, Chapter 5, Section 5.6D, "Road User Costs Determination" for guidance on developing the Road User Costs. [PennDOT Publication 448, Innovative Bidding Toolkit](#), Chapter 1, Sections 1.1.3 and 5.2.5, "Road User Costs" provides further guidance on calculating Road User Costs. Also, see [PennDOT Publication 51, PS&E Package Delivery Process Policies & Preparation Manual](#), Chapter 1.18.2 B, "Road Users Liquidated Damages."

Innovative Bidding

While most projects are delivered using the traditional method of design-bid-build with award to the lowest responsive bidder, PennDOT allows alternative or innovative bidding methods for certain projects where such methods are likely to reduce the time or money required to complete a project or are likely to improve the quality of a project. Innovative bidding strategies may result in a change to the traditional sequencing of the design-bid-build process, such as design-build, or may result in factors other than price used for project award, such as cost plus time bidding. Other innovative strategies may be implemented in conjunction with the traditional design-bid-build, low bid system, but involve changes to specific contract management aspects, such as lane rentals. Commonly used innovative bidding techniques include:

- Design Build (Low Bid or Adjusted Bid)
- Cost Plus Time (A + Bx) Bidding
- Lane Rental
- Incentive/Disincentive

- Warranties
- Lump Sum Bidding

If a project includes an innovative bidding method, ACE/Ms should refer to [PennDOT Publication 448, Innovative Bidding Toolkit](#). This publication defines each of the innovative bidding methods listed above and outlines the criteria used to determine projects that make good candidates for innovation bidding. Publication 448 also identifies the necessary pre-construction, during construction, and post construction procedures necessary to ensure compliance with PennDOT innovative bidding guidelines.

ENVIRONMENTAL PERMITS

ENVIRONMENTAL DUE DILIGENCE

Prior to letting construction contracts, Design Project Managers are responsible for conducting environmental due diligence for all potential excavated materials, whether placed within project limits or disposed outside the ROW. Determinations are documented on [Form D-1, "Environmental Due Diligence \(EDD\) Phase 1 Visual Inspection Form"](#) and, if questionable material is suspected, on [Form D-2, "Clean Fill Environmental Due Diligence \(EDD\) Phase 2."](#) These forms are attached to ECMS in the Permits Category of the PDC.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

National Pollution Discharge Elimination System Permits (NPDES) are mandatory for all projects that have more than five acres of earth disturbance. Construction projects larger than one acre require an NPDES permit if treated runoff flows into a waterway. Individual or General NPDES permits are completed and issued to PennDOT during the design phase. NPDES permits are attached to projects in the Permits Category of the PDC in ECMS. Permits are also attached to the contract.

WATERWAY PERMITS

Projects involving waters of the Commonwealth or of the United States require permits issued by the PADEP and the USACE. The USACE is responsible for administering Federal regulations under two separate authorities: Section 404 of the Clean Water Act (CWA) of 1972, and Section 10 of the Rivers and Harbors Act of 1899. PADEP issues Water Obstruction Permits required by 25 PA Code Chapter 105 Regulations.

Waterway permits required for PennDOT projects often include avoidance measures such as restrictions on the time of year during which in-stream work is permitted, and time of year restrictions for construction activities, or exclusion barriers during construction to avoid adverse impacts to endangered species. The permit process usually begins after NEPA approval. Mitigation activities and other commitments resulting from permits are therefore not documented as part of NEPA approval and must be documented during bid package preparation. Waterway permits are attached to a project in the Permits Category of the PDC in ECMS. Waterway permits are also attached to contracts.

JOINT PERMITS

Many permits are submitted to PADEP and USACE simultaneously through a joint permit application process. The USACE, in coordination with PADEP, administers a Regional General Permit known as the Pennsylvania State Programmatic General Permit (PASPGP). The PASPGP is a federal CWA, Section 404 Permit for various construction activities involving the discharge of dredge and fill material into waters of the United States. These permits are coordinated with other regulatory agencies with statutory authority such as the Pennsylvania Fish and Boat Commission

(PFBC), the US Coast Guard (USCG), the USACE, and other agencies as required to ensure attainment of all necessary regulatory permits or approvals.

CONSTRUCTABILITY

GENERAL

The purpose of a constructability review is to refine a project's design and increase its construction efficiency. Increased efficiency reduces the need for work orders and higher unit costs. Constructability reviews also have the potential to reduce disputes, cost overruns, and delays. [NCHRP Report 390, "Constructability Review Process for Transportation Facilities"](#) contains more information about the value of constructability reviews. Constructability reviews should be a part of the design process for every project.

Districts' Design and Construction Units benefit from input provided by ACE/Ms and their field staff by improving project quality, minimizing costly work orders, and reducing errors and omissions before projects are let. Recognizing and eliminating obstacles that may occur during construction enables contractors to deliver timely and quality projects without extra costs and delays.

Constructability review teams should consist of:

- District personnel from Design, Construction, and Maintenance Units as appropriate, based upon project scopes.
- Consultant staff as needed.
- Central Office and FHWA staff when determined to be necessary for complex projects.

Members of these teams should be experienced in construction, design, maintenance, contract management, and scheduling. Though not always practical, members that have a future role on a particular project will gain understanding of the background and insight to the goals of that project.

[PennDOT Publication 10X, Design Manual Part 1X](#), Appendix N.2, "Constructability/Maintainability," offers guidelines for conducting constructability reviews. These guidelines may be altered to accommodate differing sizes and complexities of projects. Actual review protocols may also vary by District. The guidelines suggest constructability reviews should be conducted at the following design phases of the project:

- At the Scoping Field View.
- Design Field View, including Supplemental Plans.
- Approximately 75%, including Pre-bid Construction Schedule.
- PS&E, including Special Provisions and Final Pre-bid Schedule.

Initial constructability reviews should address these issues:

- Environmental restrictions and mitigation requirements.
- Early concerns with proposed traffic control.
- Potential construction staging areas.
- Right of-way requirements.
- Hydraulic and geotechnical information.

- Proposed work plan and schedule.
- Potential alternatives.

All team members should bring a functional development checklist for their specific authority.

Subsequent meetings should include reviews of the changes made or incorporated since the initial meeting, such as:

- Detailed review of the geometric, earthwork, and grading plans.
- Preliminary quantity calculations.
- Current maintenance and protection of traffic plans.
- Construction staging areas.
- Permit applications and approvals progress.

Final constructability review meetings should include:

- Changes made or incorporated since the previous meeting.
- Incorporation of all notes from the Safety Review meeting.
- A random check of final quantities, contract special provisions, and project costs estimates.

Available plans, estimates, and meeting minutes should be distributed to all attendees at least two weeks prior to constructability review meetings. The goal of team members should be to reach a consensus on all comments before the final constructability review meeting is concluded.

See [PennDOT Publication 10X, Design Manual Part 1X](#), Appendices to Design Manuals, Appendix N, “Constructability Review Procedures for Highway and Bridge Projects.”

RIGHT-OF-WAY (ROW)

Identify ROW and Temporary Construction Easements (TCE) necessary to construct a project. Careful review is needed when constructing facilities adjacent to, or directly on the ROW line, or when constructing facilities with grade separation.

Existing improvements on ROW takes and TCEs must be identified and resolved by the ROW Unit. Any agreements made with property owners regarding existing improvements must be clearly communicated with ACE/Ms.

UTILITY COORDINATION

Identify utilities that require relocation to accommodate construction. Obtain necessary D-4181 permit applications, as well as contact information for a representative of each utility located within the project limits.

If relocation is required over a Railroad, ensure the necessary Right-of-Entry permits and Railroad Real Estate License Agreements are in place to facilitate utility relocation.

SPECIAL PROVISIONS

Check that the contract includes correct provisions for measurement and payment for all required work. One perspective is that if specifications are more general, contractors’ bids are more likely to be all-inclusive. In Unit Price

contracts, the opposite tends to be true. If the Department cannot identify exactly how each work item is measured or paid, a contractor may argue that it was not included in their bid and request payment as additional or extra work.

PROJECT PHASES

Details sometimes fall through the cracks between construction stages. Check each step of traffic switches or transitions from one stage to another to identify any work that might have been overlooked by reviewing the final configurations in each stage. Also, review the typical detail sheets and special provisions and determine if planned work is constructable.

SCHEDULING

BID SCHEDULE

The accuracy of any schedule is dependent upon the quality of planning that contributes to its preparation. Scheduling software programs are simply mathematical networks with no knowledge of construction. Construction knowledge and experience is essential to dividing the work into practical, manageable activities and logically sequencing those activities through relationship ties. Experience allows the Department to perform a reality check on the scope of each activity, estimated production rates, and the resources that are likely to be employed concurrently.

Field-experienced ACE/Ms or IICs should contribute to the development of accurate schedules. If a consultant construction manager is available, an ACE/M should request that a firm's scheduler participate in the development of a schedule. The planning that goes into developing a schedule also lends itself to effective constructability reviews, revealing sometimes overlooked tasks such as temporary work necessary to control erosion and sedimentation, provide drainage, or maintain traffic during construction.

The final design schedule will be incorporated into the PDC in ECMS to be made available to all prospective bidders. This will not be an electronic version, but a scanned document and is referred to as the Pre-Bid Construction Schedule. PennDOT's specified software for Bid Schedules is ASTA Powerproject.

SCHEDULE DEVELOPMENT

Developing a Design Construction Schedule can seem like an overwhelming task, especially considering the assumptions that must be made for the many variables under the control of contractors. For example, where will a contractor start work, how many crews and pieces of equipment will be available, and which methods will be employed?

As with all tasks, this one becomes more manageable when broken down into smaller components. A schedule is essentially activities, estimated durations, and sequence or logic ties.

Use ASTA Powerproject to manage the continual changes that will be made during schedule development. Schedule files may be saved and copied to provide points of divergence for exploring other possibilities without losing and re-creating work that has already been done.

ACTIVITIES

Begin by compiling a list of activities for a project. A project designer will have an inventory of work items, estimated quantities, and estimated unit prices for developing a cost estimate. This inventory could be a starting point for developing a list of schedule activities. Combine similar items into single activities. Add additional activities to represent work that might be incidental to a pay item but would require additional time to perform, or would be more manageable

if reflected as a separate activity. For example, fine-grading the subgrade is incidental to the subbase item, but should be reflected as a separate activity in the schedule.

Expect to develop many iterations of a schedule as work activities are refined. Remember that for phased projects, work items will be broken down into multiple activities to reflect work to be performed in different areas or phases.

DURATIONS

Durations are directly dependent upon the resources assigned to the activity and the means and methods used – all of which are determined by contractors.

Nonetheless, PennDOT can estimate durations by applying generally accepted production rates to estimated quantities. A widely known and respected source of cost and production data is “*Means Heavy Construction Cost Data*” published annually by R.S. Means (www.rsmeans.com).

SEQUENCE RELATIONSHIPS OR LOGIC TIES

The numerous sequencing possibilities will be limited by the Erosion and Sediment Pollution Control Plan (E&S) and the TCP. Use the E&S and TCP sequences as a foundation for determining the overall sequence of activities.

While the E&S and TCP will determine the sequence of many activities, contractors will likely determine the sequence of many activities. These relationships are referred to as "preferential logic." For example, E&S often applies to a specific watershed area. If a project contains multiple watershed areas, contractors will determine the order in which these areas are scheduled. Except at an intersection, traffic control on a mainline could have little effect on traffic control for an intersecting road. If a project contains multiple structures, contractors determine the order in which they move from structure to structure or component to component.

ACE/Ms are limited to making educated guesses about a contractor's preferred logic or sequence. If a project has numerous structures, they will likely be scheduled in a sequence suitable to a contractor. Referred to as "resource leveling," sequence activities so that the resource commitment is uniform over the length of project.

CALENDARS AND OTHER CONSIDERATIONS

Design schedules should reflect calendar restrictions and other considerations, such as coordination with utilities and railroads as dictated by project specific conditions. Lead times for fabrication should also be included in design schedules. Durations for these factors may vary based upon the timing of the notice to proceed (NTP) with respect to restriction periods or fabrication windows, such as steel rolling schedules. Seasonal limitations, weather, and [PennDOT Publication 408, Specifications](#), requirements should also be considered for items such as asphalt paving, seeding, plantings, tree cutting, particularly with respect to endangered species, stream restrictions, local festivals, and school busing.

THE GOAL OF THE SCHEDULE

No schedule will be perfect, regardless of how well it is planned. Many variables will be encountered throughout the duration of a project that may impact its schedule.

A schedule that is prepared to meet a preconceived date might be significantly different from one in which the schedule is allowed to forecast the completion date. Ideally, a Design Construction Schedule will be allowed to determine a practical completion date based upon scope of work, work sequences, and reasonable resource expectations.

A tightly scheduled project is likely to cost more due to increased supervision and premium time expenses. Although PennDOT gets the benefit of the lowest bid, if the successful bidder does not account for costs necessary to expedite the project, that project's schedule will be troubled from the bid opening.

STAFFING

DISTRICT CONSTRUCTION UNIT RESPONSIBILITIES DURING FINAL DESIGN

At the onset of the final design process, ACE/Ms may assign a supervisory member of their field staff to join a final design team. This assignment is great motivation when IICs/Supervisors/Managers are able to contribute to the design of a project, especially when they may have field responsibilities for that same project during an upcoming construction season.

During the final design process, District Construction Unit personnel assigned to a final design team may be able to accomplish the following:

- Identify and suggest potential cost containment measures that will benefit the project.
- Assist project designers with identifying impediments to the success of the project. If discovered during the latter stages of project development, addenda may be issued in a timely manner.
- Upgrade proprietary items necessary to construct a project safely and economically.
- Review project quantities and associated costs.
- Understand agreements reached with local municipalities and the budgets associated with those agreements. Provide IICs/Supervisors/Managers a chance to meet with local government officials and assess their involvement with a project.
- Determine local or State Police involvement for a project.
- Identify the utility companies that may impact project progress or may be impacted by a project. Construction Unit field staff representatives familiar with a project's location may also assist a design team with their local knowledge.
- Understand PUC processes when a railroad company is impacted.
- Assist with planning designated waste or borrow areas.
- Evaluate the accuracy of a proposed schedule.
- Review the imposition of RULD for missed milestone dates as specified in contracts.

An ideal time for assignment to a final design team is during the winter months when construction activities are typically reduced. Conversely, this time of year is often the busiest for the Design Unit preparing projects for lettings in the spring. The Construction Unit's assistance will enhance the Design Unit's ability to meet the proposed letting schedule.

For greater detail on the final design process, refer to [PennDOT Publication 10, Design Manual](#), Chapter 7, "Preliminary Engineering and Final Design Phase Procedures Overview."

DETERMINING STAFFING NEEDS

Staffing construction projects with the right personnel is critical to success. While there is no standard method for determining project staffing, following are criteria that can help guide the task. During the latter stages of a design effort, ACE/Ms can realistically anticipate their project staffing based upon anticipated letting dates, project scopes,

available funds, construction oversight budget limitations, contract Special Provisions, available personnel, and probable schedule.

Developing an inspection planning spreadsheet is a good way to determine how many inspectors may be provided for a specific project while keeping costs within a desired percentage of a total construction budget. Successful past projects may also serve as examples for determining inspection needs. PennDOT's MPMS contains sufficient information to enable ACE/Ms to make informed staffing decisions.

Project budgets alone are not sufficient to determine required management and inspection needs. Complexity, duration, and specialty items may require additional, specialized personnel available only from a consulting firm. Review of a project's Special Provisions should be conducted toward determining a need for specialized personnel. For example, if there are known hazardous materials within a project's limits, an ACE/M may want to include an environmental specialist who is familiar with the correct disposal and documentation processes for hazardous materials. For example, Certified Coatings Inspectors for bridge painting are typically consultants. When specialized personnel are required, consider if these personnel are readily available within the Construction Unit, the District, or the consultant community.

When evaluating a project for its inspection needs, consider its duration to determine not only the number of persons required, but when, and for how long, they are going to be needed. Projects with durations of two or more construction seasons need to be analyzed for staffing for each season, as well as inactivity periods, to determine layoff dates.

If project conditions require specialized training or certifications outside of PennDOT's standard certifications, consider training timelines in the staffing utilization plan. For example, projects over rail lines may require participation in rail owner-specific safety training for all inspection staff prior to entering the job site.

The number of inspection personnel to be assigned will determine consultant management and supervisory requirements. After the desired number of managers, supervisors, and inspectors is determined, decide whether the positions will be filled with Department personnel, consultant personnel, or a combination of both. Use available qualified Department personnel to manage, supervise, and inspect the project prior to filling positions from the consultant community.

DISTRICT CONSTRUCTION UNIT STAFFING

The following factors should be considered when choosing specific individuals to staff a project:

- Do their experience levels, character, and capabilities fit the needs of the project?
- Do the inspectors have the required certifications? (e.g., NECEPT, NICET, PennDOT concrete testing, nuclear gauge operation, ECMS experience, etc.)
- Do the inspectors live within a reasonable commuting distance from the project? (To minimize oversight costs for travel time, mileage reimbursement, and overtime.)

ACE/Ms should provide their field staff with current phone numbers for all District contacts, FHWA Transportation Engineers, and representatives from other state agencies. Field staff for each project should provide their ACE/Ms with phone numbers for project personnel including contractors, subcontractors, material suppliers, and emergency contacts.

Regulations for employees of the Commonwealth of PA are stipulated by the American Federation of State, County, and Municipal Employees' (AFSCME) Master Agreement. Articles 20 and 21 of the AFSCME Master Agreement stipulate regulations for overtime and shift differential. Note that beginning a work shift before 6:00 AM or after 12:00 Noon

entitles any Department Transportation Construction Inspector (TCI) or Supervisor (TCIS) to shift differential pay. Solicitation of volunteers for these work shifts should be conducted approximately two weeks in advance and offered to full-time Department employees before extending any offers to consultant inspection personnel. If ACE/Ms do not receive volunteers, they may assign those duties to available Department personnel with the least amount of seniority, qualified engineering interns, or consultant inspectors when available.

Winter reassignment is also based on seniority of Department personnel. Each District's Human Resources Unit annually solicits available positions within the District. When construction projects reduce or cease operations during the winter, Department personnel may choose from available winter reassignments. Preferred assignments are granted based upon seniority. Details are contained in AFSCME's Master Agreement, Appendix J, Technical Services Unit under the section entitled "Seasonal Reassignments." On a project-by-project basis, no qualified permanent employees shall be reassigned before temporary, part-time, engineering interns, or consultant personnel. Returning from seasonal reassignment is also addressed in the AFSCME Master Agreement, Appendix J, Technical Services Unit.

Occasionally, ACE/Ms may need to provide personnel for a temporary assignment. Temporary assignments may be necessary to supplement staff on another project due to a heavy workload, to substitute for another person due to illness or scheduled vacation, or to staff an emergency contract.

Consider the following criteria when choosing a candidate to fill the temporary assignment:

- Specific expertise or training that will limit potential candidates.
- Duration of the temporary assignment.
- Level of expertise. If an assignment requires a lead person, candidates must be able to perform with minimal or no supervision. If an assignment requires personnel to assist an experienced person, that assignment may present a training opportunity for a less experienced inspector.
- Ability to leave current duties for the specified amount of time without creating hardships with an original assignment.
- Other ACE/Ms in the District might have a qualified employee available.
- An open-end consultant agreement may be available to fill a temporary assignment or to replace the Department's original assignment when the need cannot be filled from within the Department.

CONSULTANT STAFFING

When workloads increase, the Department may solicit construction managers, supervisors, or inspectors from reliable consulting firms. When the need for consultant assistance is identified, ACE/Ms should develop agreement scopes of work and cost estimates. Cost estimate should be aggregated with all other project inspection costs and the aggregated total inspection costs should be less than a project's current estimated construction inspection funds. If aggregated inspection costs are higher than current estimated costs, additional funds must be secured through the Planning and Programming and/or Fiscal Units. Many Districts have Consultant Agreement managers, supervisors, or specialists to assist with consultant agreement setup, advertising, selection and agreement execution processes. Consultant forces may be secured through either an Open-End agreement or through a Project Specific agreement. Open-End Agreements can also be developed for groups of projects in which inspection services are provided as-needed. For more information refer to [PennDOT Publication 93, "Policy and Procedures for the Administration of Consultant Agreements."](#)

ACE/Ms may involve their field staff managers, supervisors, and IICs with making project-specific consultant personnel decisions. If field staff is familiar with a contract, they will understand the skills and resources required for adequate

staffing. Field staff is also more likely to have first-hand knowledge of potential consultant staff and of specific individuals' abilities.

CONSULTANT AGREEMENTS

PLANNED PROJECT

A published Planned Project serves as the initial notification of an upcoming Consultant Agreement advertisement. The description of work described in the Planned Project should be as detailed as possible, giving potential respondents the information they need to decide whether they should begin the preliminary work of developing a response, such as making teaming arrangements. Planned Project announcements must be posted for 14 days before advertisement in ECMS. See [PennDOT Publication 93, "Policy and Procedures for the Administration of Consultant Agreements"](#) for more details.

ADVERTISEMENT

Consultant Advertisements are developed by the Districts and submitted to the Consultant Agreement Section of the Bureau of Design for review. After approval, and the minimum 14-day time frame for the Planned Project listing has passed, the Consultant Agreement Section may post the Advertisement in ECMS. Advertisements must be posted a minimum of 10 days prior to due date. Posted information that is available during advertisement includes project estimated construction costs, staffing needs, project name, location, work summary details, DBE Participation Levels, and consultant staffing needs listed by classification type.

Coordinate with the District representative responsible for drafting a construction inspection Advertisement to determine anticipated project start dates for inspection staff. Anticipated project start dates are entered into the project Advertisement. Beginning on an anticipated start date, a two-week window opens during which some rules and penalties for the inspector approval process differ from the period beyond the two-week window. While these dates are typically established months into the future, inserting the most realistic date possible for each project included in an Advertisement is very important. ACE/Ms should note that if no date is specified on the Advertisement, consultants must then follow the procedures as if the two-week window were missed by the Department.

During Advertisement, an ACE/M can develop the Consultant Scope of Work. This scope of work is detailed in the next section and is required for submission in ECMS upon final ranking and selection.

SELECTION

Consultant Statements of Interest submitted during the Advertisement process are compiled and distributed to a Selection Review Committee, which is typically led by an ACE/M. When evaluating consultants for selection, consider the weighted criteria for selection included in the advertisement, as well as the skills and experience of proposed individuals. A selection matrix in spreadsheet format can be very useful when determining the best qualified consultant. After review, the top three responses are assigned a ranking order. A District will provide the recommended selection, rankings, Scope of Work, and estimated cost to the Consultant Agreement Section one week prior, at a minimum, to the Consultant Selection Committee (CSC) Meeting for approval and selection announcement. Final Selection announcements are made on the CSC Meeting page in ECMS, generally on the second Wednesday of each month.

SCOPE OF WORK

A standard consultant Scope of Work addresses the following criteria:

- Staffing
 - Conduct of the staff assigned to the project
 - Establishment of a projects' inspection staff
 - Resume submissions and minimum experience / training requirements for each classification advertised
- Method of Payment
 - Specific rate of compensation
 - Direct cost other than payroll
- Pre-construction considerations
 - Notice to Proceed
 - Pre-construction conference
- Records and Documentation
 - Project documentation
 - Required publications for projects
- Construction Inspection
 - Hierarchy
 - Documentation responsibilities of inspection staff
 - Coatings inspection (when applicable)
- Materials Controls
 - Acceptance testing and inspections
 - Quality Assurance programs
 - Project materials certifications
- Payments to contractors
 - Payments
 - Estimates
- Work Orders
 - Preparation
 - Issuance
- Monitoring contract time and schedule adjustments
 - Assistance to the Department
 - Contract time and schedule adjustments
- Contract compliance
 - Labor compliance
 - Construction safety
 - Equal opportunity
- Contract finalization and project acceptance
 - Final inspection
 - Final settlement of contract
 - Records retention

Central Office can provide input and guidance when the Scope of Work requires specialized work or services. The Scope of Work also lists the maximum straight time hourly payroll rates for all classifications. For Project specific agreements, staffing requirements for each part of an agreement are detailed.

TECHNICAL PROPOSALS

After consultant selection is made, a project moves into the Negotiations stage in ECMS. During the Negotiation stage the Scope of Work must be published in ECMS. Consultants will not be able to submit technical or price proposals until the Scope of Work is published in ECMS.

After selection, and before the Technical Proposal due date, a Scope Clarification Meeting should be scheduled to establish mutual expectations for project scope, deliverables, project timeline, and staffing start up. Scope Clarification meetings may occur by phone or in person. For Open End agreements, a Scope Clarification Meeting should be held upon issuance of each Work Order. Consultants are responsible for recording minutes of these meetings, and pertinent information should be incorporated into their Technical Proposals. If necessary, a field view may also be scheduled at this stage of the process. This meeting should not include discussion about work hours or pricing, but should include discussion relative to technical needs and staffing. However, determination of the overhead rate for consultants may be made during the Scope Clarification Meeting.

Technical Proposals must be submitted in ECMS and are typically due within 7 days of request. Proposals should address each item of the Scope of Work and should generally be organized to be consistent with the order of tasks identified in the Scope of Work. Technical Proposals should not include information related to price.

After a Technical Proposal has been submitted, ACE/Ms should review the document to determine that each item of the Scope of Work is addressed, showing technical competence in completing the required work. Each person reviewing the Technical Proposal should complete Form D-12, "Review of Technical Proposal," found in [PennDOT Publication 93](#), Appendix 2G.

If revisions to a Technical Proposal are required, the due date should be revised, and the Scope of Work republished. Consultants will not be able to revise a Technical Proposal until the due date is revised, and a Scope of Work is republished.

PRICE PROPOSAL

After a Prime consultant has submitted a Technical Proposal in ECMS, a Price Proposal may be created. However, consultants will not have the ability to create a Price Proposal until the due date for the Technical Proposal has passed. If a Technical Proposal has been submitted and found acceptable in advance of the due date, ACE/Ms may revise due dates earlier to allow earlier access for consultants to create a Price Proposal.

The purpose of the Price Proposal is to establish a fair and reasonable cost for the effort to complete the tasks included in the Scope of Work. Items to be evaluated in the Price Proposal are:

- Scope of Work/Technical Proposal
- Consultant's Work-hour Estimate
 - Total hours
 - Distribution of hours
- Proposed Staffing
 - Classification

- Hours
- Experience Level
- Average Payroll Rates
- Overhead Rate
- Profit or Fixed Fee
- Direct Costs Other Than Payroll
- Direct Costs of Services and Work by Others
- DBE Goal
- Project Schedule
- Escalation

Price Proposal submissions must include current approved wage rates for proposed personnel. The wage rate approval process is detailed in the following section. A Price Proposal may be accepted or rejected and returned for correction in ECMS. Only the Negotiation Engineer or Portfolio Manager can reject a Price Proposal in ECMS.

WAGE RATE APPROVAL PROCESS

Upon notification of their selection, consultants submit wage rate requests based upon their Technical Proposal. Wage rate requests are generated using a consultant's Employee Roster Maintenance in ECMS. Each inspector must have a 'Parent Approval' prior to being eligible to be nominated to a project. Parent Approval requests are submitted to the Contract Management Section through ECMS. After Parent Approval is obtained, requests are 'Nominated' to the District for formal approval for a particular agreement. Districts are responsible to review and approve wage rate requests through ECMS within five working days. No work is to occur without ECMS wage rate approval.

CONSULTANT MANAGEMENT

No one within PennDOT has the authority to direct a consultant to perform work without ECMS wage rate approval. A PennDOT representative that directs a consultant to perform work without ECMS wage rate approval will be subject to disciplinary action.

Likewise, consultant employee substitutions require resume and wage rate approvals prior to any work being completed by that person.

During the course of a project, an inspector within the Technical Assistant (TA), TCI, TCIS, or Transportation Construction Manager (TCM) classifications may be promoted to the next level within the classification if the required certifications are obtained. An inspector cannot move more than one level during any 12 month period. An inspector cannot move to the next classification, (TCI to TCIS for example) during a project unless the project's original advertisement would allow the promotion based upon the number of inspectors needed at the higher classification, or if the District concurs with the need for the higher level position.

PennDOT may request consultant nominations as needed. As consultant resources are needed, PennDOT will provide all assignment requests in writing. Email is the preferred method. Consultants are responsible for maintaining copies of all requests. PennDOT can request for the following classifications (TA, TCI, TCIS, or TCM), and specific experience required (asphalt paving, bridge inspection, etc.). Individuals assigned to these classifications will be determined by consultants.

TA level inspectors do not count towards the number of requested TCIs listed in an advertisement. As the intent is to promote TA positions in this industry, if a TA-2 is qualified for promotion to a TCI and 12 months has passed since their

last promotion, they may be promoted even if there is not an available TCI position remaining. For example, if a project started with 2 TA positions and 8 TCI positions, the promotion of those TA positions may result in 10 TCI positions by the end of the project.

A District may not request specific persons by name or pay level (such as TCI2). Prime consultants are solely responsible for adding or removing subconsultants to meet contractual obligations, including DBE requirements.

All construction inspection firms are required to enter an 'Effective End Date' in ECMS for all inspection wage rate requests. The Effective End Date is the expiration date of the earliest expiring certification that would affect classification requirements as documented on the individual's resume. After a wage rate request expires in ECMS, an inspector will not appear on their firm's employee roster for that classification when creating and processing invoices. Work performed on a project by an individual after an effective end date is not eligible for payment.

If an Effective End Date is entered, a consultant can monitor when individuals' rates will expire in ECMS by checking the Employee Expiring Rates link on the Consultant Information Portal. This link provides a list of rates expiring within the next thirty days, affording adequate time to submit an updated resume to retain the classification.

On multi-year agreements in which certifications must be updated on inspectors' resumes to meet current pay rates, or in cases where a consultant submits a substitution request, District reviewers will need to review and approve or reject requests separately from those completed for an original Price Proposal.

In all cases, District reviewers have responsibility for the following:

- Checking 'My Work Queue' daily to see any wage rate approvals that require action.
- Approving or rejecting consultant wage rates within 5 working days of submission.

Important Notes:

- There is a minimum of a one-day advance notice required for staffing. A consultant inspector cannot be submitted and assigned to a project on the same day.
- An inspector cannot begin work until after the effective date shown in ECMS. An effective date entered by a consultant should match this date with the written staffing request provided by an ACE/M or their designee.
- Each inspector on each agreement must be individually submitted and approved.

Other helpful information to be used in the evaluation of the wage rate submission is as follows:

- Consultant wage rate approvals are for an entire agreement and approvals are not required for each part or work order.
- New wage rate approvals are needed for consultant inspector rate increases or promotions.
- Should the amount of staffing requested for a project exceed the number of individuals listed in the Statement of Interest for a specific classification, inspectors must only meet the minimum qualifications of the requested classification.
- TAs may be staffed on a project regardless of the TA being listed in the Advertisement. The assignment of TAs must follow the Process Control requirements.
- Municipal Projects that have PennDOT oversight must follow the same requirements.

- Consultants must submit approved resumes for each inspector meeting their current classification and pay rate. If a valid certification is needed to justify a rate, when that certification is renewed an updated resume must be submitted and approved prior to the certification expiration date.
- Consultants have the right to appeal sanctions within 21 days of notification of violations. A consultant requests an Administrative Review, chaired by the BOPD, and attended by that consultant, PennDOT Central Office staff, and ACEC/PA's Executive Vice President. Should a sanction be found to have merit during this information hearing, a consultant may then request a formal hearing for a final determination.

LEGAL AGREEMENT AND NOTICE TO PROCEED (NTP)

After a Price Proposal and Technical Proposal are accepted, a Legal Agreement is executed in ECMS. At the Legal Execution stage, Consultant Evaluations are created for acknowledgement by consultants. For more on the Legal Agreement process refer to PennDOT Publication 93. There are several levels of approval required for execution of the Legal Agreement. After a Legal Agreement is executed in ECMS, ACE/Ms may issue a NTP. No consultant work should be performed prior to an NTP. Consultant work performed prior to an NTP is not eligible for payment. NTP for Work Orders under an Open-End Agreement occurs at the time of consultant signature on the work order.

AGREEMENT ADMINISTRATION

1. The Department will notify consultants at least two weeks prior to individual staffing assignments, whenever possible.
2. Consultant staff assigned to a project shall remain for the duration of the project, contingent upon project needs, unless the Department approves a transfer or promotion, temporarily suspends inspection services, terminates project employment, or a consultant no longer employs an assigned employee.
3. The Department reserves the right to order immediate removal of any of a consultant's staff from a project because of unsatisfactory performance or behavior.
4. The Department reserves the right, upon giving a minimum of two weeks' notice, to replace any or all of a consultant's project staff with Department employees.
5. The Department reserves the right to remove any or all of a consultant's staff due to delay, discontinuation, or termination of a construction contractor's operations. The Department will attempt to give a consultant notice as soon as a construction contractor notifies the Department.
6. Consultant employees shall be provided opportunity to work a minimum of 37.5 hours per week, including Saturdays and Sundays, provided there is meaningful project related work available. Consultant staff will be provided the opportunity to work the same as Department employees during periods of reduced construction activities; that is, they may work on the field books, etc., rather than being sent home. The Department has the discretion to stagger assignment of staff and reduce staff complement according to project construction activities. Inspection activities should follow the Risk-Based Construction Inspection Guidelines outlined in [PennDOT Publication 2, Project Office Manual](#), Section C.1 to determine inspection needs. Holidays, vacation days, and sick leave days, while not reimbursed, will be counted as part of the 37.5 hours.
7. Prior to, and throughout construction, ACE/Ms should coordinate with consultant managers to ensure both parties monitor consultant agreement budgets and completion dates in the event a time extension or supplement is needed. The Department cannot pay for work performed prior to an executed supplement if the funds have run out. Additionally, after an agreement expires it cannot be extended. ACE/Ms shall refer to [PennDOT Publication 93](#), Chapter 4, and Chapter 6 for more information.

PRE-BID CONFERENCES

Pre-Bid Conferences are scheduled for complex projects to emphasize and clarify important project details or requirements. Pre-Bid Conferences also provide an opportunity to discuss project issues between the Department and contractors. The decision to conduct a Pre-Bid Conference is made with the concurrence of a Design Project Manager and a Construction ACE/M.

Pre-bid conferences should be scheduled 14 calendar days after the Advertisement date and 14 calendar days prior to the Letting Date to enable bidders to have sufficient time to review the Bid Package and to allow sufficient time to issue addenda, if required. At the beginning and end of the meeting clearly state that issues raised, comments made, or opinions expressed during such meetings are not binding to the contract unless issued by an addendum.

All attendees at Pre-Bid Conferences are required to sign a register, which includes their name, company, and telephone number. A copy of this register should be made available at the end of each conference. Some transportation projects may require Mandatory Pre-Bid Conferences, in which all prospective bidders must ensure that a representative is in attendance and has signed the register. Conduct a Mandatory Pre-Bid Conference only when it is imperative to draw attention to particular details or conditions to enable the prospective bidders to fully understand the requirements.

Additional information and policies on Pre-Bid Conferences are provided in [PennDOT Publication 2, Project Office Manual](#), Section A.2.1, "Pre-Bid Conference," and [PennDOT Publication 51, PS&E Package Delivery Process Policies & Preparation Manual](#), Chapter 14.2.B, "Pre-Bid Conference."

LETTING

Upon completing their contributions to final design of a project, ACE/Ms then monitor the progression from design to construction when their projects move from 'Advertised' status to the actual letting (bid opening) of projects in ECMS.

ADVERTISEMENT PERIOD

During an Advertisement period, contractors have the ability to ask questions through ECMS. If questions require construction expertise, ACE/Ms or their representative may be asked to compose the Department's response. All questions and responses are in the Bid Package link, within the Solicitation Section of the Project Information Page in ECMS. Upon entering the Bid Package page, scroll to the bottom for Questions and Responses. Pay attention to the deadlines for questions and responses. For example, for a bid opening scheduled for a Thursday at 11:00 AM, the deadline for contractor questions is Monday at 11:00 AM and the cut-off for answers to those questions is Tuesday at midnight.

The questions and responses function allows for clarifying contract documents. Responses should be short and concise. If they cannot be short, responses should be issued by addendum. Also, responses requiring changes to contract quantities and special provisions should be issued by addendum in order to be binding.

After proposals have been received and all items have been verified by the Department, the apparent lowest, responsive, and responsible bidder is announced on the bid opening date. In ECMS, bid results will indicate that a bid has indeed been 'Verified' and that project will be placed in 'Pre-Award' status.

ACTIONS REQUIRED FOR AWARD

ECMS will automatically check low bidders' Available Capacity and Work Class Codes, Program Management Committee (PMC) funding, and bid tabulations against designers' cost estimates.

If a low bidder does not pass Available Capacity or Work Class Codes, the Contract Management Section will move to disqualify that low bidder. A decision to disqualify will move the process to either consideration of the next lowest bidder or to reject all bids and rebid the project. Districts are involved in this process, and rejecting bids and rebidding may significantly delay project start dates.

If a low bid reveals that PMC funding is insufficient, additional funding must be secured before the project award process can move forward. If a low bid versus the designers cost estimate varies by more than 10% for any item, additional review is required. A District Contract Management Unit will need to prepare justifications for differences after consultation with a low bidder and designer.

Successful bidders then must submit this documentation:

- Certificate of Liability Insurance for a project as well as any other certificates for third parties required by special provisions.
- Component Item Schedule (CIS) for each lump sum item requiring a CIS. This must be submitted within seven days of a bid opening.
- Submit a 'Minority Participation and Commitment' in ECMS within seven days for projects requiring adherence to DSP7, Disadvantaged Business Enterprise (DBE) Requirements for Federally-Funded Construction Projects. If a successful bidder does not submit this documentation within seven days, the Contract Management Section will move to disqualify the low bidder and move to the next lowest bidder. Adherence to DSP7 may require an additional information submission to minorityparticipation@pa.gov for information not captured in ECMS' 'Minority Participation and Commitment' screen related to the apparent low bidder's DBE participation.
- Submit 'Good Faith Effort' documentation within seven days for projects requiring adherence to DSP4, Disadvantaged Business Requirements for Non-Federally Funded Construction Projects. If a successful bidder does not submit this documentation within seven days, the Contract Management Section will move to disqualify the low bidder and move to the next lowest bidder. Adherence to DSP4 may require either submission of a 'Minority Participation and Commitment' in ECMS or submission of good faith efforts documentation during the bid solicitation to minorityparticipation@pa.gov. Contractors that will 100% self-perform work must also submit paper documentation to minorityparticipation@pa.gov.

The BOPD, Contract Management Section will review and approve the following:

- [Public Works Employment Verification Form](#)
- DBE Commitment
- Good Faith Efforts
- Federal Debarment
- Commonwealth Contractor Responsibility Program

An award process may be monitored on the Contract Award Checklist link in the Award Section of a project's main page in ECMS.

A contract must be awarded within 60 days of the bid opening. Best practice is to monitor the award process and if necessary, contact the Contract Management Section if the project is approaching the 60-day deadline. The Contract Management Section can issue correspondence to the lower bidder requesting mutual agreement for extending an award.

When all automatic and Pre-Award Checklist Items are Passed, Approved, or Complete, and all required insurance certificates are received, a project will be placed in 'Award' status.

ACTIONS REQUIRED FOR EXECUTION

Contractors are notified of project awards by the Secretary of Transportation. Awards are placed in 'Award' status in ECMS. Contractors then have ten days to return contracts to the Department with appropriate signatures, and performance and payment bonds.

Detailed information on submission requirements is contained in [PennDOT Publication 408](#), Section 103, "Award and Execution of the Contract."

Contract execution requires several steps and approvals from several entities, which occur in the following order:

- Draft
- Contractor Review
- BOD CMD Review
- BOD Director Review
- Chief Counsel Preliminary Review
- Chief Counsel Final Review
- Comptroller Review
- CMD Execute

The status of contract execution may be tracked from the Contract link in the Award section of a project's main page. Scroll to the bottom of the page to see the Workflow. Contracts and contract attachments are compiled into two PDF documents and may be found here, as well.

When all approvals are complete, a contract will be executed. In ECMS this action will move project status to 'Pre-Construction.'

POST-AWARD/PRE-CONSTRUCTION STATUS

After a contract is executed, ECMS status updates to 'Pre-Construction.' ACE/Ms should contact low bidders and schedule pre-construction meetings prior to Anticipated NTP dates, and within 30 days from dates of award.

NOTIFICATIONS

If a NTP date cannot be scheduled within 30 days from an Award date, extensions to the 30-day requirement may occur, but only in 30-day increments and with mutual written consent of the contract parties, provided the consent is given before the expiration of the 30-day period. In these cases, a letter is sent to a low bidder requesting concurrence for a 30-day extension of a NTP. The letter should contain language that all bid unit costs will be held. Provide a signature line for bidder's concurrence.

PENNDOT PROJECT COLLABORATION CENTER (PPCC) SET-UP

Coordinate with the designated District PPCC Coordinator to ensure a project is set up in the PPCC. This set-up includes the project filing system and assigning the project specific user designation roles. Assigning the appropriate designated user roles will ensure an efficient line of communication for all project correspondence including certified payrolls, submittals, and Requests for Information (RFI). ACE/Ms should double check the user designation roles to make sure the correct personnel are assigned, as well as the submission categories, to ensure the proper approval authorities are assigned.

ISSUANCE OF NOTICE TO PROCEED (NTP)

Before a project's NTP is issued and before its pre-construction conference, both an ACE/M and a Project Manager/Supervisor should review its Contract, Special Provisions, Plans, funding breakdowns, asphalt and diesel eligibility, and quantities, for possible errors, omissions, or savings, which may substantially impact final costs. This is also the time to take advantage of changes in standards or specifications for the project's benefit, which may yield a better product than was originally designed. A contractor may be notified of such changes before a pre-construction conference.

Only ACE/Ms, ADEs, and Bureau of Construction and Materials Contract Administrators have the authority to issue a NTP. All NTPs are issued in ECMS. To issue a NTP, click the Edit button on the Detail Information Banner on the project's Home Page. On the Project Detail page go down to the Construction Information section and enter Data Source, typically ECMS w/PSA option, and the select on the yes/no boxes for PSA QC, Force Account QC, Source of Supply QC, and Asphalt/Diesel boxes; although some may be prepopulated, they still need to be reviewed. After providing this information into ECMS, enter the project NTP date. Note that NTPs cannot be backdated, as ECMS will not allow a NTP date prior to the current date.

The issuance of a NTP moves a project from 'Pre-Construction' status to 'Notice to Proceed Issued' status. On the NTP date the project status will move to 'Construction.' After ECMS has assigned an actual NTP date, an email notification is automatically sent to the prime contractor advising them that physical work on the project may begin on the assigned NTP date. The ADE for Construction is also notified via Email.

PRE-CONSTRUCTION MEETING

SCHEDULING/NOTIFICATION

When ECMS notifies ACE/Ms that a project has been executed, they should schedule a pre-construction conference to be held prior to issuing an Anticipated NTP Date. Depending upon public health conditions, meetings may be held virtually or in person. ACE/Ms should invite contractors and other appropriate attendees, and reserve a meeting room in the District Office for in-person meetings. If required attendance is larger than can be accommodated at the District Office, pre-construction conferences may be held outside the District Office. Pre-construction conferences for large or complex projects may also be combined with initial Partnering Kickoff Meetings.

Attendees should include the District units that participated during the design phase. Construction Unit representatives should include IICs, Labor Compliance Agent, Materials representatives and assigned consultant managers. The DLCCA will discuss Designated Special Provisions (DSP), Safety, and Diverse Business Enterprise (DBE)/Minority Business Enterprise (MBE)/Woman Business Enterprise (WBE) goals.

All utilities with restrictive, concurrent, or coordinated work should be invited as well. Local county, township and/or borough officials should also be invited when local coordination is anticipated. If a project requires railroad coordination, invite representatives from respective railroad companies.

AGENDA

Agenda topics for pre-construction conferences include:

- Key project personnel introductions.
- Contract execution including Award Letter conditions.
- Project scope review including current governing plans and specifications review, addenda reviews, and highlights or clarifications to plans or special provisions.
- Safety Considerations.
- Insurance requirements and the process for submission of renewal certificates throughout construction.
- Contractor project staffing plan.
- Decision making hierarchy including escalation matrix.
- Project schedule overview including schedule submission requirements.
- Environmental permit requirements and environmental working restrictions, along with notification requirements of project start to permit issuing entities such as PADEP and Army Corp of Engineers.
- Maintenance of traffic requirements, including detours, lane closure restrictions, bridge weight, or hauling permit restrictions.
- Submittal/RFI Process; required project submittals include priority or long lead-time item submissions and necessary 3rd party reviews.
- Material sampling and testing procedures.
- Structure Control Engineer requirements
- Subcontractor and Trainee approval.
- DBE participation and EEO & Labor Compliance requirements.
- Funding source and associated requirements.
- Payment process review including authorization for extra work.
- Utility and Railroad coordination and requirements.
- Right of Way.
- Construction Survey and Stakeout data.
- ADA Curb Compliance and Guiderail requirements.

Pre-Construction Meeting items are further detailed in [PennDOT Publication 2, Project Office Manual](#), Section A.3.1-1.

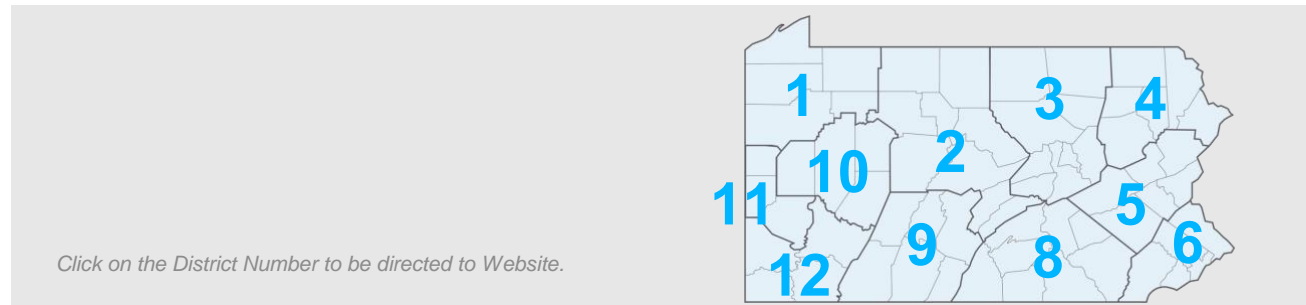
CONTRACTOR NOTIFICATION OF PRE-CONSTRUCTION REQUIREMENTS

After scheduling, send a letter to the prime contractor to detail information required for the pre-construction conference including the agenda topics to be discussed and the required items or submissions to be presented. [PennDOT Publication 408](#) requires that contractors provide certain submissions at, or in advance of, the pre-construction conference including:

- Project contact list including names, titles, and contact information for key project personnel, including at least the proposed superintendent, project engineer, foremen, surveyor, construction schedule coordinator, continuous traffic control supervisor, and emergency contacts.
- [Form CS-8, "Issue Escalation Matrix"](#) with contractor's proposed levels and represented personnel.
- Material Sources of Supply – Contractor to submit sources of supply in ECMS for each applicable construction item. This function is available under the 'Construct' column on the ECMS project home page. Many submissions will be reviewed within the ECMS database and automatically approved. Others will be reviewed and approved by the District Materials Engineer.
- Work Plan or 60-Day Calendar Schedule dependent upon the type of schedule required by the project (See Schedule Section in Construction for details and [PennDOT Publication 408](#), Section 689.
- Source of Concrete and Asphalt Concrete including all proposed mix designs (Including backup mix designs).
- Completed [Form CS-430, "Notification of Inspection"](#) form for all fabricated products.
- The proposed water source for drinking water and construction use.
- Quality Control Plans, which include testing and operational procedures in accordance with PennDOT Publication 408 and contract requirements.
- Project Safety Program in accordance with [PennDOT Publication 408](#), Section 107.08.
- Proposed Alternate TCP for the project or a letter stating you will follow the as-bid TCP.
- [Current PADEP Transferee/Co-Permittee Acknowledgement](#) form completed, signed for execution, where a general or individual NPDES Permit is attached to the contract.
- On projects that have an NPDES permit, contractor to submit a Preparedness, Prevention, and Contingency (PPC) Plan in accordance with [PennDOT Publication 408](#), Section 107.28, identifying a licensed professional (e.g., Professional Engineer, Geologist, Land Surveyor, or Landscape Architect) registered in Pennsylvania and if applicable, their designee to be present onsite and responsible for implementing critical stages of the approved Post Construction Stormwater Management (PCSM) Plan.
- If GPS or laser-controlled equipment is used, the contractor must submit a machine control grading QC Plan in accordance with [PennDOT Publication 408](#), Section 106.03 (b), at least 1 week prior to a pre-construction conference.

Pre-construction conference items are further detailed in [PennDOT Publication 2, Project Office Manual](#), Section A.3.1-1.

ACTIVITIES DURING CONSTRUCTION



PROJECT START-UP

UTILITY KICK-OFF MEETING

ACE/Ms should attend project utility kick-off meetings with IICs, contractors, and representatives from each Utility with facilities within a given project's limits. Contractors are responsible for scheduling these meetings, preparing agendas and sign-in sheets for each meeting, as well as distributing minutes to all attendees after each meeting. At utility kick-off meetings, discuss utility conflicts and relocations, seasonal restrictions, necessary permits, needed easement agreements, as well as project schedule, milestone dates, completion dates, and variations between current schedules and as-bid schedules. If a project includes railroad coordination, a separate pre-construction conference is typically required by railroad companies to discuss requirements for Right-of-Entry, railroad training, and work specific submissions. Before adjourning kick-off or pre-construction conferences, plan for future coordination and project control meetings.

ENVIRONMENTAL PERMIT NOTIFICATIONS

Many environmental permits require certain notifications prior to beginning work. Common required notices are listed below. Generally, permits are listed and attached to the PDC in ECMS and should be closely reviewed for notification requirements, as well as special conditions, required for the project.

NPDES PERMIT

If a NPDES Co-Permittee form was not submitted at a pre-construction conference, a form must be completed by both the Department and contractor. Completed Co-Permittee Applications must be submitted to the PADEP or authorized CCD for acknowledgement prior to beginning earth disturbance. Also, a PPC Plan is required when a NPDES permit is attached to a contract.

GENERAL WATER OBSTRUCTION PERMIT

A General Permit for the Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments (GP11) is typically issued by the PADEP for bridge replacements and projects adjacent to waterways. No work may begin until receiving acknowledgement of a Registration Form from DEP. An acknowledgement is attached to the PDC in ECMS.

GP11 permits also require notifying the PFBC's Regional Field Office Manager in the County where activities are proposed at least ten days prior to beginning construction. Written notification is suggested.

SPECIFIC WATER OBSTRUCTION PERMIT

PADEP project-specific water obstruction permits require receipt of an Acknowledgement of Appraisal of Permit Conditions submitted by a Department representative responsible for construction prior to beginning work. This acknowledgment form may be submitted at any time during the permit approval and attached to the PDC in ECMS.

Written notification of start of construction is required 15 days prior beginning work. Owing to the site-specific nature of the permit, this time frame may vary.

Notify the PFBC's Regional Field Office Manager as specified in the permit prior to the start of construction. Written notification is suggested.

PENNSYLVANIA STATE PROGRAMMATIC GENERAL PERMIT – 5 (PASPGP-5),

A federal water obstruction permit issued by the PADEP on behalf of the USACE requires Acknowledgment and Agreement for Compliance with the Terms & Conditions of [PASPGP-5](#) form to be signed by both the Department and contractor prior to the start of work. The acknowledgment form is attached to the permit and found on the PDC.

CONSERVATION DISTRICT MEETING

ACE/Ms should verify that project personnel, including contractors, have contacted the local CCD to provide notification that a project has begun. A listing of CCDs and their individual websites is available through the [Pennsylvania Conservation Districts' website](#). Each CCD is delegated by the PADEP to administer the Commonwealth's Erosion and Sedimentation Control program, and has the authority to enforce that program, including suspending construction activities if those regulations are not followed.

ACE/Ms should attend CCD Start-up meetings, typically conducted in the field, and coordinated by an IIC with contractors and local CCD representatives. IICs should prepare a sign-in sheet before each meeting, as well as minutes for distribution to all attendees after each meeting. Among the topics discussed, include:

- Maintenance of erosion protection Best Management Practices (BMPs).
- Approved E&S plan construction sequences.
- Proposed contractor waste areas and borrow areas, if applicable.
- PPC plan on file for NPDES permits.
- Completion of [PADEP Form 3800-FM-BCW0271d, "Chapter 102 Visual Site Inspection Report"](#) (VSIR) via the PennDOT VSIR application weekly and after each storm event.

ACE/Ms must ensure that IICs coordinate with Local CCD representatives throughout construction. Changes to an E&S Plan or PCSM Plan must be coordinated with, and approved by, the local CCD.

SCHEDULE CONFERENCE

ACE/Ms may require contractors to attend Schedule Conferences. Schedule Conferences may be held in conjunction with pre-construction conferences, or as stand-alone meetings, and should be held during the development stage of an initial baseline schedule. The purpose of a Schedule Conference is to discuss scheduling format and protocols for submission and responses, scheduling critical milestones or special provisions associated with the project, potential

schedule issues, as well as concepts that should be addressed in development of the baseline schedule. DEs may elect not to release current estimate payments until a schedule is submitted and accepted.

RAILROAD COORDINATION

MAKING SURE CONTRACTOR IS AWARE OF DUTIES

Contractors must be aware that they are responsible for obtaining necessary permits, real estate licenses, rights-of-entry, and railroads' protective public liability insurance prior to conducting construction activities adjacent to railroad facilities. Contractors must coordinate all construction activities that have the potential to impact adjacent railroad facilities with railroad representatives designated in project contract documents.

Prior to beginning construction activities adjacent to railroad facilities, contractors must submit a Site-Specific-Work-Plan (SSWP) to railroad representatives, along with engineering and shop drawings. Such drawings may include bridge demolition plans, bridge erection plans, catenary portal shop drawings, and catenary reprofiling material approvals.

SSWP requirements vary by railroad owner, but should include, at a minimum: equipment used for construction, locations of equipment in proximity to railroad facilities, shift time scheduled and levels of track protection necessary (catenary de-energization, track outage, watchmen, track foul time, etc.).

MAKING SURE TRAINING TOOK PLACE

Railroad safety training courses are necessary for anyone working within railroad ROW. Inspection field staff must coordinate the necessary courses with contractors. Follow-up with staff to be sure they have passed the required courses and have received their training badges before working within railroad ROW.

RIGHT OF ENTRY

Contractors are responsible for coordinating with railroad representatives for submission and approval of Right-of-Entry permits for any work within railroad ROW. Permitting processes vary depending upon railroads owners. Detailed information on the Right-of-Entry process for each project can be found within Railroad Special Provisions or attachments.

FIELD OFFICE SET-UP

ACE/Ms are to ensure contractors provide field offices for inspection staff in accordance with the provisions outlined in their contracts at time of bid. After NTP is given, IICs coordinate with contractors for field office setup in conformance with [PennDOT Publication 408](#), Section 609, as well as Section 688 for computer systems to be provided.

Project Field Office computers, monitors, multifunction printers, and VPN Routers are supplied by the Department. Request equipment by contacting either a District Construction Documentation System (CDS) Coordinator or District IT Coordinator, using [Form CS-101A, "Construction Field Site IT Equipment Request."](#) Power and Internet services must be installed prior to submitting the CS-101A form. IT will try to accommodate all requests within 5 business days of a Submitted Date.

Construction Field Office computer equipment is for exclusive use by the Department and Department representatives. Every Department employee and Department representative will use their assigned Department issued Commonwealth of Pennsylvania (CWOPA) User ID and Password to login to Department supplied computer equipment.

STAKEHOLDERS MEETING

For larger projects, or projects with significant impacts to the public, consider conducting project stakeholder meetings. Stakeholder meetings allow for efficient distribution of project information, upcoming impacts, and work progress. Stakeholder meetings may be held on a one-time basis, at significant points within the project, or may be scheduled to occur regularly.

The team presenting information may vary based upon topics covered and audiences addressed. ACE/Ms and IICs or their representatives are typically the primary presenters. Additional presenters vary based upon topics for discussion or audiences addressed. For example, if a meeting is to address a change in traffic patterns, a representative from the Traffic Unit could present and address technical questions.

Meeting attendees may also vary based upon the needs and purposes of a stakeholder meeting. Audiences may be limited to local legislative and municipal officials, or may include local businesses, homeowners, and the general public. If a meeting includes a broad audience, be prepared for a broad range of questions. Strive to keep such meetings focused on your agenda. Off-topic questions and concerns should be addressed, but after agenda items have been discussed, and preferably one-on-one with those posing off-topic questions.

Visual representations of topics or key points, such as information boards or digital slides, can be effective for conveying information, particularly technical information. Additionally, conduct discussion in non-technical language. Avoid acronyms and engineering terms. Refer to [PennDOT Publication 295, Project Level Public Involvement Handbook](#) for more information and tips for meeting with the public.

PARTNERING

Partnering is required for all projects except local, emergency, or maintenance projects. The level of partnering is determined by ACE/Ms during the PS&E stage when completing Form [CS-101, "Inspector's Field Office and Inspection Facilities PDC."](#) [Form CS-9, "Project Facilitation Type Score Sheet"](#) provides a matrix of factors useful when determining an appropriate level of partnering.

The three levels of partnering facilitation are Internal Facilitation, Semi-Formal Facilitation, and Formal Facilitation. If contractors do not agree with a partnering facilitation type selected, ACE/Ms and contractors' Project Managers can use the CS-9 form to adjust the level of partnering facilitation. The level of partnering should be determined before or at the pre-construction conference.

If required to hold a Kick-off Partnering Workshop, ACE/Ms and contractors' Project Managers shall meet prior to the workshop to select date and time, location, and a facilitator for the workshop. Also, create an agenda and list of attendees, develop presentations, and discuss objectives for partnering on the project. The Kick-off Partnering workshop shall be held within 30 days of the NTP, but not later than 10 days after work has started.

The Department agrees to reimburse 50% of invoice costs for facilitator workshops and session costs, monthly partnering evaluation survey service costs, and costs for partnering skills development, and trainer and training site costs.

Additional information, policy, and procedures can be found in [PennDOT Publication 2, Project Office Manual](#), Section B.3.3.

FUNDING COORDINATION

As projects are established, they are placed on the Transportation Improvement Plan (TIP). The TIP is a 12-year plan of proposed projects with the first four years of the plan being financially constrained. As projects move through preliminary and final design, project costs are continually refined. Just prior to letting, plans, specifications and estimated costs are finalized and compared to the funding available on the TIP. If available funding is greater than estimated costs, projects are advertised. If available funds are less than estimated costs, additional funding must be allocated prior to advertising. Planning and Programming Managers are responsible for acquiring the funds necessary to advertise. After letting, low bid costs are also compared to available funding on the TIP. If low bids are higher than available funding, additional funds must be allocated prior to awards.

CONTRIBUTION AGREEMENT

Contribution Agreements are typically intended for utility cost sharing or for ADA ramp projects. These agreements are reflected in the fund codes in ECMS. After a project is complete, a Finals Unit Supervisor/Manager generates a third party invoice, and then sends the documentation to the Fiscal Office for submittal for payment from the designated company, utility, or third party agency, consistent with its agreement.

UTILITY AGREEMENTS

The State Highway Law authorizes the Department to enter into agreements with utilities, by which the Department contributes toward the expense of relocating facilities to accommodate highway construction projects. Generally, the Department reimburses utilities' actual costs, less betterments, for adjusting existing facilities located *outside* of public ROW, or with real property interest in the lands they occupy. Utilities located within public ROW that require adjustments to accommodate highway projects are not eligible for reimbursement. There are exceptions, such as when utilities can show evidence that they have ROW or easements, or when facilities are owned by a Municipality or a Municipal Authority.

When utilities are eligible for reimbursement, utility agreements are added into projects as contribution agreements for the utility to contribute their share of the construction costs. Construction fund codes show contribution agreements that are sharing costs in construction work. After physical project work is complete, a Finals Unit Supervisor/Manager generates a third-party invoice in ECMS. Third-party invoice documentation is sent to a Fiscal Officer to generate the invoice from the ECMS documentation and contribution agreement.

Refer to [PennDOT Publication 16, Design Manual Part 5](#), Chapter 8, "Utility Relocation," and [PennDOT Publication 740](#), Chapter 6, "Utility and Railroad Coordination," for information, policy, and procedures regarding reimbursement agreements.

REIMBURSEMENT AGREEMENT

Third Party reimbursement agreements are utilized to pay local project sponsors or other parties for project construction costs. Third Party Reimbursements are generated in ECMS to reflect the federal and state amount paid/reimbursed to a local project sponsor or other party for each construction estimate. The amount shown on a project's home page is the value that has been reimbursed to the local project sponsor or owner.

Note that ECMS will not allow approval of a construction estimate, or generate third-party reimbursements, if insufficient state or federal funds are available. Funding information can be found on Project Consumption Pages.

Reimbursement agreements are also used for local or private sponsors reimbursing PennDOT.

See [PennDOT Publication 740](#), Chapter 3, Section 3.8 for details of reimbursement agreements. Appendix B, page 206 provides a definition of reimbursement agreements as used in construction projects.

ENVIRONMENTAL TRACKING

ENVIRONMENTAL DUE DILIGENCE

Prior to letting a construction contract, a Design Project Manager is responsible for conducting environmental due diligence for all potential excavated materials that may be used on a project during construction or disposed off-site. Determinations are documented on [Form D-1, "Environmental Due Diligence \(EDD\) Phase 1 Visual Inspection Form"](#) and, if questionable material is suspected, on [Form D-2, "Clean Fill Environmental Due Diligence \(EDD\) Phase 2."](#) Completed forms are placed on the PDC page, accessed through a project's home page. For material being moved off site, PADEP Form FP-001 is used during construction once the proposed excavated materials are determined to be clean fill in accordance with the PADEP Management of Fill Policy (#258-2182-773). DEP Form FP-001 is submitted electronically on the DEP website at: <https://www.dep.pa.gov/Business/Land/Waste/SolidWaste/Residual/Pages/default.aspx>

WASTE BORROW AGREEMENTS

Contractors are responsible for selecting waste and borrow sites for their projects. After sites are selected, they must be reviewed by both the local CCD and District Environmental Unit. If sites are approved, contractors must submit a permit application to the local CCD, which details E&S controls that will be employed for the approved site, including drawings and an E&S sequence.

ACE/Ms should ensure that IICs have obtained a signed [Form CS-4345, "Borrow and/or Waste Agreement"](#) for each borrow and waste source for the project. No work may begin at these borrow and waste locations until copies of a signed CS-4345 are received.

A PADEP Form FP-001 is completed after proposed excavated materials are determined to be clean fill in accordance with PADEP Management of Fill Policy (#258-2182-773). Sections 1 and 2 of the form are to be completed by the person making the determination of clean fill at site of origin; Section 3 must be completed by the person receiving or using the material as clean fill. Both parties are responsible for maintaining copies of this completed form on site for a period of five years for DEP inspection. DEP Form FP-001 may also be submitted electronically on the DEP website at: <https://www.dep.pa.gov/Business/Land/Waste/SolidWaste/Residual/Pages/default.aspx>

For sources of borrow excavation material entering PennDOT's ROW, contractors are responsible for conducting environmental due diligence and completing [Form D-1, "Environmental Due Diligence \(EDD\) Phase 1 Visual Inspection](#)

Form,” and if necessary, Form D-2, “Clean Fill Environmental Due Diligence (EDD) Phase 2” for each borrow source. Used asphalt and concrete pavement materials will only be accepted and incorporated as clean fill when coming from another transportation project accompanied by a completed Form D-1 signed by a Department representative.

Additional details, references to Forms D-1 and D-2, along with flowcharts that summarize the process, are found in PennDOT Publication 2, Project Office Manual, Section B.1.12.

ENVIRONMENTAL COMMITMENTS AND MITIGATION TRACKING SYSTEM (ECMTS) SHEETS

When project-specific permits, plans, construction items, special provisions, notices to contractor, environmental issues, or mitigation commitments made during the Design Phase are included in a contract, ACE/Ms or District Environmental Unit Representatives must make all parties aware of such contractual environmental commitments at a pre-construction conference.

Environmental commitments are defined and tracked using the ECMTS Mitigation System Tracking Matrix located on the PDC page in ECMS, or on the Construction Mitigation link in the Construct Section on a project’s home page.

Environmental commitments should be reviewed regularly and at each project control meeting. As commitments are satisfied, contractors and inspectors sign in and date the completion of those commitments.

During construction, IICs must notify the District Environmental Manager of any unanticipated involvement with environmental resources, hazards, or substantial changes in the project's scope of work before acting.

For additional information on the administration of ECMTS refer to PennDOT Publication 2, Project Office Manual, Section B.4.8.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Permits are required for projects with a disturbance of more than one acre. NPDES permits are attached to the PDC page in ECMS. Projects with NPDES permits must meet the following requirements and actions:

- Contractors should submit Co-Permittee Applications and Agreements at pre-construction conferences.
- ACE/Ms and/or District Environmental Unit Representatives should complete Co-Permittee Applications for NPDES permits and submit them by certified mail to the PADEP or authorized CCD for acknowledgement.
- Do not allow earth disturbance activities to begin until written acknowledgement is received for Transferee/Co-Permittee Applications.
- Schedule a meeting with the PADEP or local CCD to review a project’s E&S provisions and NPDES permit requirements prior to beginning construction activities. On large scale earthmoving projects, additional agencies may also be involved such as FHWA, USACE, PA Game Commission, PFBC, and the US Fish and Wildlife Commission, among others. Consult with your District environmental Unit to develop a complete list of involved agencies.
- Projects with NPDES permits require site inspections weekly, and within 24 hours after each measurable rainfall event. If not defined in an NPDES permit, the definition of a rainfall event is 0.25” of rain in a 24-hour period unless otherwise agreed to by the CCD. Inspections are performed by a TCI and a representative of a contractor.
- Visual site inspections must be performed from the commencement of earth work activities and continue throughout the duration of construction, and until the receipt and acknowledgment of a Notice of Termination (NOT) from the PADEP or authorized CCD.

- All inspections should be documented in the VSIR mobile app, whether weekly or within 24 hours after measurable rainfall events.
- All inspectors performing NPDES inspections on the VSIR app must complete the “CMP-CSI L8 Using the VSIR Mobile Application” training. “CMP-CSI L8 Using the VSIR Mobile Application” training is offered on the PennDOT Training Calendar under Independent Study.
- District self-inspections are the same as field inspections except they are performed by trained personnel other than those assigned to field inspections. At least one self-inspection is completed for each active construction project per construction season.
- Stormwater self-audits are performed by trained personnel other than those assigned to field or self-inspections. These inspections are typically carried out by the Central Office Construction Quality Assurance Section. At least one is completed for each active construction project per construction season.
- Each project field office will have a rain gauge supplied by the Department or contractor to monitor rainfall events. The locations of rain gauges should be discussed and agreed to by all parties.
- If a contractor submits an alternate plan for temporary or permanent erosion and water pollution control, the plan must be submitted to the PADEP or local CCD. Do not begin work until an alternate plan is approved by the PADEP or authorized CCD.
- Waste sites or staging areas that experience earth disturbance within ¼ mile of a project’s LOD will require a contractor to submit a minor amendment to the permit.

For additional information on the administration of NPDES permits refer to [PennDOT Publication 2, Project Office Manual](#), Section B.4.10.

POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM)

The NPDES permit program requires the use of BMPs to control stormwater runoff during construction. BMPs are specified and detailed in an E&S plan for construction, and in a PCSM plan for after construction. A PCSM plan provides construction plans and details for the construction of, as well as operating and long-term maintenance requirements for, the newly constructed stormwater facilities.

At a pre-construction conference, contractors should submit a PPC Plan and identify a licensed Professional Engineer (PE), Geologist, Land Surveyor or Landscape Architect registered in Pennsylvania. Contractors’ designated professionals should be present onsite, and responsible for implementing critical stages of their approved PCSM.

HAZARDOUS WASTE SIGNOFF

Hazardous wastes are substances that, in sufficient quantities and concentrations, pose a threat to human life, human health or the environment. Waste is characteristically "hazardous" if it is corrosive, ignitable, reactive, or toxic. If the presence of hazardous materials is revealed during design, a Waste Management Plan (WMP) must be developed that includes specifications, plans, and special provisions detailing remedial action.

If contaminated materials are unexpectedly encountered, the following applies:

- Cease, in a safe condition, all activities in the area of the contamination.
- Secure the area.
- IIC immediately contacts the District Environmental Manager.

The Department is considered the 'Generator' and is listed on manifests as such. If trained, IICs sign manifests on behalf of the District Executive (DE). Any employee signing a hazardous waste manifest is required to undergo training every three years in accordance with the Hazardous Materials Regulations 49 CFR 172.704 (c) (3). HAZMAT General Awareness Training for Construction Personnel is offered through the PennDOT Training Calendar in ECMS.

Original manifests and related documents must be retained for a minimum of 20 years, and should be filed in a centralized, orderly manner. Copies should be transmitted to the Strategic Environmental Management Program (SEMP) Section, Maintenance Technical Leadership Division.

For additional information on hazardous waste manifests, see [PennDOT Publication 2, Project Office Manual](#), Section B.4.15 and [PennDOT Publication 611, Volume 1, "Waste Management Guidance Manual for Project Delivery."](#)

PENNDOT DOCUMENTATION SYSTEMS

ENGINEERING AND CONSTRUCTION MANAGEMENT SYSTEM (ECMS)

For ACE/Ms, ECMS is likely to be used daily. Since ECMS is accessible from any computer with an Internet connection, ACE/Ms can process many available project functions from their field offices or other remote locations. Some of the tasks that can be accomplished using ECMS are outlined below.

SOURCES OF SUPPLY

Project materials sources of supply are available to ACE/Ms using a hyperlink in the 'Construct' column on the project information screen. Submission of these items is the responsibility of contractors and is reviewed by District Materials Engineers/Managers. Each construction material's source of supply is submitted under the corresponding construction item in the contract.

Generally, submitted source of supply requests for standard materials are checked against a list of preapproved manufacturers in [PennDOT Publication 35, "Qualified Products List for Construction" \(Bulletin 15\)](#). If a source is listed in Bulletin 15, ECMS will approve the source of supply request. If a material is not standard or has a project-specific specification, its source of supply request is routed to the District Materials Unit for disposition. A materials manager reviews such requests against contract specifications for approval. Nonstandard materials may also be routed to a project's designer for approval. If a source is for a standard material, and not listed in Bulletin 15, the material must be set aside, tested, and approved based upon test results prior to use.

When a prefabricated construction material that requires inspection is being incorporated, contractors must submit [Form CS-430, "Notification of Inspection"](#) with the source of supply in ECMS.

ESTIMATES

ACE/Ms may access a project's current estimate using the 'Work Queue' tab on the top banner of the ECMS home screen. After an IIC and contractor agree on a current estimate, it will be submitted in ECMS and a designated ACE/M will be next to review and approve. ACE/Ms should check their Work Queue daily for the status of estimates.

Current estimate payments are specified in [PennDOT Publication 408](#), Section 110.05, and reinforced in [PennDOT Publication 2, Project Office Manual](#), Section B.2. Estimates are processed semimonthly, or as otherwise specified, to control cash flow for the Department and for contractors. Private owners often withhold retainage, typically 10% of the payment due, to guard against default. PennDOT's contracts do not include retainage.

To assign responsibility for the funds transmitted from PennDOT to contractors, ECMS requires that all estimates for construction projects are generated, edited, or deleted only by IICs or Finals Unit Supervisors.

Upon submission by IICs or Finals Unit Supervisors, estimates are routed through District staff for review. The process is customizable and varies between Districts. Be sure to check with your supervisor to learn your District's review process. In some Districts, the DE will delegate the review and approval process to an ADE-C or an ACE/M in charge of a specific project. Whomever finally approves the estimate needs to have the signature authorization to allow for delegating authority to approve payments. Refer to Management Directive 205.4, Delegation of Authority to Sign, and Delegation to Authorize SAP Payments. If an estimate is disapproved during any section of the approval process, it is placed in 'Disapprove' status and returned to an IIC for correction and resubmission. After an estimate is approved in ECMS it is forwarded to SAP. If an estimate is rejected by SAP, check with the Fiscal Officer to determine the issue and for an estimated timeframe to resolve the issue.

On locally sponsored Federal-Aid to Municipality projects, Municipalities review estimates before ACE/Ms complete their reviews. A Local Sponsor without access to ECMS needs to supply a letter requesting reimbursement, which an ACE/M attaches to the estimate before approval. Only the letter requesting reimbursement is used if the indicator was defaulted to Municipality Involvement is 'No'. The majority of Local Sponsor projects will indicate Municipality Involvement as 'Yes'.

ACE/Ms can track submitted and approved estimates in ECMS by accessing the 'Estimates' screen after logging in to the system. To navigate to that screen, click on the 'Estimates' link in the 'Construction Projects' tab at the top of the ECMS main screen. Then search by a specific project or specific estimate.

CONTRACT WORK AUTHORIZATIONS

When a project is in construction status, only an IIC has the authority to create an 'Authorization for Contract Work'. Authorizations are created in ECMS by selecting the 'Contract Work Authorizations' link under the Construct section on the Project Information home page. [PennDOT Publication 2, Project Office Manual](#), Section B.3.1 indicates that, "If the Work is the result of "Field Changes directed by the Engineer" or the estimated cost exceeds \$50,000," then an ACE/M shall be consulted to approve the Authorization. IICs shall enter Workflow comments that an ACE/M was consulted and agrees with the authorization.

When a project is substantially complete and advances to post-construction status, both IICs and Finals Unit supervisors have the authority to create an Authorization for Contract Work. The creator of an Authorization is responsible for ensuring this is attached to the corresponding project work order for approval. When closing a project, all Authorizations must be linked to a work order or be dispositioned as 'Work Not Completed'.

To better manage project costs, ACE/Ms should participate in negotiations for contract work that is less than 75% or greater than 125% of plan quantity, extra work at a negotiated price, and extra work on a force account basis prior to the creation of an Authorization. Negotiations must also address any additional contract time to perform work that may potentially affect the duration of the contract. Conversely, if the Authorization is submitted to reflect a substantial decrease in contract quantities, a reduction of contract time may be negotiated.

PROJECT WORK ORDERS

ACE/Ms may access a project work order via the 'Work Queue' tab on the top banner of the ECMS home screen. In addition, a specific project work order can be searched under the 'Construction Projects' tab in ECMS and using the link 'Work Orders'. ACE/Ms should check their Work Queue daily for the status of work orders.

After an IIC or Finals Unit Supervisor successfully submits a work order, it is routed through District staff for review. The process is customizable and varies between Districts. Be sure to check with your supervisor to learn your District's review process. If a work order is disapproved at any time during the work order approval process, it is returned to an IIC or Finals Unit Supervisor for corrective action and eventual re-submission.

On Federal oversight projects, Major Work Orders as designated in [PennDOT Publication 2, Project Office Manual](#), are also reviewed by the BOPD and routed to the FHWA Regional Transportation Engineer for approval concurrence. The Regional Transportation Engineer can approve, approve without federal participation, or disapprove the work order.

On Federal oversight or PennDOT oversight on NHS projects, legal category work orders are reviewed by BOPD and transmitted to the FHWA for approval concurrence. Federal funds are not to be used to provide payment for dispute or claim settlements on Federal Oversight and PennDOT Oversight NHS projects until after FHWA has approved the associated legal category work order. Such work orders are to be processed initially as 100% State funded. Following submission of the work order to FHWA and receipt of FHWA approval concurrence, a follow up, legal category work order may be processed to change the funding source to Federal participation and the cost billed to FHWA at the appropriate pro rata share.

The following steps are to be taken by ACE/Ms during review and approval of project work orders.

Verify Correct Change Type

ACE/Ms should ensure that a work order change type is an appropriate category for it. ACE/Ms should coordinate with IICs to verify the correct change type based upon circumstances that produced a change on the project. Examples of change types are:

- Design omission
- Design error
- Unforeseen field conditions
- Field change directed by engineer
- Required change in scope of work
- Differing site conditions
- Balance overruns/underruns
- Fund change
- Finals unit audit
- DE specified change
- Changes based upon a VE proposal

See [PennDOT Publication 2, Project Office Manual](#), Section B.3.1-45 for a flowchart useful for determining correct work order types.

Verify Correct Funding

ACE/Ms must check fund codes charged for work order items to ensure appropriateness, and that funding is available and will not put fund code participation over budget.

Explanations

ACE/Ms must read explanations attached to work orders and verify that contract operations affected are identified, and circumstances that led to changes in condition are explained. Explanations must also specify proposed corrective actions.

Verify Authorizations Were on Time

PennDOT Publication 2, Project Office Manual requires that the need for contract time extensions be evaluated each time a contractor is authorized to perform additional or extra work. Additional contract time required, if any, is further

refined on the Work Order Explanation page. If authorizations are created late, a reason should be included in the work order explanation.

Relevant Attachments for Work Orders

Backup documentation, such as plans, special provisions, signed Forms FHWA-1365, "Record of Authorization to Proceed with Major Contract Revision," or construction details should be attached to the bottom of the Work Order Explanation page. Cost verification document backup information is attached at the bottom of the Work Order Item Cost Justification page for each new work order item. This backup information may include negotiated price force account estimates, force accounts, engineering analyses, historical data, or allied contracts.

Approve/Disapprove Work Order

After completing work order reviews, use the 'Workflow' tab function to complete the process, and either approve or disapprove a work order. If approved, the work order will be sent to the next reviewer. If disapproved, it will be sent to an IIC for corrective action and eventual re-submission.

The FHWA Transportation Engineer should be notified as soon as possible of any changes in scope and increases or decreases in contract amount. Prior to processing a major work order in ECMS for a Federal-Aid oversight project, certain changes should be brought to the attention of an FHWA Transportation Engineer. Such changes include:

- Major changes in scope.
- Increased costs greater than 500,000 dollars.
- Major reduction to a contract item quantity.

[Form FHWA-1365, "Record of Authorization to Proceed with Major Contract Revision"](#) should be completed, sent to, and approved by FHWA prior to directing a contractor to perform work. If the Transportation Engineer has an objection to a change, the FHWA may not agree to participate in added costs.

Work orders on FHWA oversight projects subjected to review and approval by the FHWA Transportation Engineer are not fully approved until the FHWA approves a work order. After a work order is approved, an item can be paid on an estimate, but the project should wait for FHWA's concurrence for federal funds. In lieu of disapproval, FHWA reviewers may request that additional information is attached to the work order to provide clarification. When that occurs, work orders are returned to an IIC to provide that clarification. In ECMS, that clarification can be provided in the comment window. ACE/Ms should ensure that their field staff is keeping them informed of any submissions or requests for clarification from the FHWA. ECMS will classify an FHWA disapproved work order as Approved W/O FHWA.

TIME EXTENSIONS

Time extension requests are submitted by prime contractors for response by ACE/Ms. Time extension requests from contractors go directly to ACE/Ms. Discussions with IICs may be necessary to determine granted timeframes. ACE/Ms receive email notifications when a time extension request is ready for their review in ECMS. Time extension requests can also be accessed from the project's main page or from the Work Queue Tab on the top banner.

When reviewing time extensions, all comment fields should be complete and accurate. A supporting schedule, commensurate with the bid schedule item, should be attached.

Granted extensions must be accompanied by two affirmations from an ACE/M, verification that the time extension was timely submitted, and with all necessary backup attachments. Time extensions may be approved as submitted, approved with revised number of days, returned for clarification, or disapproved.

Time extensions designated as Milestone Adjustments will not change the end date of the project and will not be tracked by ECMS. The approval of Milestone Adjustment time extensions provides documentation for subsequent liquidated damages calculations. If a time extension affects a milestone and the contract end date, a contractor must submit two time extension requests.

After ACE/Ms complete their approval, the ADE-C is notified that a time extension is available for review, followed by a review by the DE. The DE may delegate their review and approval process to the ADE-C. If a project has federal oversight, additional approvals are required by the BOPD and the FHWA's Transportation Engineer.

SETTING UP NEW FUND CODES

Creating a new Fund Code is sometimes necessary. To set up a new Fund Code use the 'Fund Code' link in the Setup Section of the ECMS main page. On the Funds Code page click 'New' on the tool bar at the top of the page. Fields with flags require that information be entered manually. Fields with hourglasses have drop down boxes containing suggested inputs, and these are typically the best answers. However, if unsure, check coding from previously set up fund codes. Additional coordination with Programming and Planning may be required for items such as the establishment of a new WBS prior to establishing a new fund code.

MODIFY WORK QUEUE

To setup a personalized Work Queue, click on the 'Advanced Search' link on My Work Queue Portal. On the My Work Queue search page, choose items that you DO NOT want to search. At the bottom of the page, name and save the search. To use this search in the future, use the drop-down box in the Custom Searches Section and click 'Execute'.

CONSULTANT SERVICE INVOICES

Invoices for consultant services are submitted through ECMS and are listed in the Invoices – Project Manager Review section of the 'Work Queue' tab on the ECMS home screen. Select an invoice from the work queue for the summary page, then click on the invoice number to review the invoice details. To review weekly Labor Hour Logs, click on the total hours for each employee. Labor Hour Logs provide details of the hours worked, commute, and on the job mileage and are reviewed and approved by IICs.

Additional and detailed information on the functions listed above are referenced in the ECMS Training Manual.

PENNDOT PROJECT COLLABORATION CENTER (PPCC)

PPCC is accessible to ACE/Ms through the ECMS home screen using the 'References' tab, then 'External Links,' then 'Project Collaboration Center.' After accessing this page, ACE/Ms will be prompted to log-in using their PennDOT CWOPA account information. ACE/Ms should use PPCC daily, or as needed, because it presents a broad range of project coordination and correspondence features useful to ACE/Ms and the project team. Preferences may be set in PPCC so that emails are sent to ACE/Ms when actions need to be taken or in order to be apprised of various submissions.

RESPONSIBILITIES IN PPCC

ACE/Ms, along with Project Managers and IICs, are assigned Project Administrator roles for their projects. With those roles they will have an Administration Tab, which may be used to add personnel, and modify submittal work flows. Also, preferences will be available for each project for refining email notifications. ACE/Ms can also check the Work Queue Tab on the PPCC portal or project portals for updates of such items as RFI, Submittals, or other project-specific correspondence.

After receiving an email that an item is ready for review, ACE/Ms can access the item by logging into PPCC and clicking on the 'My Work Queue' tab located on the PPCC home screen. Work queue pages are organized by several tabs including Submittal, RFI, Other Correspondence, Source of Supply, PennDOT, Prime, Requested Comments. Next to these tabs is a number that indicates the number of items in the queue for each corresponding tab. Items are organized by project ECMS number, submittal type, title, ID number, and due date.

ACE/Ms access items by clicking on the paper icon next to the submittal. ACE/Ms then review submittals, along with attached documents, to determine action needed. Action to be taken is indicated in the drop-down list, and may be classified as Accepted, Accepted as Noted, Revise & Resubmit, or Rejected. However, if a submittal requires further coordination with another member of the project team (for example, an IIC or Consultant Project Designer), ACE/Ms may choose the option in the submittal to 'Request Comment' or 'Delegate Step'. These functions can be accessed on the specific submittal item screen and when accessed, will open another screen to search for the individual by either searching the person's name or their user role in the search bar. After a submittal is 'delegated' or 'requested comment' to another user, ACE/Ms receive an email notification of responses for further action to approve or disapprove the submittal based on received comments.

FILING SYSTEM

ACE/Ms may access the PPCC electronic filing system through the PPCC home screen under the 'My Projects' tab, and then locating a specific project by its ECMS number within the 'Project Files' tab on the top banner. This site is home to the project file cabinet used for relevant project documentation, such as:

- Accident reports
- Administration documents
- Asphalt
- Concrete
- EEOs/Trainees/DBE
- Labor compliance
- Material certifications
- Meetings
- Project schedule
- Utilities
- Work orders

FUNCTIONS AND REFERENCES

ACE/Ms may use PPCC for District-wide news, bulletins, user guides, and a variety of other references located on the PPCC Portal home screen. The right side of the screen lists hyperlinks for ACE/Ms to access the PennDOT Data Integration Facility (PDIF), ASTA Web Portal, PennDOT Training Calendar, Standards and Publications, and the Mobile Construction App Web Portals.

ACE/Ms may also access the 'References' tab on the PPCC Portal home screen to locate additional PPCC resource documents and the PPCC training manual as well as access a designated file for each PennDOT District that includes a variety of information and references for your use.

ELECTRONIC CONSTRUCTION AND MATERIALS MANAGEMENT SYSTEM (eCAMMS)

ACE/Ms may access the electronic Construction and Materials Management System (eCAMMS) through the ECMS home screen under the 'Resources' tab in the top banner, and then accessing the 'PennDOT Systems' prompt and following to the 'eCAMMS' link. This system can also be accessed by the following url: <https://www.ecamms.pa.gov/>

eCAMMS is beneficial to ACE/Ms for tracking material samples collected from construction projects, along with material sample test results and disposition. Samples are collected by field staff, documented properly using [Form TR-447, "Sample Identification Form,"](#) and then sent to the Laboratory Testing Section of the District for testing and documentation in eCAMMS. Form TR-447 is a carbon copy paper form supplied by PennDOT. ACE/Ms may use eCAMMS to obtain required signatures on [Form TR-4238A, "District's Letter of Project Materials Certification"](#) upon acceptance of construction materials incorporated into the project, along with any disposition that was necessary.

ACE/Ms can reference [PennDOT Publication 2, Project Office Manual](#), Section B.8, for more information about the features of eCAMMS and the material testing management system.

SAFETY

ACE/Ms should ensure that safety topics discussed at pre-construction conferences are implemented throughout construction and discussed at every project control meeting. ACE/Ms should coordinate with IICs to verify that contractors submit their written safety programs in PPCC for review and approval by the District Project Safety Officer (DPSO). Submitting safety programs must be done prior to construction and in accordance with [PennDOT Publication 408](#), Section 107.08. ACE/Ms should ensure that IICs and project inspection teams review approved contractor safety programs and that general safety inspections are conducted, as well as documenting contractors' weekly safety meetings.

Refer to [PennDOT Publication 445](#), "Safety Policy Manual," for all safety responsibilities, rules, and procedures.

PROJECT CONTROL MEETINGS

INVITATIONS AND AGENDA

Project control meetings should be scheduled to occur regularly. The frequency may vary based upon need, but meetings are generally recommended on a bi-weekly or monthly basis depending upon project size, complexity, or pace of progress. Administration of meetings may be delegated to a consultant manager or an IIC as applicable.

Prior to project control meetings, distribute an agenda to invitees. Invitees may include the following:

- Contractors' representatives responsible for making decisions
- Subcontractor or supplier representatives when required
- ACE/M or IIC
- Responsible PennDOT District personnel
- Consultant staff (when applicable)
- Utility Representatives
- FHWA Transportation Engineer
- Representatives from a project's Design Team
- Pennsylvania State Police, when applicable

- Other Specific Project Stakeholders

Invite special attendees, such as designers, Traffic Unit representatives, or Pennsylvania State Police representatives on an as-needed basis to address issues within their areas of expertise. These issues may be discussed early in the agenda, allowing special attendees to leave the meetings after their contributions.

DISCUSSION TOPICS

Meeting format is typically established at the first project control meeting and follows a similar format for subsequent meetings. Circulate a sign-in sheet near the beginning of meetings to serve as the record of attendance. Introductions of new participants or special invitees can also be made when beginning meetings. Keep minutes and distribute copies to all attendees prior to subsequent project control meetings.

Given the importance of safety to the work of the Department, introducing a pertinent safety issue before the business portion of a meeting is a good way to disseminate safety information and keep participants mindful of safety issues. Following that, the business portion of project control meetings should begin with a discussion of standing topics followed by unique issues organized as 'Old Business' followed by a discussion of 'New Business'. Old Business includes all items previously discussed. Old Business items should remain on meeting minutes until resolved or closed. The status of business items should be included in meeting minutes, even if that status has not changed since the last meeting. A numbering system is typically used to track the progress of business items across meetings. Project control meetings should consider the acceptance of minutes from the previous meeting or offer opportunity to revise before acceptance.

Following are descriptions of discussion topics to include in project control meetings.

CONTRACT STATUS

Review project status, including current contract values and completion dates, as well as current percent values and time spent to date.

PROJECT SCHEDULE

Review project schedules, including current projected completion dates, and comparing them to contract completion dates. For projects requiring CPM schedules, review updated submission status or comments, as well as proposed changes to schedule logic. Discussion should also include impacts, or potential impacts, to project schedules. Contractors should also discuss their proposed 'look ahead' schedules, generally two week to six week intervals. At every project control meeting ask Contractors if they are on track to meet contract milestones and completion dates. If the contractor responds with the project is on schedule, then their response should be documented in the minutes. If the contractor indicates that a project is not on schedule, then a discussion of why and what can be done to recover should ensue and should be documented in the minutes.

ESTIMATES AND WORK ORDERS

If project work orders are being tracked in a work order log, copies of that log should be distributed at the meeting.

SUBMITTAL LOGS

Project control meetings are a good time to update the status of contractor submittals and RFIs, specifically outstanding submittals. Use a chart or spreadsheet to record and monitor the progress of submittal reviews or use the project

report functionalities in PPCC. Track submittal numbers, submittal titles and descriptions, submitted dates, and due dates. Also, include tracking days. Monitoring submittals, with particular attention to turn-around-times, is important for keeping project progress on track.

ENVIRONMENTAL TRACKING

Environmental Commitments are defined and tracked using the ECMTS Mitigation System Tracking Matrix found on the ECMS Construction Mitigation link or on the 'PDC' page in ECMS. As commitments are satisfied, contractors and inspectors should sign in and date the completion of those commitments.

MPT CHECKS

Daily MPT checks are to be completed by field staff using the MCMPT App on inspectors' iPads. Field staff input all traffic control devices denoted on approved TCPs into the 'Work Zone Checklist' for daily reporting on the App. Check traffic patterns morning and afternoon, note any deficiencies, and inform contractors for resolution. Sign off and upload resolutions to the server daily.

DBE DISCUSSION

Ensure contractors are meeting the requirements of the Minority Participation and Commitment Worksheet. ACE/Ms and IICs monitor the level of commitment and status of DBE goals throughout construction.

Minority information is available on the Project information screen in ECMS. As minority subcontractor work is completed throughout a project, minority payments to DBE subcontractors are submitted by contractors for IIC review and approval.

DIVERSITY DISCUSSION

If there is a change of scope for a project involving a contractor's minority subcontractor, good faith efforts (GFE) must be made to maintain DBE participation. If a minority goal is not met at project completion, contractors must submit a DBE shortfall letter to the Department at project closeout.

MATERIAL CERTIFICATION VERIFICATION

IICs are responsible for working with contractors to ensure a [Form CS-4171, "Certificate of Compliance"](#) is received for all construction materials incorporated into the project. Payments will not be made for construction items without receipt of material certification. Certifications are currently logged in PPCC. In the future, material certifications will be submitted by the contractor in ECMS. ECMS will track material certifications verses contract quantities in the Certification Book found on the Material Certification List. For additional information, the 'Material Certifications Quick Guide, Inspector Version' can be found in 'File Cabinet' under the 'Reference' tab.

TRAINEE PROGRAM

Submit [Form EO-364, "PennDOT On-the-Job Training Program Enrollment Form"](#) in PPCC for review and approval prior to a requested trainee beginning work.

Submit [Form EO-365, "Highway Contractor's Monthly Training Report"](#) monthly in PPCC for review and approval. This form documents hours worked each month for designated trainees. After approval in PPCC, IICs make payment for the number of trainee hours worked under the designated trainee contract item #1999-9999.

NEW BUSINESS

Discussing 'New Business' is the final order of business of project control meetings. This is the component of project control meetings that produces 'Action Items', which include summary descriptions of items, parties responsible for action, and due dates for resolutions. Meetings should conclude with agreement on the next meeting date.

Meeting minutes are assembled, summarized, typed, and sent to attendees after the meeting. Minutes are typically sent within a week after a meeting, although project scopes-of-work may specify the timeframe within which minutes are to be transmitted. Grant attendees a reasonable amount of time to return comments or request changes to the meeting minutes.

Smaller projects typically do not have formalized agendas for project control meetings, but minutes should be kept, and copies made available to attendees. Discussions for smaller projects should at least include schedule progress, correspondence, and action items.

SPECIALIZED MEETINGS

A specialized meeting to review schedules, submittals, procedures, quality control, or operational status of specific operations may be necessary for certain operations requiring advance coordination. On smaller projects, these discussions can occur during regular project control meetings, but for larger projects a stand-alone meeting may be required. Specialized meetings may include the following:

- Partnering Meeting
- Utility Coordination Meeting
- Pre-Demolition Meeting
- Pre-Deck Placement Meeting
- Beam Erection Meeting
- Pre-Paving Meeting
- Pre-Blast Meeting

SCHEDULING

Construction project scheduling is specified by [PennDOT Publication 408](#), Section 108.03 (b), and Section 689. There are two schedule formats that may be specified for a project: Narrative Schedule or CPM Schedule. The CPM Schedule format may further specify resource loading and/or update submissions. Refer to the payment Items to determine which schedule format is specified. Schedule payment Items include:

- Narrative Schedule, Item 0689-0001
- Critical Path Method (CPM) Schedule, Item 0689-0003
- CPM Schedule, Resource Loaded, Item 0689-004
- CPM Schedule, with Updates, Item 0689-0005

As of the 2020 edition of PennDOT Publication 408, the Network Schedule format (Item 0689-0002) is no longer in use.

ASTA PORTAL

Contractors are responsible for uploading and submitting a baseline schedule through PPCC for a PennDOT Project Team's review. CPM schedules must be submitted in ASTA Powerproject electronic format. ACE/Ms may Accept, Accept as Noted, Revise and Resubmit, or outright Reject submitted schedules.

Any subsequent changes to baseline schedules will also be uploaded to the project within PPCC in the same way as initial submissions in order to maintain a record of schedule versions.

Uploading accepted schedules to the ASTA portal is the Department's responsibility. ACE/Ms should download accepted schedules from PPCC and upload files to ASTA in PDF and (.pp) electronic format or verify that this task has been done.

REVIEW AND ACCEPTANCE OF BASELINE SCHEDULE

A Narrative baseline schedule is required within 15 days of the actual NTP date, and review and response to a baseline submission is required within 14 days of the baseline submission.

A CPM baseline schedule is required within 30 days of actual NTP, and review and response are required within 14 days of that submission. In addition to the CPM baseline schedule, contractors are required to submit a '60 Calendar Day Work Plan' at the pre-construction conference and a 'Bid Preparation Schedule' within 30 days of contract execution. The 60 Calendar Day Work Plan is to be maintained until a baseline schedule is approved. A contractor may submit a full CPM baseline schedule within 30 days of contract execution instead of the 60 Day Work Plan and Bid Preparation Schedule.

If a baseline schedule is not submitted within required timeframes, ACE/Ms may withhold estimate payments and require that a contractor attend a schedule workshop to complete the baseline submission.

If a baseline schedule is not accepted, resubmission is required with 10 days of notice of non-acceptance.

If actual NTP occurs after anticipated NTP, contractors may submit a schedule based upon Actual NTP within 15 days of acceptance of the baseline schedule.

Acceptance of baseline schedules should be based upon compliance with submission requirements and specifications detailed in [PennDOT Publication 408](#), Section 108.03(b), and Section 689. ACE/Ms may delegate such reviews to consultant construction managers when applicable.

Specification requirements for acceptance of baseline schedules are not meant to require or indicate approval or concurrence with all durations, logic ties, and sequences included in the schedule, as these are dependent upon contractors' selected resources, and means and methods, to complete work. ACE/Ms should take care to avoid directives related to schedules that could be construed to dictate or direct means and methods. For example, if you suggest shortening the duration of an activity, a contractor could claim that you directed them to accelerate their work. If you suggest a different sequence in work, a contractor could claim that you directed extra mobilizations. [PennDOT Publication 408](#), Section 108.03(b) states, "Acceptance of the contractor's schedule or any revision(s) thereto, by the Department, will not constitute the Department's approval of or agreement with the sequence of operations, the durations of activities, the adequacy or propriety of resources, the identity of controlling operations, nor the feasibility or any other characteristics of the schedule or its revisions."

In some cases, comments or directives related to sequence may be appropriate or necessary when reviewing a baseline schedule, such as directives related activities that fall outside the contractually required sequence. Project-specific

knowledge is necessary to understand the scope and contractually specified sequences, such as Erosion and Sedimentation Control, or Traffic Control, as they relate to schedule acceptance. Experience with analyzing and monitoring schedules will help you identify activities that may be difficult to monitor.

Baseline schedules should be based upon anticipated NTP dates, and generally, should extend to contract required completion dates unless time reductions in accordance with [PennDOT Publication 408](#), Section 108.03(b) 4, have been previously submitted and approved.

Consider the following when determining acceptance of schedules:

- Check that a schedule meets the contract required completion date and any contract specified milestone dates.
- If a schedule shows contract work finishing before the required completion date, verify that the required completion date is included in the schedule unless a formal time reduction has been approved. Unless a formal time reduction is approved, any time between the schedule finish date and the required completion date should be considered available project float and clarified as such.
- Even if MPT shifts are not specified milestone dates, activities representing these shifts are effective for identifying the start and finish of specified stages and identifying these as milestones in project schedules.
- Check that schedules reflect all contractually specified sequences in E&S Plans and TCPs. Consider requesting that contractors include activities that clearly represent sequential steps in E&S plans at the pre-construction conference. In so doing, schedules will provide an added benefit of monitoring whether contractors are following their E&S Plans, or if revising a plan is necessary.
- Verify that all activities include at least one predecessor and successor activity. Only the initial schedule activity, typically NTP, should be without a predecessor and only the final activity, typically required completion date, should be without a successor. A summary tabulation is helpful as a checklist for verifying that all contract work is represented by one or more activities in a schedule.
- Check that no work is scheduled during time periods that are prohibited by the specifications. Most electronic schedules will identify operation-specific seasonal non-work periods by assigning seasonal activities to a designated project calendar. For example, [PennDOT Publication 408](#), Section 413.3(b) outlines weather and seasonal limitations for placement of asphalt mixtures. Many schedules include calendars to represent separate allowances or restrictions for asphalt, concrete, environmental permitting, stream restrictions, tree cutting, seasonal planting, curing, painting, and signal/ITS testing.
- Verify that all coordinated or incorporated work and coordination with third-parties is included in schedules. During pre-construction conferences, request that contractors include an activity for each utility item in [Form D-419, "Utility Clearance Checklist."](#) Where applicable, contractors may opt to include restrictions resulting from third-parties such as railroads or the PA Turnpike Commission in project calendars.
- While including a schedule activity for every submittal required for the project may not be practical, schedules should include activities for review and approval of major or high priority project submittals. For example, high priority submittals may include fabrication items that require long lead times, such as signal poles or bridge beams, submittals requiring thirty party review, and submittals for specialty prefabricated items or major structural items. Submittal review activity durations should be 21 days in accordance with [PennDOT Publication 408](#), Section 108.03(b) 3, unless otherwise specified in the contract special provisions.
- Verify that schedules meet the technical requirements as detailed in [PennDOT Publication 408](#), Section 689. Narrative schedules should clearly identify activity descriptions, durations, in working days, and start and finish calendar dates of activities. CPM schedules should clearly identify activity ID, description, duration in working days, early/late start, early/late finish, total float, predecessor, successor, logic ties, calendar, and resource allocation, where required, for each activity.

- Scheduled activities must include submittals, reviews, responses to reviews, and contract milestones such as stream restrictions, tree cutting restrictions. The most foundational activities include:
 - Project award
 - NTP (anticipated or actual)
 - Physical work start
 - Implement detour
 - Remove detour
 - Open to traffic
 - Physical work complete
 - Project completion

CPM schedules should also clearly identify activities that fall on a project's critical path. PennDOT Publication 408, 2020 further requires that CPM schedules follow certain criteria such as use of finish-to-start relationships only, identification of lead/lag as a separate task activity, use of 'start on' and 'finish on' constraints on NTP and project completion activities only, breakdown detail of work in durations of 5 to 15 workdays per activity, and limited use of redundant relationships. These requirements are consistent with commonly accepted schedule best practices. Scheduling software tools and filters can often help identify activities that are inconsistent with these commonly accepted best practices.

SCHEDULE MONITORING AND UPDATES

OBTAINING PROGRESS STATUS

[PennDOT Publication 408](#), Section 108.03(b) 2, dictates that, "During project control meetings, the Representative and contractor's superintendent will conduct a site visit and jointly review the project progress. Contractors should submit a written progress status report 2 days in advance of the project control meeting."

While a joint walk-through review including PennDOT and the contractor at the project is not always practical, PennDOT and the contractor communicating about progress, and concurring on the progress reported, is important.

One way to accomplish mutual reporting and concurrence is through the use of a turnaround document. Some software programs include a Turnaround Document Report. Typically, a contractor will print a turnaround document at the start of a report period, which is typically two weeks. During a report period, a contractor will hand-write proposed status changes. At the end of a report period (the data date), a contractor provides hand-written status, including actual starts, actual finishes, percent completes, and remaining durations that they propose to enter into the schedule. The Department, in turn, reviews the proposed status and provides their observations. This method is efficient and effective.

If a contractor prefers to enter proposed status directly in the software program, they can provide a preliminary schedule for the Department's review. The Department then provides their observations to the contractor, who addresses the Department's observations, and if necessary, resubmits. If the Department has no significant observations on a preliminary schedule, that schedule is used as submitted. Proposed progress may also be discussed verbally, where practical.

If the Department and a contractor do not agree on the status of an activity, use the contractor's status in the schedule and document the Department's disagreement. Ultimately, schedules are owned by contractors, not the Department.

Progress control meetings and schedule review comments are appropriate means for discussing and documenting schedule progress, potential schedule issues, and disagreements or discrepancies over status reporting.

REVISIONS AND PROGRESS STATUS

If the order of operations has changed to the extent that an accepted schedule is no longer accurate or reflective of the manner in which work is progressing, schedule revisions may be necessary. Significant logic or schedule revisions due to scope of work changes or unforeseen circumstances should be discussed in advance of incorporating those revisions into a project schedule.

To evaluate the effect of logic revisions and progress status, significant logic revisions should be provided separately from progress status updates. Activities added to represent extra work should always be added separately from progress status updates. Minor logic revisions to activities that are well off near critical paths are routine, and with discretion, may be included with progress status updates.

Activity IDs and descriptions should remain consistent in progress updates. Changes to activity descriptions should not be used as a method of incorporating schedule revisions. Schedule revisions, when necessary, should be accompanied by a narrative to explain the reason and logic of each activity revision.

REVIEWING PROGRESS STATUS

The schedule and frequency for schedule update submissions, when required, should be discussed, and established at the beginning of a project. The frequency of updates is typically a month, or in accordance with the schedule for Project Control Meetings. [PennDOT Publication 408](#), Section 108.03(b) 6 states that estimate payments may be withheld if an update is not received within seven days of the date agreed upon.

At a minimum, review a schedule's critical path. Compare critical path in an updated schedule with that in the immediate previous schedule and determine if activities on the critical path changed. If critical path activities remained the same, determine if activities progressed consistently with expected progress, better than expected progress, or behind expected progress. If activities on the critical path changed, determine if changes resulted from a lack of progress or a schedule revision such as a logic change, original durations change, or added/deleted activities.

Reviewing near-critical paths is also prudent. Many software scheduling programs have tools for identifying secondary-critical or near-critical paths. Alternatively, near-critical paths may be found by reducing the durations of activities at the end of the critical (longest) path until the path changes. A thorough review of a schedule includes all activities that are behind schedule to determine why they are behind.

Review the schedule for accuracy. It should accurately reflect the work performed to date, and accurately forecast future work. If a schedule is not accurate, the information it provides is distorted. Accurate information is necessary for evaluating progress and identifying and mitigating problems. The earlier a potential problem is identified, the more opportunity there is to mitigate it.

OUT-OF-SEQUENCE PROGRESS

Out-of-sequence progress occurs if an activity starts before it is scheduled to occur. Out-of-sequence progress may result from several factors such as inaccurate sequence ties or a change to the originally intended sequence to complete the work. Out-of-sequence work is a concern when progress conflicts with one or more contractually required work sequences. However, out-of-sequence work may simply be the result of a contractor's resource leveling effort, such as redistributing equipment or crews to maximum efficiency or effectiveness based upon resource availability.

When using scheduling software, there are two options for calculating schedules with out-of-sequence activities:

1. If the 'retained logic' option is used to calculate the schedule, and an activity starts prior to the finish of its predecessor, the software program does not schedule the remaining duration to continue until all its predecessors (including the activities that precede the immediate predecessors) are finished. Consequently, the finish of an activity will be forecasted to occur later than indicated by its remaining duration, and its total float will be reduced. In the same way, an activity will not be scheduled to start until all its predecessors are finished. Consequently, the start of an activity might be inaccurately postponed, and its total float will be reduced.
2. If the 'progress override' option is used to calculate the schedule and an activity starts prior to the finish of its predecessor, the software program allows the remaining duration of the activity to continue from the data date.

Retained logic is typically the more appropriate option to use when evaluating out of sequence progress.

RECOVERY SCHEDULES

[PennDOT Publication 408](#), Section 108.03(b)5, indicates that if required, a written recovery plan must be submitted within seven calendar days of notification by the Representative. If the recovery plan, or recovery schedule if needed, is not received within 14 calendar days from the date of the request by the Representative, the District Executive may withhold current estimate payments until the required information has been submitted and accepted. A recovery plan does not always require revision to a schedule.

If progress of work has changed to the extent that an accepted schedule is no longer an accurate representation of the work, requesting a recovery schedule may be appropriate. A narrative describing what has changed and an explanation of why it has changed should be included with the recovery schedule. Contractors should submit a requested recovery plan so that it may be uploaded to the PPCC for the Department's review within 14 days of request.

TIME EXTENSION EVALUATIONS

The Department may grant time extensions or reductions for events and occurrences that are defined in [PennDOT Publication 408](#), Section 108.06. Contractors must submit requests both in ECMS and through PPCC.

TIME EXTENSION REQUESTS

[PennDOT Publication 408](#), Section 108.06(a) defines conditions that may entitle contractors to receive a time extension. These conditions include:

- Late NTP
- Utility impacts
- Added or eliminated work
- Strikes or labor disputes
- Impacts due to delayed action or omission by the Department
- Impacts due to action or failure to act of an agency other than the Department
- Emergency declarations

Non-eligible conditions for a time extension include weather delays, rework due to defective work, and reseeding of areas that fail to meet grown coverage or germination requirements.

If conditions eligible for a time extension request occur, a request must be submitted within 30 days of a specified event, as detailed in [PennDOT Publication 408](#), Section 108.06(a). Responses to time extension requests are required within 14 days of extension submission. Requests that are incomplete or provide inadequate information to complete an evaluation should be returned as a 'revise and resubmit'. Resubmission is required within 10 days of a revise and resubmit response.

Contractors are required to indicate if the time extension request is related to additional time or additional time and money at the time of submission.

TIME EXTENSION EVALUATION

Consider these two conditions in evaluation of time extension requests:

1. Was the request submitted timely and based upon an eligible condition as specified in PennDOT Publication 408, Section 108.6(a)?
2. Does the time extension request include schedule verification to show the condition impacted one or more controlling operations, and resulted in a revised finish date beyond the contractually specified milestone or completion date?

CONTROLLING OPERATIONS AND LONGEST PATH

A controlling operation is an activity that is on the longest path through a schedule. Such activities are also referred to as critical activities or longest path activities. If any activity is delayed, but the activity delay does not result in an extension of time beyond the required contract completion date, a time extension is not warranted.

Time extension requests for contractually binding interim milestones should be considered and evaluated in a similar manner. [PennDOT Publication 408](#), Section 108.03, specifies that only contractually specified milestone dates are binding. Contractor-imposed dates are neither binding nor eligible for time extension consideration.

One distinction between critical activities and longest path activities is important to note. A critical activity may be defined either as an activity on the longest path, or an activity with less than zero float. Schedules for large projects often have multiple float paths. When a schedule has multiple float paths, there may be several paths with negative float, but typically only one is the longest path. Many software programs allow users to select whether to define critical activities as those with negative float or those on the longest path, but time extension should only be considered for impacts affecting critical activities defined as activities on the longest path.

FLOAT

If progress of a non-controlling operation has been adversely affected, it will simply consume float. [PennDOT Publication 408](#), Section 689.1 defines float as a shared commodity. Whatever activity consumes float first receives the benefit of the float, regardless of what other issues may occur after the float is consumed. For example, if a structural submittal review takes longer than 21 days, but the review activity has float, it is entitled to consume that float without repercussion. If the structural component that was the subject of the submittal then incurs a delay during fabrication, the contractor is entitled to consume any remaining float. If there is no remaining float, then the contractor is responsible for recovering the delay.

EVALUATING IMPACT AND DELAY

In accordance with [PennDOT Publication 408](#), Section 108.06, time extensions should be submitted and evaluated simultaneously with the time of impact based upon the current accepted schedule. Nonetheless, a prevalent opinion is to determine time extensions at the end of a project to see whether the contractor needs the time or not. In effect, doing so provides a variable contract completion date and potential for a dispute. Experience demonstrates that less specific contract terms increase problems and disputes.

There are several advantages to evaluating impacts at the time of impact occurrence. Advantages include ability to review and assess mitigation strategies and clarity in establishment of the project longest path at the time of impact, resulting in greater ability to reduce the overall cost.

Discussing schedule progress, issues, and potential issues at each project control meeting provides an opportunity to consider potential mitigation strategies. Mitigating a delay by re-sequencing work may be possible. Re-sequencing may not impose additional cost for PennDOT or contractors, or additional costs may be limited to an extra mobilization or a re-mobilization. Alternatively, a contractor may be able to work extended or additional shifts to accelerate a schedule, in which case the Department should only be responsible for premium time. If multiple options are available, PennDOT can evaluate options to determine the best course of action.

To evaluate potential delays due to a change in scope, additional work, or extra work, PennDOT and contractors should discuss schedule revisions necessary to reflect the work. Schedule revisions should then be incorporated in accordance with [PennDOT Publication 408](#), Section 689. Typically, this involves inserting an activity, or small network of activities, into the CPM schedule. A small network of activities is often referred to as a 'fragnet.' Define the scope of the delay activity and the logic ties used by the contractor to tie to the delay into the schedule, by identifying the predecessors to the new activities and demonstrating the impacts to successor activities.

After all parties are satisfied with the scope of the delay activities and the logic ties that incorporate these activities into a schedule, analyze the CPM schedule before and after the delay to quantify the effect on Contract Completion Date. This effect represents the time extension.

Time extensions require approval in ECMS and may require response to a contractor's submission in PPCC. ECMS will require you to indicate if the extension is for time, or time and cost. ECMS does not require cost data for time extensions, however some ACE/Ms clarify time extensions as 'No Cost' extensions.

THREE TYPES OF DELAY

Delays are classified based upon whether they are excusable or compensable. Different combinations of these two conditions produce the following three practical scenarios:

- Non-excusable. If a contractor is solely responsible for a delay, it is likely non-excusable. Under this condition, a contractor is not entitled to additional time or money.
- Excusable, but non-compensable. If neither a contractor nor an owner is responsible for a delay, it could be excusable, but non-compensable. Under this condition a contractor is entitled to a time extension, during which an owner would not assess liquidated damages. However, a contractor is not entitled to extended costs. Examples of an excusable, but non-compensable delay could be a strike or labor dispute, or acts of God, if there is an appropriate clause in the contract. This is one of the few situations in which time does not cost money.

- Excusable and compensable. If an owner is responsible for a delay, it is likely excusable and compensable. Under this condition a contractor is entitled to more time and money, if warranted. Compensable delays must meet the following three conditions:
 1. A delay is caused by an owner or is within an owner's control.
 2. A delay results in additional costs to a contractor.
 3. A contractor has not assumed the risk of delay.

Compensable costs for excusable delays may include extension of a contractor's general conditions costs such as field office costs (including rental, office equipment, supplies, security, and cleaning fees). Other items a contractor may claim include extended costs for traffic control devices or detour maintenance, and costs of erosion and sediment pollution control devices. In some cases, accelerating the work may be more cost-effective than granting a time extension. Discuss both time and associated costs when evaluating time extension requests.

CUSTOMERS AND COMPLAINTS

To maintain customer satisfaction, ACE/Ms must be prepared to address all public inquiries, whether those responses are verbal or written. When responding to public inquiries or complaints, you are representing the Department, so maintaining a professional demeanor, regardless of a customer's approach, is important. Customer inquiries and complaints may be received through several sources. Regardless of the source of inquiry, every effort should be made to provide timely responses to inquires or complaints. If an answer cannot be promptly provided, inform the customer that you will obtain an answer and respond to their concerns after appropriate investigation.

Project-specific public outreach starts during design. One or more public meetings may be held to provide information about an upcoming project and sometimes solicit public input on specific aspects of design. The CRC can provide history or background on particular issues or concerns raised by the public during design. ACE/Ms should consult with the Design Unit's Project Manager to gain understanding about how established design considerations were applied to support decisions made.

There are numerous considerations important to property owners, local governments, and adjoining businesses that are integrated into the design of a project. ACE/Ms should consult those who implemented these considerations during design to learn how those considerations were evaluated and prioritized. ACE/Ms may be approached by groups or individuals that simply did not get what they wanted, or got something they did not want, from the design process. Examples include such design components as inclusion of sound walls, traffic signals, and acceleration or deceleration lanes. Knowing specific issues that have already been publicly discussed during design is the best preparation for responding to inquiries during construction.

Public complaints or inquires may be routed to ACE/Ms from PennDOT's Customer Care Center, project-specific websites, state legislators, or municipal leaders. Customers might also approach project personnel in the field or make a phone call or personal visit to the project field office. Advise field personnel where to direct customers if they are approached in the field. Possibilities for redirection include ACE/Ms, IICs, or consultant managers if public relations fall under a consultant agreement.

Having an established single point of contact to coordinate public responses will support consistent, unified responses to customer complaints. In many cases, customers may submit complaints through multiple avenues. People tend to keep asking the same question of different resources until they get the answer that they want to hear. Good management teams lead by discussing issues among themselves and then providing a unified response to others. Most issues have at least two sides and good managers will listen, investigate, evaluate, and provide consistent direction.

Responses to complaints should be routed back through the channel by which the complaint was received. Customer Care Center complaints and responses are logged and maintained on a statewide basis. Inquiries received through project-specific websites may also be logged and tracked for response date. Legislators' RFIs on behalf of constituents are also typically logged and tracked by their offices. Responding to constituents' concerns through their legislators can be one of the most useful tools in maintaining a good working relationship with the legislative community. The ADE-C and CRC should be informed anytime concerns from or replies are provided to legislators.

Email that is content sensitive or may have potential legal ramifications should be reviewed by the ADE-C and possibly the DE before providing an electronic response. The Office of Chief Counsel is also a valuable resource, and they are willing to help.

RIGHT TO KNOW INQUIRIES

All RFIs that invoke Pennsylvania's Right to Know Law (RTKL) must be submitted in writing to the Department's RTKL Office. Detailed instructions for completing requests, along with addresses and telephone numbers, are contained in [PennDOT Publication 2, Project Office Manual](#), Section B.10.5-1.

MUNICIPALITIES

All local government representatives from every County, City, Borough, Township, and Municipality can be found on the Pennsylvania Department of Community & Economic Development (PADCED) website under the [Municipal Statistics](#) page. This information is useful to ACE/Ms and their supervisory staff for contacting local officials with project issues.

LEGISLATORS

Senators and Representatives in the Pennsylvania Legislature can be identified by the region they represent. A list of U.S. Senators and U.S. Representatives representing Pennsylvania, complete with maps of their respective Districts is available at [PA house of Representatives](#). Maps of political boundaries are also available from the Department's Graphic Information Services (GIS).

BUDGET TRACKING

CONTRACT

The ability to establish and monitor budgets for construction projects is vital to the duties of ACE/Ms. Monitoring project construction costs requires frequent and deliberate communication between ACE/Ms and their field staff. ACE/Ms must be aware of extra work, significant quantity changes (above 125% or below 75%), and work order processing.

Projects' home pages provide good summary information including, Work Order Totals, Adjustment Totals, and Percentage of Work Complete. The 'ECMS Report Facility', available on a project's home page under the 'Construct' column, is a good tool for reviewing cost containment efforts. Several useful reports are available including Work Order Items Overruns, Work Order Items Underruns, and Item Significant Change reports.

When practical, ACE/Ms should require that submitted work orders are balanced with both necessary increases and available deductions. ACE/Ms should also participate in negotiations for extra work, agreed prices, and force accounts.

Use of the Item Price History is available under Resources on the Construction Projects tab and can be used to determine a fair and equitable price.

CONSULTANT

Consultant invoices are broken into three distinct cost accounts:

- Specific Rate of Compensation, which includes inspector hourly costs.
- Direct Costs other than Payroll, which includes expense costs such as commute mileage, on the job mileage, iPad monthly charges, etc.
- Direct Costs by Others for subconsultant invoices.

Each of these costs are tracked separately and if exceeded will not be paid.

Consultants should perform a review when any cost account reaches 75% of budget. A determination should be made if sufficient funds remain to complete the project, or if agreement funds should be increased to complete the work. A remark should be made in the 'Invoice Workflow' indicating, "There are sufficient funds to complete within the budget unless the scope changes," or, "A supplement/amendment will be necessary to complete the work."

As an invoice progresses through the workflow, each subsequent reviewer receives an automated email from PennDOT ECMS with a link to the Invoice Summary Page. Invoices may also be accessed through the 'Work Queue' tab on the top banner or from the 'Invoice Total' link on the Agreement's home page.

The ECMS invoice submission is made up of five ECMS pages - the Invoice Summary, Invoice Detail, Employee, Mileage and Hours Log Search Results, and Mileage and Hours - Inspector Log Screen. The Invoice Summary page provides the Invoice and Payment Workflows and the total invoice cost broken down by business partner. The Invoice Detail page breaks down the Other Costs (Direct Costs other than Payroll), and Specific Rate costs. Estimated Progress Report-Specific Rate of Compensation is attached to the Invoice Detail page and gives a full view of project status including the 75% thresholds. Access to the Employee and Mileage and Hours Log Search Results page are through the Employee Name, and Total Hours, respectively. The Mileage, and Hours Log Search Results pages provides access to the Mileage and Hours - Inspector Log Screen detailing daily hours and miles per inspector.

From either the Invoice Summary or Invoice Detail pages, the 'Go' link on the top banner gives access to Method Payment to Date (Specific Rate of Compensation) and Other Costs to Date (Direct Costs other than Payroll) Reports. The report breaks down costs and gives the percent of expenditures submitted or approved to date. Note that some estimating may be necessary if a consultant's invoicing is not current. It is important to get current estimates and budget forecasts if you suspect funds may be lacking.

ENGINEERING AND CONSTRUCTION MANAGEMENT SYSTEM (ECMS) MAX CHANGE

The ECMS Max Change Amount can be found on projects' home pages by expanding the 'Detail Information Banner'. The max change is set at \$1M at the start of the project. ECMS will not process a work order or contract adjustment if that work order or contract adjustment increases the current contract amount above the max change. Only the DE/ADE and Fiscal Officer levels have the ability to increase the Max Change Amount above the \$1M threshold.

PROGRAM MANAGEMENT COMMITTEE (PMC) REQUEST

ACE/Ms are responsible for fiscal control of projects and increases above programmed amounts require coordination with the Program Center through the District's Planning and Program Manager. Some Districts have a District PMC (DPMC) process with lesser thresholds. District Planning and Programming Units are responsible for identifying and securing funds necessary for approved District or Statewide PMC Actions. The BOPD tracks construction project cost increases and provides reports to the Program Center of potential PMC actions needed.

Thresholds that require PMC Action are:

- Any accumulative contract changes exceeding 25% of the bid price AND exceeding the bid price by \$1M requires PMC approval.
- Any accumulative change greater than \$2.5 M above the bid price requires PMC approval, regardless of the percentage of the bid price.
- Any accumulative change greater than \$1M above the bid price requires an email communication to the Program Center, regardless of the percentage of the project bid price, summarizing the cause and the status of the project. The BOPD should be copied on this correspondence.
- After the Program Center approves an increase to a project above the bid amount, any accumulative change greater than \$1M over the bid price plus the PMC approved increase will require another PMC approval.

The process for securing PMC approval is:

- ACE/Ms monitor the progress of their projects, and based on District or Statewide thresholds, request PMC approval for changes above these limits.
- Urgency of need must be defined to clarify those actions to be electronically routed for approval prior to regularly scheduled PMC meetings.
- Districts, understanding their funding limitations and potential delay impacts to projects, may need to advance contract changes beyond these limits knowing that should PMC not approve the additional funding request, other projects may need to be cut or county budgets may need to be impacted to cover the cost of the changes.
- BOPD monitors the percent change, regardless of the dollar value, monthly to monitor scope creep.
- BOPD provides the Program Center with the data monthly to verify which projects need PMC approval.
- After PMC approval, the District can revise the max change amount to be PMC approved amount (less inspection) + \$1M.
- Any subsequent accumulative increase above the action adjustment will require separate approval by PMC.

ACCRUED UNBILLED COST

Accrued unbilled costs occur when project costs exceed federal funds obligated for the project. The costs that exceed the federal funds obligated cannot be billed to the FHWA until additional federal funds are approved. These excessive costs are paid with state funding and are unbilled. Project costs include ECMS contract estimates, consultant management, inspection, design services invoices, and Department incurred payroll and expense costs that are assigned to federal funding.

ECMS has a tool that tracks obligated versus spent federal funds, which can be accessed through the 'Fund Codes' link on projects' home pages. From the Funds Code page click on the 'Usage' icon in the far-right column to open the Funds Usage page. The Funds Usage page provides current information of obligated funding and aggregate costs from contract

estimates, agreement invoices, and payroll and expenses. The costs are listed by both state and federal project numbers.

Accrued unbilled costs can be eliminated by adding funding to a project. Work with the Planning & Programing Unit to add funds. The Planning & Programing Unit will identify funds from low bid savings or other projects that are delayed.

Minor fund increases can be made without going through the PMC process. Each District has established thresholds, which if exceeded, may initiate a District PMC process. After identifying, and if necessary, gaining approval for funding transfer, the Planning & Programing Unit will initiate a revision to an original [Form D-4232](#). After approval of an amended [Form D-4232](#), the obligated federal funding is increased to the amended level.

Not converting Advance Construction (AC) funding at the start of projects can also lead to accrued unbilled costs. AC funding allows states to begin a project even in the absence of sufficient Federal-aid obligation authority to cover the Federal share of project costs. As the result, a state may undertake a greater number of concurrent projects than would otherwise be possible.

However, AC projects must be converted back to Federal-aid projects by obligating the permissible share of Federal-aid funds and receiving subsequent reimbursements.

PENNDOT DATA INTEGRATION FACILITY (PDIF)

The PDIF pulls information from an array of Department databases and aggregates that information in numerous reports that may be customized by users. The PDIF can be accessed from the Outlook home page using the 'PDIF BI Portal' link in the 'Other' section towards the bottom of the page, or from the PPCC Portal link 'PennDOT Data Integration Facility (PDIF)'.

HAPD - The Highway Administration Performance Dashboard was developed to monitor high level performance metrics that drive improvement. These metrics were developed by a team of District and Central Office members and are used as a measure of the District's performance. Measures can be viewed in a dashboard format or from user generated detailed reports, and include:

- Annual Letting Goal
- Engineer's Estimate vs. Contractor's Bid
- Final vs. Original Contract Amount
- International Roughness Index (IRI)
- NBIS
- Poor Condition
- Prequalification
- Project Closeouts
- Crash
- Accrued Unbilled Costs (AUC)
- Scorecard YTD
- Bituminous Longitudinal Joint
- Claims
- Contract Time
- Highway Occupancy Permit (HOP)
- Inactive Federal Obligation
- Lab Testing Section Turnaround Time
- Percent CS-430
- Percent QA Written Responses Required
- Statewide Transportation Improvement Program
- Surface improvements

CCC - Customer Complaint Center provides a listing and status of customer complaints over a defined period.

MOBL – Mobile Analytics provides usage and data aggregated from construction mobile apps.

- MCPSA Project Site Activity
- MCFA Force Accounts
- MCCID Concrete Inspectors Diary
- MCPL Punch List
- MPT Work Zone Traffic Control Compliance
- E&S VI Erosion & Sediment Visual Inspection
- MCDocs Mobile Construction Documents
- MHL Mileage and Hours Log
- CDocs Mobile Construction Documents
- VSIR Inspection
- Sample ID
- Consolidated Analytics Overall

PPCC - The project Statistics Category of PPCC Reports provides status and other activity information on the submittal and progress of PennDOT projects. The project exposure log compiles construction project data including, program, budget, construction inspection costs, summary of projected work items, and adjustments. Reports available include:

- Project Submittal Review
- Individual Focused Top 10
- Individual Focused Category and Parameters
- Portal Reports
- Outstanding Items
- PPCC Usage Statistics

BHR – Bureau of Human Resources has succession planning tools and safety goal reports, including:

- Completed & Outstanding Courses for Present Job Classification
- Completed & Outstanding Courses for Alternate Job Classification
- Employee with Specific Outstanding Training Courses
- Job Classification to Correlated Competencies Mapping
- Competency to Correlated Job Classification Mapping
- Competency to Correlated Training Courses Mapping
- Training Courses & Correlated Competency Mapping
- Job Classification to Competency to Training Course Mapping
- Competency Description
- List of Training Courses

Quality Assurance Engineering representatives from the Construction Quality Assurance Section (QA) of the BOPD conduct field reviews to assure that the Department is receiving the highest quality materials, and that the incorporation of those materials into finished products is in accordance with PennDOT Specifications, standards, and contract requirements. On occasion, those materials and their installation methods may deviate from accepted practices or defined specifications. When these instances occur, QA Engineers will attempt to resolve those concerns at the project level.

After field review of specific project operations, QA Engineers will issue their findings in a Form TR-200. This report summarizes the results of their evaluation and whether a written response is required (WRR: Yes/No). When a difference of opinion arises about whether methods or materials received can be interpreted as acceptable, QA Engineers notify IICs and ACE/Ms of their findings.

When a written response is required, ACE/Ms conduct discussions of findings with IICs, field inspectors, and the QA representatives that prepared the report. After those discussions ACE/Ms prepare a response to a QA regional team leader. Responses should address findings, a District's position, corrective actions taken, and measures that will be taken to prevent similar occurrences. Occasionally, a meeting may be required with contractors, IICs, field inspectors, and QA representatives to assure that corrective actions are agreeable to all parties. Detailed information and procedures for responding to Quality and Independent Assurance Deviations can be found in [PennDOT Publication 2, Project Office Manual](#), Section B.9.6. QA Engineers routinely collect material samples during field reviews. Testing results for those samples are entered into the Quality Assurance Reporting Systems (QARS). When a field review is conducted on plain cement concrete and cylinders are molded, follow the procedures for completing the shipping and sampling of field specimens as found in [PennDOT Publication 2, Project Office Manual](#), Section B.6.16.

STORED MATERIALS REQUEST

Requests for stored material payments are made in accordance with [PennDOT Publication 408](#), Section 110.06. Contractors submit [Form CS-110, "Payment Authorization for Material Stored or On Hand"](#) to a project's field office, or into PPCC, for payment. The form is reviewed and if in accordance with the specification, is signed by an IIC, after which the stored materials package is forwarded to an ACE/M for signature prior to payment. Additional information on stored materials can be found in [PennDOT Publication 2, Project Office Manual](#), Section B.2.3.

DISPOSITION FORM TR-455

Documenting the disposition for all material test failures is critical. [Form TR-455, "Disposition of Failed Materials,"](#) should be completed in eCAMMS, including a report of the investigation, test results, and appropriate remarks to complete the records. Disposition of failed materials for District samples must be provided in eCAMMS within 60 days of the sample release date. Written responses for a failed QA/IA samples or TR-200 Report (QA project or source review) must be provided in eCAMMS within 30 days from the date the sample was released or from the date the Form TR-200 was approved. Document guidelines and response format for each type of material sample is provided in [PennDOT Publication 2, Project Office Manual](#), Section B.9.1.

LETTER FOR CORRECTIVE ACTION

ACE/Ms should notify contractors in writing if corrective action is needed to resolve a material failure. Contractors should respond to IICs or ACE/Ms with their plan to correct failures. Refer to [PennDOT Publication 408](#), Section 107.16(b) for information about latent defects. [PennDOT Publication 408](#), Section 105.12 provides information about notifying a contractor of defective work.

REQUEST FOR PARTIAL PAYMENTS

In certain instances, contractors may request, in writing, partial payment for material that must be removed and replaced, or for failed material, based upon the location and nature of the failure. Under certain specific circumstances, allowing concrete meeting the 'remove and replace' criteria to remain in place may be in the Department's or public's general interest. Following is guidance for accepting material at reduced cost.

OUT OF SPECIFICATION CEMENT CONCRETE

Evaluate low strength, cast-in-place cement concrete using the compressive strength of concrete cylinder or concrete core test specimens. [PennDOT Publication 408](#), Section 110.10 provides detailed procedures, minimum strength

requirements, and a step-by-step flow chart for the evaluation, disposition, and the adjusted payment of low strength concrete.

If concrete is evaluated as deficient, contractors should be directed to remove and replace the lot. If a contractor further requests allowing the concrete to remain with reduced payment, the following steps should be taken.

- A contractor submits a written request to the District.
- A contractor must include a signed document waiving the right to pursue a claim.
- A contractor must perform a detailed structural analysis to verify that all design assumptions have been satisfied using the lower compressive strength value.
- Structural analysis will be reviewed by a PE in the District.
- The PE responsible for checking the contractor's structural calculations will be required to certify that they have reviewed the calculations in detail and concur with the recommendation.
- When all the above is met, the payment is to be 50% x Contract Unit Price (CUP) x lot (as specified in [PennDOT Publication 408](#), Section 110.10(d) 2. [\(2020 Edition, Change No.2, April 9, 2021\)](#) for deficient lots of concrete.
- If approval is granted by the DE, deficient concrete meeting the remove and replace criteria will be permitted to remain in place. Approval of the DE may not be delegated to a lower level.

Additional information on adjusting the price of low strength concrete can be found in [PennDOT Publication 408](#), Section 110.10 and in [PennDOT Publication 2, Project Office Manual](#), Section C.1.13.

OUT OF SPECIFICATION ASPHALT CONCRETE

Asphalt test results from the Department's Laboratory Test Section (LTS) are transmitted to contractors and Districts through the eCAMMS system. Price adjustment percentages are calculated and provided based upon test results. Process a contract adjustment using ECMS to recoup costs using the test result percentages of a lot payment on the next estimate. When creating the contract adjustment, select 'Adjustment for Deficiency' as the adjustment type.

For mixture acceptance testing or density acceptance testing performed by the LTS, a contractor may request, in writing, that the Department retest a lot if the initial test results indicated a defective lot (remove and replace), a lot with an Overall Lot Pay Factor (OLPF) < 90.00, the asphalt content pay factor is < 80.00, or the density pay factor for the lot is < 80.00. A density retest cannot be performed when one or more of the density acceptance cores in a lot were coated with paraffin wax as a result of PTM No. 716 during the original density acceptance testing. Provide written retest requests to the District Executive within three weeks of the date the LTS test results are released. The LTS will perform retest with a contractor present, unless otherwise agreed to in writing. Additional information and detailed procedures for asphalt mixture acceptance, requests for retests, can be found in PennDOT Publication 2, Project Office Manual, Section B.9.10.

If no retest occurs, or the results of a retest indicate material failure on one pay parameter, write the contractor a letter directing removal and replacement of the defective lot, or to request 70% payment (50% for Stone Matrix Asphalt). If no retest occurs, or the results of a retest indicate material failures on two or more pay parameters, write the contractor a letter directing removal and replacement of the defective lot. If a contractor fails to respond to the letter with either a plan for removing and replacing the material, or a 70% payment (50% for Stone Matrix Asphalt) request with justification, send the contractor a letter warning default as specified in [Publication 408](#), Section 108.08 for failure to respond.

If a contractor requests allowing the asphalt to remain with reduced payment, a District representative will observe and evaluate the defective pavement based on the physical condition of the subject pavement, and the specific deficiencies found in the test results. The pavement review considers current conditions, workmanship, severity of failure, roadway characteristics, and impacts of removal and replacement operations. Additional information and detailed procedures can be found in [PennDOT Publication 2, Project Office Manual](#), Section B.9.9.

OUT OF SPECIFICATION MATERIALS

Department policy is to reject all out of specification materials unless there is valid justification to accept such material. All materials incorporated into a project should be certified by a properly completed [Form CS-4171, "Certificate of Compliance,"](#) or sampled and tested. Sample frequencies for many construction materials can be found in [PennDOT Publication 2, Project Office Manual](#), Section B.6.5.

Evaluations of material test failures are based upon compliance with specifications, current conditions, workmanship, severity of failure, roadway characteristics, and impacts of removal and replacement operations. If materials are deemed acceptable to remain in place, negotiate with the contractor for an amicable reduction in price.

Document material failures in eCAMMS and include any supporting documentation. Include penalty calculations and reference the electronic work order adjustment in ECMS for payment. Additional guidance on timing, format and proper notification can be found in [PennDOT Publication 2, Project Office Manual](#), Section B.9.1.

NOTICE OF INTENT TO CLAIM

UPDATE TO STATEWIDE SPREADSHEET

Central Office maintains a statewide spreadsheet of potential claims. The spreadsheet is managed by the BOPD, QA Section. ACE/Ms are responsible for inputting and updating claim status information for their projects on the spreadsheet. The spreadsheet is accessible on the SharePoint drive at: [Potential Claims Spreadsheet](#)

Additional guidance is available in [PennDOT Publication 2, Project Office Manual](#), Section B.1.19, and in [PennDOT Publication 408](#), Section 105.01(a).

DISPUTES

Clarifying and resolving issues as early as possible, and at the lowest possible level, is important. Unresolved issues can develop into disputes, which can lead to potential claims. All resolutions must be dealt with in a timely manner. Lagging responses to project issues makes resolving those issues more difficult. In general, to avoid or mitigate the chances for disputes and claims, ACE/Ms should adhere to the following principles:

- Develop a thorough knowledge of plans, contracts, special provisions, and specifications for projects.
- Read all relevant portions of contracts and special provisions before answering questions or making decisions.
- Perform accurate and consistent timely inspections, testing, and reporting in accordance with Department policies and procedures.
- Strictly adhere to established testing procedures.
- Accept nothing less, nor require nothing more, than what is required by contracts and special provisions.
- Instruct and enforce all inspectors to apply consistent, contractually applicable standards for work being performed.
- Maintain a professional and cooperative attitude with all contractor personnel.

- Be sympathetic to contractors' problems, and complimentary when a contractor delivers exceptional quality.
- View project accomplishments as a team effort between contractors and the Department's representatives.
- Deal with the superintendent (or at least the same contractor representatives) on the same issues all the time.
- Try to anticipate and recognize potential claim situations.
- Face problems, including Department mistakes, and seek fair and equitable resolutions.
- Track proposed issue resolutions to be sure that those charged with making decisions know others are waiting for those decisions.
- Act promptly and decisively when dealing with problems. If you cannot resolve an issue, defer to someone who can.
- Realize that communication is probably the most effective deterrent to claims, and thorough documentation is the best defense.

ISSUE ESCALATION MATRIX

When issues between the Department and contractors arise and cannot be resolved by IICs at the project level, those issues are then elevated to the District level where ACE/Ms provide clarification and determine resolution. Without resolution at that level, traditional issue escalation hierarchy will take the issue from ACE/Ms to an ADE-C, and then to the DE. Using an issue escalation matrix can be helpful with managing timely resolution of disputes. [Form CS-8, "Issue Escalation Matrix"](#) shall be completed and entered into PPCC for contractor and Department at the start of the project.

An issue escalation matrix is typically developed at the beginning of a project and established in that project's partnering documents. One approach is to compile Form CS-8 at a pre-construction conference and distribute it with the minutes. An issue escalation matrix simply identifies the decision makers for the contract parties at each level of the project, such as field, District, Executive, as well as the time parameters assigned to each level. If resolution cannot be found at the lowest level within a given time period, each party agrees to escalate the issue to next higher level. One party should not act independently, and escalation should occur within organizations. For example, a PennDOT IIC should escalate an issue to an ACE/M, while a contractor's superintendent should escalate an issue to their Project Manager. Failure to follow these procedures often results in the upper levels of the process hearing only one side of an issue.

ORDER OF PRECEDENCE

In some instances, an issue may be brought to resolution when it involves differences between Contract Special Provisions, Specifications, Contract Drawings, and Roadway or Bridge Standards, based upon order of precedence as established in [PennDOT Publication 408](#). Section 105.04 indicates that the following order of precedence will apply in the event of a discrepancy between plans and specifications:

- Special Provisions
- Plans (excluding referenced Standard Drawings)
- Specifications (other than Special Provisions)
- Standard Drawings
- Electronic Files

DOCUMENTATION OF DISPUTES

When issues degenerate into disputes, ACE/Ms must remind IICs to maintain effective and factual documentation. Should an immediate resolution of project disputes prove elusive, contractors may pursue a claim against the

Department. Coordinate with IICs to keep records of all labor, equipment and materials associated with the disputed work. Compare records weekly with contractors' corresponding records for accuracy and consistency. Resolve discrepancies where possible or note disagreements between records. Maintain records until disputes are resolved. Coordinate with IICs to establish procedures for maintaining records. Maintaining a separate issue-specific file, including copies of all field documentation relevant to the dispute may be helpful. Maintaining a separate file of copies of relevant information may be helpful for distributing that information should the dispute escalate to a claim.

NOTICE OF INTENT TO CLAIM

If a dispute cannot be resolved at the project level, contractors may opt to pursue a claim. In accordance with [PennDOT Publication 408](#), Section 105.01(a), the first step in the claims process is filing an intent to claim. Contractors are required to file an intent to claim in PPCC within 10 days of an act or omission resulting in a claim or disagreement with the decision of the DE on a dispute. The intent to claim must include a completed [Form CS-105, "Contractor Notice of Intent to Claim."](#) When an intent to claim is received an ACE/M should take the steps listed below.

UPDATE TO STATEWIDE SPREADSHEET

Central Office maintains a statewide spreadsheet of potential claims. The spreadsheet is managed by the BOPD, QA Section and ACE/Ms are responsible for inputting and updating claim status information for their projects on the spreadsheet. It is accessible on the SharePoint drive.

REQUIRED RESPONSE TO CONTRACTOR

Respond to the intent by acknowledging receipt of the intent and reiterating the requirements for submission of a claim to clarify that the intent to claim does not constitute as the actual filing of claim. A form letter for response to the intent to claim can be found in [PennDOT Publication 2, Project Office Manual](#), Section B.1.18-1.

REQUIRED NOTIFICATIONS

Coordinate with the DE to notify the Office of the Chief Counsel and the Section Chief of the BOPD, QA Section, upon receipt of an intent to claim. The Department's attorneys can provide experienced guidance for required documentation and possible mitigation of the suspected claim. If the project is a Federal funded NHS project, also notify the FHWA Transportation Engineer to allow early involvement by the FHWA. Not only will PennDOT benefit from the FHWA's experience and expertise, but if the FHWA does not agree with the Department's resolution, it may elect to not participate financially.

CLAIMS INVESTIGATION

The requirement for notice of intent to claim was established to give the Department an opportunity to investigate claims and document all relevant work as accurately as possible. Disputes may relate to a claim of extra costs, extra time, or both, to perform the work. Procedures for claims related to delay are detailed in [PennDOT Publication 408](#), Section 111, "Delay Claims." Section 111 outlines required procedures for record keeping of associated costs and time for delay claims and outlines cost that are ineligible for claim.

ACE/Ms may continue to attempt to resolve a dispute at the project level through investigation after receipt of an intent to claim and before filing of a claim. A claim, once filed, is delegated to the Contracting Officer for review. The Contracting Officer is typically the DE. ACE/Ms are typically tasked with presenting evidence on behalf of the

Department during a District Claim Review for claims that cannot be not resolved at the project level. [PennDOT Publication 2, Project Office Manual](#), Section B.1.19-1 includes a summary of the process for highway contract claims.

DISTRICT CLAIM REVIEW

In accordance with [PennDOT Publication 408](#), Section 105.01(a), if a fair, reasonable, and justifiable resolution cannot be reached at the Construction Unit level, that is with ACE/Ms or an ADE-C, a claim review meeting may be held. Claim review meetings are chaired by a Contracting Officer, typically the DE, and include a technical advisor, usually the Chief of Quality Assurance, and a legal advisor, typically from the Office of Chief Counsel, Highway Construction and Claims Division. Final decisions rest with the DE.

After opening statements, contractors present their position, followed by the Construction Unit. A Contracting Officer or advisors may ask questions to clarify issues, and then sequester themselves for discussion. Following discussion, a preliminary determination is provided, often within an hour to two. Within a few weeks, the DE issues a letter to the contractor with a final determination. This letter is sent registered mail.

Claim review meetings review a high volume of information and project history in relatively short timeframes. Claim review meetings may last between two hours and all day. ACE/Ms should be prepared with handouts summarizing their key points for dispute of the claim.

At this stage of the dispute/claim process, the Contracting Officer, typically the DE, has the authority to negotiate settlement and resolution with the contractor .

[PennDOT Publication 2, Project Office Manual](#), Section B.1.19-1, as well as [PennDOT Publication 408](#), Section 105.01, “Authority of the Representative,” includes a summary of the process for highway contract claims.

BOARD OF CLAIMS

If resolution is not agreed upon by all parties, contractors may take disputes to the Board of Claims, where the Department is defended by the Office of Chief Counsel. Chief Counsel may authorize a negotiated settlement for amounts up to \$500,000. Settlements for amounts in excess of \$500,000 must be approved by the Deputy Secretary for Highway Administration.

DESIGN COORDINATION

CONSTRUCTION INFORMATION

Developing construction schedules and performing constructability reviews are key tasks for which the Construction Unit can contribute field knowledge and experience to the design process.

CONSTRUCTION CONSULTATION

Design Project Managers are foundation members of a project’s design effort. They are excellent sources for background information and insight into the vetting of design alternatives and selection of a final design. They are also an excellent initial point of contact for assistance in resolving design issues that arise during construction.

Your role in the resolution of design issues during construction is to provide complete, yet concise, information to the Design Project Manager. Like ACE/Ms, Design Project Managers have many demands on their time and talents. The

more concise you are in providing relevant information, the more efficiently Design Project Managers will be able to digest that information and respond. Be specific in your questions so that Design Project Managers do not have to waste time deciphering issues or answering wrong questions. Ask yourself what field or construction information you would need to respond to an issue and deliver that same information to Design Project Managers. Provide photographs, sketches, and survey information from contractors to specifically communicate differences between field conditions and plans.

Design Project Managers also provide oversight of design consultants and are familiar with project budgets for construction consultation. While ACE/Ms are responsible for monitoring and controlling construction consultation costs, Design Project Managers administer design services agreements. ACE/Ms and Design Project Managers must maintain consistent communications to effectively coordinate and administer design services during construction. Project staff must monitor all working hours charged to construction consultation costs, and that information must be relayed to Design Project Managers consistently.

DESIGN ERRORS / OMISSIONS

Although it does not happen often, during the normal course of authorizing additional construction work, an omission or error may be found, or ACE/Ms may be notified by their field personnel of a possible consultant design error. To properly address such issues, ACE/Ms needs to be aware of the differences between a design error and a design omission. The definitions are as follows:

Design Error is an action or circumstance created by a design consultant that results in additional work, extra work, rework, or corrective work – and cost – to the Department. This usually involves a contractor performing acceptable work in accordance with the plans and then having to remove or modify the work because unacceptable conditions are discovered after the work is complete.

If a consultant's action does not result in costs to the Department that are greater than the costs the Department would have incurred without the design error, a design error is not considered to have occurred.

Design Omission is an action by a design consultant that results in additional or extra work that should have been tabulated in the original contract amount but was inadvertently missed. The work is subsequently added by work order in the construction phase. Costs for the omitted work would have been included in the original bid amount, but now is added to the contract as extra costs.

At the first indication of a potential design error, IICs notify an ACE/M, and immediately document the issue in the project file. IICs then prepare a report including a complete description and consequences of the error and any immediate action taken to reduce the cost of the error, along with photographs, records of labor, materials, and equipment costs incurred. This report is forwarded to an ACE/M.

With notification of a possible design error, an ACE/M needs to proceed with documentation as though it is a "worse-case scenario." ACE/Ms shall immediately notify the ADE-C, and, as soon as possible after notification, visit the job site to investigate the problem. ACE/Ms determine other individuals that should be present during a job visit. An ACE/M is required to participate in gathering evidence to support or refute a design error if indeed a design error does exist. ACE/Ms are required to do everything they would do in an Extra Work condition, including starting the process to request authorization to resolve the problem. However, it is essential that design consultants are notified of the alleged design error and that they are given an opportunity to participate in the solution. [PennDOT Publication 93, "Policy and](#)

[Procedures for the Administration of Consultant Agreements](#)," Section 5.8, addresses the complete process when a Consultant Design Error is discovered during construction.

EQUAL EMPLOYMENT OPPORTUNITY (EEO)

ACE/Ms should ensure that IICs are aware of EEO contract compliance and activities and reporting complaints. IICs should complete an EEO Checklist, as outlined in [PennDOT Publication 2, Project Office Manual](#), Section B.11.5, at project startup and continue to return to the checklist as the project progresses through construction.

Additionally, a DLCCA and Bureau of Equal Opportunity (BEO) Field Agent have extensive knowledge and experience with the Department's EEO requirements, policies, and procedures. Field agents reside at a centralized location and have responsibilities over two to three Districts. They are listed in the Commonwealth Phone Directory under BEO, Compliance Section.

BULLETIN BOARD

ACE/Ms should ensure that federal and state requirements for Bulletin Board display are addressed at pre-construction conferences and verify that IICs are aware of their duty to frequently monitor contractors' bulletin boards using the Project Bulletin Board Checklist found in [PennDOT Publication 2, Project Office Manual](#), Section B.1.21.

SUBCONTRACTS EQUAL EMPLOYMENT OPPORTUNITY (EEO) CLAUSES

[PennDOT Publication 408](#), Section 107.3, "Specific Equal Employment Opportunity Responsibilities," requires contractors to physically attach and bind specific contract special provisions of EEO requirements to all subcontracts over \$10,000.00, excepting material suppliers. The EEO Checklist for IICs as outlined in [PennDOT Publication 2, Project Office Manual](#), Section B.11.5, provides a list of required special provisions.

Contractors are required to maintain copies of all subcontracts at the project site. The verification requirement is to ensure that EEO provisions are binding on all subcontracts. Some contractors will redact sensitive information or will not provide physical paper copies of the subcontract. In those cases, a review of the original subcontracts noting that all EEO provisions are attached is sufficient.

CONTRACTOR TRAINEES

ACE/Ms should ensure that contractors' proposed training programs are submitted within ten days of NTP and verify that IICs are aware of the duties associated with monitoring trainees if an OJT program is part of the contract.

The following forms are necessary for approval of the program, trainees, and tracking work hours:

- [Form EO-363, "Contractor's On-the-Job Training Program Classifications for PennDOT Approval"](#)
This initial form is used to define the contractor's proposed training program. Form EO-363 should be submitted no more than ten days after NTP. For projects let before 2021, contractors submit Form EO-363 through PPCC. For projects starting in 2021, Form EO-363 will be submitted through ECMS. The OJT-Training Program Classification (EO-363) link is located under the 'Award' column in the project home page. The EO-363 workflow is to IICs, with subsequent review and approval by a DLCCA, and final review and approval by BEO's OJT Program Administrator.

- [Form EO-364, “PennDOT On-the-Job Training Program Enrollment Form”](#)
Located under the ‘Construct’ column in the project home page, Form EO-364 is submitted through ECMS to IICs with subsequent review and approval by a DLCCA, and final review and approval by BEO’s OJT Program Administrator. The form must be submitted and approved prior to start of work for requested trainee. Training and progressing minorities and women toward journeyman status are the primary objectives of a training program. Contractors should make every effort to enroll minority trainees and women by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees.
- [Form EO-365, “Highway Contractor’s Monthly Training Report”](#)
Located under the ‘Construct’ column in the project home page, Form EO-365 is submitted through ECMS to IICs with subsequent review and approval by a DLCCA, and final review and approval by BEO’s OJT Program Administrator. The report is due to IICs by the 30th of the month being reported. The DLCCA should accept and submit the report by the 5th of the following month, and it is due to BEO Central Office by the 10th of the following month. The form is used to track hours worked each month for designated trainees. After approval in PPCC (ECMS after 2020), IICs make payment for the number of hours worked by trainees under the designated trainee contract item #1999-9999 for federally funded projects, and item #1999-0000 for 100% state funded projects.

DIVERSE BUSINESS ENTERPRISES (DBE)

Minority participation, as approved during the awarding of the contract, should be thoroughly reviewed at pre-construction conferences. Every DBE included in a project will be tracked to ensure they meet their individual goals. Contractors should be reminded that all DBEs, including manufacturers and suppliers, must be submitted for subcontractor approval. Doing so allows ECMS to track individual DBE goals.

ACE/Ms should review duties toward DBEs with IICs:

- Do not allow a DBE to begin work on project until properly certified or prequalified.
- Review DBEs’ executed subcontracts to ensure that they match the DBE commitments in ECMS and contain the EEO provisions required by their prime contracts.
- Be aware of DBE work items and verify that DBEs do the work.
- Monitor DBE subcontractors for Commercially Useful Function.
- Review and approve payments to DBEs on the ECMS Minority Payments Page.

Non-Federally Funded projects contain Good Faith Effort (GFE) provisions for Diverse Business (DB) participation:

- DB provisions shall be discussed at the pre-construction conference. GFEs must be made to ensure DBs have the opportunity to compete and perform on contracts.
- ACE/Ms coordinate with IICs to ensure DBs are certified and/or pre-qualified to perform work and necessary subcontractor requests have been submitted/approved.
- IICs have a copy of the executed subcontract or agreement. In lieu of obtaining the entire subcontract or agreement, IICs must at a minimum receive a copy of the executed signature page, a copy of the description of the scope of work, and a copy of the unit prices as they appear in the subcontract or agreement.
- If a DB is replaced during the life of the contract, contractors make a GFE to replace with another certified DB.

- Within 30 days of project completion, contractors must submit a summary of their GFEs of DBs in ECMS.

COMMERCIALLY USEFUL FUNCTION (CUF) FORM SIGNED BY ACE/M

On projects with federal funding, ACE/Ms should coordinate with IICs to ensure [Form EO-354, “DBE Commercially Useful Function Report \(for Federally Funded Project Only\)”](#) is complete within five days of DBE contractors’ work on a project site. A new CUF Report must be completed once in a construction season, or anytime a DBE’s scope of work has changed.

IICs must submit the completed form to ACE/Ms through PPCC using a project’s PPCC home page under the ‘PennDOT’ tab, and submittal type ‘Commercially Useful Function’. ACE/Ms must review and acknowledge by printing name, phone number and date, then submit to the next reviewer, with final approval coming from the CUF reviewer at the Bureau of Equal Opportunity.

DBE SUBSTITUTION

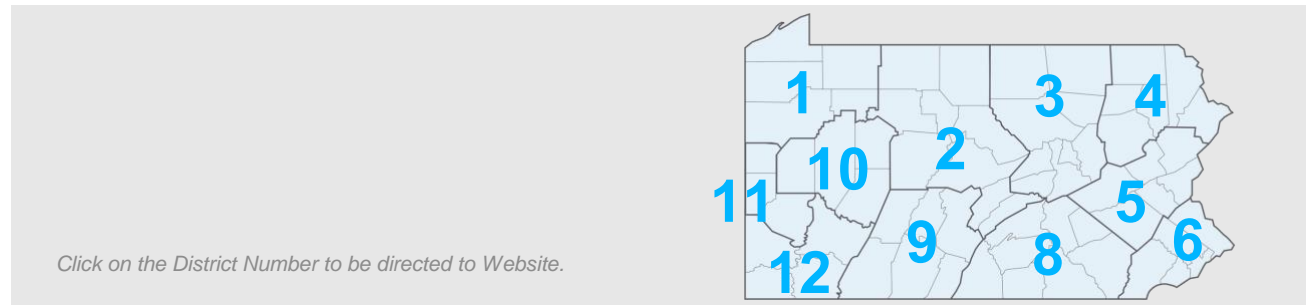
If for any reason during the life of a contract, replacing a DBE that fails to perform successfully, or is not properly certified/prequalified, becomes necessary, contractors must request written approval from the Department and submit a request in PPCC prior to making the change. If the Department concurs with a change request, contractors must make a GFE to re-contract the work with another DBE, or subcontract other work items to DBE firms to mitigate the DBE shortfall.

Contractors must comply with the following procedures:

- Obtain written approval before substituting a DBE or making any change to listed DBE participation.
- Immediately request substitution authorization from the District in writing.
- Requests must include documentation supporting a substitution, and written agreement from a DBE agreeing to the change.
- Include proof that a certified letter giving a DBE five days to respond with acceptance or to notify the Department of non-acceptance has been sent.
- Demonstrate that every effort has been made to allow a DBE to perform.

Upon written notification, discuss with District DLCCA for further coordination with the BOPD, Contract Management Section Unit, for their review and approval. Detailed procedures for amicable and non-amicable substitutions may be found in [PennDOT Publication 2, Project Office Manual](#), Section B.11.6, “Administering Disadvantaged Business Enterprise (DBE) Requirements in Federal-Aid Contracts,” III “Field Monitoring by Project IIC”, C “Substitution.”

POST-CONSTRUCTION ACTIVITIES



FINAL INSPECTION

NOTIFICATIONS

When a project is substantially complete, schedule a mutual final inspection between the Department and the contractor. Substantially complete is defined by [PennDOT Publication 408](#), Section 110.08 as "the date when at least 90% of the contract work has been completed and the project can be used, occupied, or operated for its intended use." Attendees to the final inspection should include all stakeholders, including applicable PennDOT personnel (BOPD, Design, Construction, and Maintenance), FHWA Transportation Engineers, local municipal representatives, and affected utility owners. When railroad companies are involved with a project, the PUC may schedule and participate in a separate final inspection.

PUNCHLIST

ACE/Ms should verify that punchlist items identified throughout the project are entered in ECMS in the Closeout Section under Project Punchlist, including working punchlists, as well as the Final Punchlist. Punchlist items remain 'unresolved' until complete, and inspection personnel must close each item by marking 'resolved' in the Closeout section.

On the date of Final Inspection, IICs should provide ACE/Ms a copy of the punchlist identifying those items that have already been corrected and any working punchlist items that remain to be corrected. Final inspection of a project may reveal additional work needing correction, which is added to open remaining working punchlist items to establish the Final Punchlist in ECMS.

A Finalization Checklist under the Project Closeout section in ECMS also requires information input related to the Final Inspection and Punchlist, including the final inspection date, attendees, and updated punchlist.

In some Districts on select projects, [Form CS-4136, "Punchlist Form"](#) may be used to track punchlist items and [Form CS-4137, "Final Inspection Form"](#) may be used for Final Inspection. These hard copy forms are no longer in use by PennDOT, but may be in use by certain local sponsors or other initiating parties.

FINAL AUDIT

After all physical work has been completed, and before a 'Final Estimate' is generated, ACE/Ms should assure that their District Finals Unit conducts a comprehensive audit of a project with reference to pay quantities and documentation of operations and events. During this audit, all certifications on the project should also be verified by the Materials Unit. ACE/Ms should also verify that all 'As-built' drawings are up to date and delivered to responsible parties within District Offices.

Detailed information on conducting a semi-final or final inspection is contained in [PennDOT Publication 2, Project Office Manual](#), Section D.1.1-1.

OTHER ACTIVITIES

ADA RAMP VERIFICATION

ACE/Ms should coordinate with IICs and contractors to ensure completion of ADA Ramp Verification in accordance with District procedures. The ADA Ramp Verification process typically involves completion of [Form CS-4401, "Curb Ramp Inspection Form,"](#) review and inspection by the District ADA Ramp Unit, Construction Services Engineer, or delegated specialist, and upload of the ADA Ramp Verification record to a statewide database. While responsibility and routing through the verification process from the project level to the statewide database may vary by District, ACE/Ms should verify that the process is completed for each of the ADA ramps constructed on the project.

Form CS-4401 may be completed by a contractor for review and approval by an IIC or ACE/M, or it may be completed by an IIC, depending upon the District. Some Districts use PPCC for the routing and review of the form, while others require additional uploads in ECMS, such as a Letter of ADA Ramp Verification, as part of the Finalization checklist. The Finals Unit or another designee may be responsible for uploading a completed verification record to the statewide database. ACE/Ms can review the Project Closeout section of ECMS and coordinate with their District Finals Unit for more information about their District-specific verification process.

QUANTITY BALANCING WORK ORDERS

ACE/Ms should verify that IICs balance, or reconcile Plan and Actual Quantities, through Balancing Work Orders, as appropriate. IICs should select the 'Balancing Overruns/Underruns' option under change types when creating a balancing work order. An associated ECMS Authorization is not necessary for balancing work orders initiated to balance contract items that were paid to within 25% (+/-) of their original quantity since this balancing will not result in a change to contract unit price. A balancing work order is also required for contract items that exceed 25% (+/-) of original quantity and the balance work order for these items do require associated ECMS Authorizations, because actual quantities in excess of 25% (+/-) of the original plan may result in changes to the contract unit price. ECMS will not automatically flag Balancing Work Orders that are not properly attached to ECMS Authorizations since not all Balancing Work Orders require attached Authorization. ACE/Ms should manually review balancing work orders to ensure proper adherence to policy for associated authorizations.

Additional information on Balancing Work Orders is available in [PennDOT Publication 2, Project Office Manual](#), Section B.3.

CLOSE-OUT OF DBE/EEO

ACE/Ms should coordinate with IICs to review DBE utilization and verify that established project utilization goals were met. Utilization percentages are available in ECMS on a project's home page.

Non-federally funded projects must adhere to DSP4, Disadvantaged Business Requirements, and require GFE through the life of the project. Contractors must submit a GFE summary of DBE utilization in ECMS within 30 days of project completion.

Federal-aid contracts must adhere to Designated Special Provision DSP-7, Disadvantage Business Enterprise Requirements. Failure to meet DBE goals established for federally funded projects may result in sanctions, including suspension of prequalification status. If utilization goals were not met for any originally proposed DBE, contractors must submit a shortfall letter. Shortfall letters must be submitted even if a contractor is not at fault. An example of a 'no fault' cause is the elimination of a subcontracted work item that was intended to provide DBE utilization. Shortfall letters are submitted through ECMS under payment comments. Shortfall letters require contractors to provide summaries of their DBE participation and explain the causes of shortfalls. Responses must include documentation of GFEs made to meet established goals and establish causes of failure to meet established goals during construction.

Responses to shortfall letters must be forwarded to the DLCCA and the BEO. DLCCA and BEO will determine if a review by the Interdisciplinary Review Team (IRT) is warranted.

More information about procedures for shortfalls on federal and non-federal aid projects is included in [PennDOT Publication 2, Project Office Manual](#), Section B.11.6-1 through B.11.7-1.

AS-BUILT DRAWINGS

After construction is complete, ACE/Ms should coordinate with IICs to ensure that 'as-built' drawings, together with project field records, are submitted to the District for review. Responsibility for review and maintenance of the master record may vary by District; as-built drawings may be routed through one or more units, such as the Finals Unit, Survey Unit, Design Unit or Plans Unit. Field changes noted on 'as-built' prints should be submitted to the District as an electronic file.

Refer to [PennDOT Publication 2, Project Office Manual](#), Section B.1.16 for as-built preparation procedures, and Section D.2.2-1 for Department records retention policy.

AFTER-ACTION REVIEWS

An After-Action Review (AAR) is an assessment, usually conducted at the conclusion of a construction project, that enables the Department's field staff and District personnel to discover what was intended, what was done, what should be sustained, and what should be improved. Considered a professional discussion of events, an AAR enables employees to understand why things happened during the construction process and to learn from that experience. A good time to conduct the AAR is at the final inspection when all stakeholders are together to provide input. Major project work orders are good discussion topics.

If there is potential for a contractor to pursue a claim, an AAR should be coordinated with the Office of Chief Counsel.

An AAR does not have to be conducted at the conclusion of a project. Rather, it may be performed after an event during construction, thus becoming a live learning process. Both positive and negative events may contribute to learning. AARs provide feedback, which generates ideas and suggestions that may improve the next project.

A properly conducted AAR is part of the communication process, educating and motivating people to take corrective actions and improve project delivery. AARs may prevent future confusion on organizational priorities and allows staff to build on successes while learning from mistakes. Further, an AAR could lead to the development of a statewide 'best practice', or a change in Specifications.

When conducting an AAR, follow these criteria:

- An AAR is a dynamic, forthright, professional discussion of an event, activity, or project. Everyone can, and should, participate if they have an insight, observation, or question that will help identify and correct deficiencies or maintain strengths.
- An AAR is not a complaint session. No one, regardless of title or position, has all the information or answers. AARs maximize learning by offering a venue for staff and leadership to talk frankly about a topic, produce a report, and better understand how to carry out similar events, activities, or projects in the future.
- An AAR is not a full-scale evaluation or evaluation report. An AAR does not grade success or failure. There are always weaknesses to improve, strengths to sustain, and opportunities to learn from experience.
- An AAR may be used to answer four major questions:
 - What was expected to happen?
 - What actually occurred?
 - What went well and why?
 - What can be improved and how?

CONTRACTOR EVALUATIONS

Prime contractors, along with their subcontractors, are evaluated by IICs, and those evaluations recorded in ECMS at project completion. Evaluations should be performed immediately after the completion of work for subcontractors, and after Physical Work Complete (PWC) and submission of all required project documentation for prime contractors. Services and DBE Suppliers are not evaluated. Approved Subcontractor Requests, less any services and DBE suppliers, should yield the number of required subcontractor evaluations to be performed. If a subcontractor was submitted and approved in ECMS, but never worked on the project, contact the DLCCA or Finals Unit Supervisor to have that subcontractor removed from the ECMS Subcontractor Requests page.

Evaluations should be completed as soon as practical. For projects with durations lasting more than 18 months, a midterm evaluation must be completed for the prime contractor. Final Prime Contractor Evaluations cannot be submitted until after final DBE payments have been submitted and approved. Evaluations remain in draft status until final DBE payments have been submitted and approved.

ACE/Ms should conduct objective reviews of their IICs' evaluations for prime and subcontractors. Occasionally, IICs will allow their emotions to influence evaluations; especially if personality conflicts with a contractor's representatives emerged during the project. Be sure to consider the quality of final products when writing and reviewing evaluations.

ACE/Ms asking their field staff to evaluate contractors when IICs spend more time with contractors is difficult. IICs are often unaware of the logistics and interactions with contractors' home office staff, which may be very different than relationships found on projects. Conversely, ACE/Ms should avoid a slanted review if there was limited cooperation with a contractors' home office staff.

When an IIC has completed their review of a contractor's performance, ECMS notifies ACE/Ms that an evaluation is available for review and disposition. Access to evaluations in ECMS is located in the 'My Work Queue' link on the top

banner, or in the 'Contractor Evaluations' link in the closeout section of a project's home page. Evaluations include several criteria, each of which are to be rated as *exceeds expectations*, *meets expectations*, or *fails to meet expectations*. For subcontractor evaluations, if any criterion is rated as *fails to meet expectations*, the evaluation is routed to the ADE-C for review. Additional approval from an ADE-C is also required for any rating below an overall 70% or above a 95% overall rating. If contractors disagree with evaluations, those evaluations are routed back to the ADE-C for review and disposition. ADE-Cs may override prime contractor's objections or return it to the IIC for reconsideration.

For guidance completing Prime Contractor Evaluations, use those found in [Form CS-4307G, "Contractor's Past Performance Report Guidelines for Evaluations."](#) Refer to [PennDOT Publication, 2, Project Office Manual](#), Section D.3.8.1 for more information and a link to the guidelines.

After their review of evaluations, contractors may request meetings with their evaluators. Be prepared to justify comments with specific examples that influenced evaluations.

QUALITY SURVEY FOR DESIGN ITEMS

The Quality Survey for Design Items was developed to provide construction contractors and PennDOT construction managers a framework for evaluating design plans and items. Quality Surveys are completed by IICs and contractors just prior to final inspections. Quality Survey results, along with project issues and successes, should be discussed at final inspections.

The 'Quality Survey for Design Items' link is under the Closeout section of a project's home page. After IICs complete surveys, they are reviewed by ACE/Ms, followed by an ADE-C, prior to submission to designers. Overall scores from IICs and contractors can be found in ECMS under the project home page, detail information section.

The following suggestions are intended to promote a fair evaluation process and provide an accurate record of designer performance:

- Take the time required to adequately review designer evaluations, as these evaluations are an important tool for monitoring design performance.
- When reviewing evaluations, completely read each rated criteria and comments included by IICs. Comments should be provided for exceptional or poor ratings.
- Evaluate scores given by IICs with respect to your experience with designers and projects. If you disagree with an evaluation, do IIC comments provide an adequate explanation?
- Keep in mind that IICs experience a different level of contact with designers and may have opinions that differ from yours.
- When justified, contact IICs to request additional, specific comments to better justify a particular rating.

After their review of evaluations, designers may request meetings with their evaluators. Be prepared to justify comments with specific examples that influenced evaluations.

FINALIZATION CHECKLIST

Each project in ECMS has a customized 'Finalization Checklist' established by a District's Finals Unit Supervisor. Items on the checklists may vary from project to project and District to District, but generally include the following:

1. Date for Final Inspection
2. PWC Date
3. Required Documents Received (RDR) Date
4. Project Acceptance Date
5. Environmental Mitigation Commitments
6. [Form TR-4238A, "District's Letter of Project Materials Certification"](#) - Certified by District Materials Engineer
7. Records Received from Field
8. Verification of Claims
9. Time Extension Requests Resolved
10. Acceptance Certificate
11. Accrued Unbilled Costs (AUC)
12. Notice of Final Quantities (NFQ)
13. FHWA Final Acceptance
14. Final Payment

To allow Finals Unit Supervisors to finalize projects, all checklist items must be complete. Certain checklist items require data input to ECMS by project personnel such as an ACE/M or IIC, or by a Finals Unit Manager/Supervisor. Other checklist fields are auto-populated in ECMS as closeout documents move through ECMS-assigned work queues. More detail on individual checklist items is detailed in the following sections. Detailed information, including screen shots, on project finalization may be found in the ECMS Wave 5 Construction Manual, Chapter 19.

PROJECT INFORMATION AND DATES

ACE/Ms must verify that project personnel complete the checklist items for which they are responsible. Typically, IICs are responsible for entering dates for Final Inspections and PWC, which correspond to the date that Final Inspection took place and the date in which all physical work associated with the contract was complete, respectively. When PWC dates are entered, projects then move to 'Post-Construction' status.

RDR dates may be entered by project personnel or by the Finals Unit, depending upon District processes. The Project Acceptance date automatically populates in ECMS based upon the later of the PWC date or the RDR date. The RDR date refers to the date that all contractually required certificates and documents are received from the contractor. Interest charges do not accrue for items of final payment that have not been paid due to a lack of required information from the contractor, so accuracy of the RDR date is essential.

The Records Received from Field date is entered by the Finals Unit upon receipt of records from project personnel.

ENVIRONMENTAL COMMITMENTS AND MITIGATION TRACKING SYSTEM (ECMTS) CLOSEOUT

ACE/Ms must verify that IICs and contractors' project managers have signed off on each item listed for Construction Mitigation listed on the project's ECMTS Matrix. Construction Mitigation items on the ECMTS Matrix must be signed and dated by the responsible party as the commitments are met during construction. A link to the ECMTS Matrix can be found on the Project Development Checklist or by following the 'Construction Mitigation' link on the Home Page.

FINAL MATERIALS CERTIFICATION

ACE/Ms are required to sign their District's [Form TR-4238A, "District's Letter of Project Materials Certification."](#) Form TR-4238A is processed within eCAMMS and is generated by a materials engineer/manager after the following conditions are satisfied:

- Receipt of a signed and dated Item Materials checklist indicating method of material acceptance from an IIC.
- Resolution of all material deviations by an approved [Form TR-455, "Disposition of Failed Materials."](#) All Material Deviations and Dispositions are listed on Form TR-4238A.
- QA Reports of material samples or operational reviews which contains a Written Response Required have been answered and accepted by Construction Quality Assurance Section.
- Reconciliation of CID books.

ACE/Ms should coordinate with IICs, District Materials Engineers, ADEs, as well as Municipality Managers, on Federal aid to Municipality projects, for final approval and signatures.

After all necessary signatures have been obtained, ACE/Ms forward completed Forms TR-4238A to their District Finals Unit for upload to the ECMS finalization checklist. Additional information for issuance of Forms TR-4238 can be found in [PennDOT Publication 2, Project Office Manual](#), Section D.3.7.

RECORDS RECEIVED FROM THE FIELD

ACE/Ms coordinate with IICs and their District Finals Unit for the delivery of the records to the Finals Unit. The Finals Unit will need to verify the date the records were received before the Acceptance Certificate is issued. Record Retention dates will auto populate in ECMS once the Project changes to Final Status.

Locally sponsored projects will have project records retained by their sponsor.

Refer to [PennDOT Publication 2, Project Office Manual](#), Section D.2.3-1 for Department policy on records retention.

VERIFICATION OF CLAIMS

The Verification of Claims date is entered into ECMS by the Finals Unit Supervisor after verification by the ACE/Ms that all disputes and claims have been settled, including disputes and claims for either time or money. If no claims are part of the project, a comment is made that there are no pending claims.

TIME EXTENSION REQUESTS RESOLVED

When an entered PWC date occurs chronologically before the current project completion date, the Finals Unit Supervisor will contact ACE/Ms to verify that there are no time issues on the project, and if not, will input a date and populate the comment box under the 'Time Extension Requests Resolved' section of the ECMS finalization checklist.

If the PWC date is after the Current Completion Date and there is a request for time extension, the time extension request must be negotiated and dispositioned. After all time extension requests have been reviewed and dispositioned, and the PWC is on or before the current completion date, ACE/Ms should inform the Finals Unit Supervisor, who will input a date and populate the comment box under the 'Time Extension Requests Resolved' section of the ECMS finalization checklist.

If the PWC date is after the Current Completion Date and there is no request for time extension, Construction Engineering Liquidated Damages in accordance with [PennDOT Publication 408](#), Section 108.07 are calculated by ECMS and attached by adjustment to the next pay estimate. After assessment of Construction Engineering Liquidated Damages, ACE/Ms should inform the Finals Unit Supervisor that time issues have been resolved, who will then input a date and populate the comment box under the 'Time Extension Requests Resolved' section of the ECMS finalization checklist.

ACCEPTANCE CERTIFICATE

Acceptance certificates are completed in ECMS by the Finals Unit. Acceptance certificates can only be created and submitted by a Finals Unit Supervisor, and only after population of required Checklist inputs including Final Inspection date, PWC date, RDR date, and receipt of [Form TR-4238A](#).

Acceptances certificates are routed to IICs, ACE/Ms, and the DE for review, acceptance, or rejection. Many Districts delegate the DE review and approval to an ADE-C. For municipal projects, municipal representatives are also included in the review process. The municipal review occurs after the ACE/M review and before the ADE/DE review. If rejected by any of the reviewers, acceptance certificates revert to Finals Unit Supervisors. If approved, a notification email is sent to the contractor. The email has a link to access the Acceptance Certificate, establishing the date upon which projects are satisfactorily complete and certifying project acceptance. Contractors have no further obligation to the contract after the date of the Acceptance Certificate, except for obligations related to contract warranty periods or continuing liability as described in [PennDOT Publication 408](#), Section 107.16b, "Latent Defects."

Detailed information, including screen shots, on issuing acceptance certificates may be found in the ECMS Wave 5 Construction Manual, Chapter 15.

ACCRUED UNBILLED COSTS

AUC are checked by the Finals Unit prior to issuance of NFQ. Prior to an AUC check, ensuring a contractor has been paid for all contract work, and all disputes and claims have been settled, is important. If the current federal funding is sufficient to cover all contract costs, the Finals Unit will issue a NFQ. If the federal funding is insufficient to cover all contract costs, additional funding must be secured. Work with the Planning and Programing Unit to add funds to the project.

AUC Reports are emailed regularly to ACE/Ms and can also be accessed through ECMS in References/Crystal Enterprise Line/SAP Login.

NOTIFICATION OF FINAL QUANTITIES

The NFQ section of the 'Finalization Checklist' in ECMS contains various items important to finalizing a project. Among these are Verification of Claims, Time Extension Requests Resolution, AUC, and NFQ.

An NFQ cannot be created until the following items have been completed:

- Construction work items will have no available quantities remaining.
- All work orders approved.
- All contract adjustments approved.
- Stored materials adjustments are reconciled.

- All estimates have been processed.
- Verification of Claims checklist item has been completed.

A Finals Unit Supervisor will verify the Current Completion date in ECMS is on or after the PWC date. A Finals Unit Supervisor will then verify that all time extensions have been approved or withdrawn. If a PWC date is after the Current Completion Date, ACE/Ms will be contacted to determine if Liquidated Damages will be assessed or if a time extension will be processed. ACE/Ms will initiate the appropriate action. After resolution, ACE/Ms or a Finals Unit Supervisor will enter a Time Extension Requests Resolved date in ECMS.

Prior to issuing NFQ, a Finals Unit Supervisor must verify that no AUCs remain on the project. After these have been resolved, the Finals Unit Supervisor will enter the AUC Resolution date in the ECMS Project Finalization Checklist.

NFQ provides financial information to contractors such as original contract amount, work order adjustments, final contract amount, liquidated damages, and other withholdings. ECMS also provides an electronic workflow for the review and approval of NFQ.

NFQ is created and submitted by Finals Unit Supervisors and must be approved by an ADE. Contractors then have ten calendar days to approve or reject an NFQ. ADEs are authorized to approve a notification if a contractor does not respond within the ten-day timeframe. The Workflow will note the NFQ as 'No Response', approved by an ADE.

If a notification is rejected by an ADE, a Finals Unit Supervisor is notified by email, and after consultation, a new NFQ must be created and submitted. If a notification is rejected by a contractor, a Finals Unit Supervisor will notify an ACE/M. ACE/Ms should review contractors' exceptions with IICs and decide whether to revise an NFQ or deny contractors' exceptions. Written notification of rejection of exceptions should be issued by a DE.

Contractors have a right to appeal to the Chief, Highway Delivery Division (HDD), within 10 days of a rejection. Notification will then be sent, in writing, from the Chief, HDD, stating that a claim has been approved or rejected. The date that the claim accrued, for purposes of filing claims before the Board of Claims, will be the date of notification in writing sent from the DE of the rejection of a claim.

FHWA FINAL ACCEPTANCE REPORT

On Federal Oversight projects, the FHWA Area Engineer will complete Form FHWA 1446A, "Construction Inspection Report" when a project is complete and generally acceptable as a part of the FHWA routine construction monitoring of Federal Oversight Projects. If findings/observations are noted by the Area Engineer, ensure that all FHWA findings have been resolved. When all findings are resolved, Form FHWA 1446A is transmitted to the Finals Unit Supervisor for upload into the Finalization Checklist.

Form FHWA 1446B, "Final Inspection Report," is generated and routed via ECMS. This report is created by the Finals Unit Supervisor after upload of the final Form FHWA 1446A, and the acceptance of Notice of Final Quantities by the contractor. Form FHWA 1446B is routed electronically to the BOPD, Contract Management Section Chief, and to the FHWA Area Engineer for review and approval. Any additional generated issues or comments will be routed to ACE/Ms for resolution. ACE/Ms shall coordinate approval of a Form FHWA 1446B with the assigned FHWA Area Engineer.

FINAL PAYMENT

Contractors may be entitled to payments of interest on delayed final payments. Interest cannot be accrued before the submission of contractually required certificates and documents. The submission date for required documents with

respect to interest payment eligibility correlates to the ECMS finalization checklist; accurately dated input of fully correct and complete documentation to the finalization checklist is essential.

Interest accrual begins 30 days after all physical work is complete and continues until the contractor is paid. No interest is warranted if payment is not made due to lack of documentation. Finals Unit Supervisors request clarification whether to authorize payment of interest.

PENNDOT PROJECT COLLABORATION CENTER (PPCC) CLOSEOUT PROCEDURES

All documents that reside in PPCC, except for Shared Files, will be programmatically archived into the Enterprise Content Services (ECS) system one year after the project is placed into Final status.

ACE/Ms coordinate with IICs and District PPCC Coordinators to ensure all PPCC submittals are reconciled before the ECMS Finalization Checklist item 'PPCC Submittals Closed and Documents in Shared Files moved to Project Files' can be marked complete.

For Local Projects, a local owner will receive an email prompt to export PPCC files after a project moves to Final Status. After the export is complete, the files are deleted from PPCC since PennDOT is not the responsible party for records retention on these projects.

To assist in the audit trail, as outlined in [PennDOT Publication 2, Project Office Manual](#), Section B.1.2, all reconciled submittals must be adequately identified and cross referenced.

CONSULTANT AGREEMENTS

After all work to be performed by consultants under their agreements is complete and deemed satisfactory in all respects by ACE/Ms, and accepted by PennDOT and the FHWA where applicable, PennDOT will notify consultants in writing of acceptance of the work as fulfilling the agreement, or part of the agreement.

CONSULTANT CLOSEOUT

Within fourteen 14 calendar days of receipt of PennDOT's acceptance of work, prime consultants and subconsultants must provide an invoice flagged 'Final' for each part or work order for which an NTP had been issued. Final invoices may be submitted by the consultant within one month of the previous invoice.

If a last invoice did not include the required flag, consultants must submit a no-cost invoice template flagged 'Final'. This final invoice will trigger the District to:

1. Complete and submit an appropriate Certificate of Completion for federally funded agreements to CMS.
2. Complete final Consultant Evaluations for prime and subconsultants.
3. Arrange for preparing an SAP-8 encumbrance document, which releases any remaining funds from their encumbrance in SAP.
4. Verify that the Project Characteristics are complete.
5. If NTP was given for a part or work order, even if no work was done, consultants still need to submit a 'Final' invoice in order to close-out that agreement.

In some Districts, ACE/Ms are responsible for consultant closeout, while in other Districts, another party such as the Finals Unit or a Consultant Agreement Manager is responsible for consultant close out. At a minimum, ACE/Ms are

typically responsible for participating in the consultant evaluation. A flow chart outlining the procedures for closeout can be found in [PennDOT Publication 93](#), Appendix 4F, "Procedures for Closing Out Electronic Parts/Work Orders."

CONSULTANT EVALUATION

Consulting engineering firms and prime and subconsultants providing construction inspection for PennDOT projects are evaluated at the completion of each project. The weight of each evaluation category is determined and set at the start of work assignments. Project Managers/Supervisors/IICs assign a rating to each evaluation category in ECMS at the completion of work assignments. Evaluations may also be used to complete interim reports when consulting firms are not performing in accordance with the stipulations of their agreements.

PERMIT TERMINATION

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT NOTICE OF TERMINATION (NOT) FORM

PADEP requires the following to be achieved for submission of a [Form DEP# 3800-PM-BCW0229](#), "Notice of Termination..." (PADEP NOT):

- Permanent stabilization of earth disturbance activities.
- Implementation of PCSM BMPs as indicated on an approved PCSM Plan.

After a project has reached substantial completion and DEP stabilization requirements are met, contractors are required to submit a finalized NOT form. A partially completed PADEP NOT form with Sections 1, 2, 4, 6, 7.a, and Appendix A, should be provided to contractors at pre-construction conferences. Contractors should complete Sections 3,4,5 and 8, Appendix B, and Section 4 of the Completeness Review and Field Work Checklist. Record drawings that accurately reflect as-built conditions are required with the submission of the PADEP NOT form.

Section 5, 'Final Certification of Licensed Professional', of the NOT form requires a signature and seal of a contractor's licensed professional present onsite, and responsible for implementing critical stages of the approved PCSM Plan.

Upon receipt of a contractor's complete PADEP NOT Form and its accompanying as-built drawings, complete Section 8, and Section 2 of the NOT Completeness Review and Fieldwork Checklist. Submit the fully executed PADEP NOT form to the CCD by certified mail within 14 calendar days.

Typically, a CCD official will schedule a review of the project to verify permanent stabilization of earth disturbance activities and proper construction of PCSM BMPs prior to issuing written approval of a PADEP NOT. If release is not granted because of contractor related non-compliance issues, provide contractors with results in writing, so that compliance can be achieved.

Until written approval of a PADEP NOT is received, permittees and co-permittees remain responsible for compliance with the permit terms and conditions, including long term operation and maintenance of all PCSM BMPs on project sites. Permit expiration does not relieve permittees and co-permittees of this responsibility; only permit termination will provide such relief.

If there are no cited contractor related compliance issues and the Department does not gain release from the permit for any other reasons, execute and submit [Form DEP# 3800-FM-BCW0271](#), "Co-permittee Liability Release Form" to the CCD no later than 75 calendar days after submitting the fully executed PADEP NOT Form. If contractor related compliance

issues delay the issuance of a PADEP NOT, the 75 calendar-day timeframe starts after all compliance issues are resolved with the CCD.

Note that after receiving the written approval of a PADEP NOT, the Department and contractor are no longer authorized to conduct earth disturbance activities under the reference permit.

POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM)

A PCSM Plan provides construction details for the construction of, as well as operating and long-term maintenance requirements for, newly constructed permanent stormwater facilities. When a project has a PCSM, a licensed professional or a designee shall be present onsite and responsible for critical stages of implementation. The critical stages may include the installation of underground treatment or storage BMPs, structurally engineered BMPs, or other BMPs as deemed appropriate by the CCD. Licensed professionals certify that record drawings accurately reflect as-built conditions with a final certification statement, as provided in Section 5 of the PADEP NOT form.

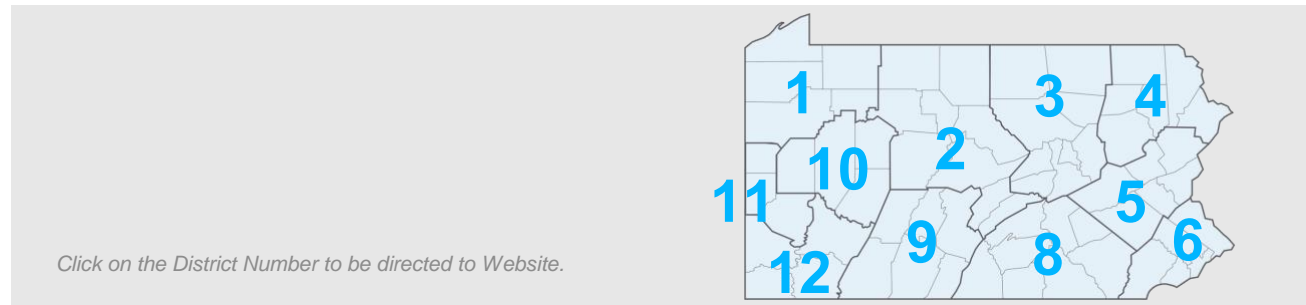
Permittees and co-permittees shall remain responsible for the long-term operation and maintenance of PCSM BMPs unless a different person is identified in Appendix C of the PADEP NOT form and has agreed to long-term operation and maintenance of PCSM BMPs. Coordination with the Maintenance Unit is necessary to determine the responsible person.

A long-term operation and maintenance plan, which is synonymous with the long-term operation and maintenance schedule found in the PCSM Plan, shall be in a narrative format and:

1. List the PCSM BMPs.
2. Provide for routine maintenance activities and an inspection schedule for each PCSM BMP.
3. Provide for repair or replacement of the PCSM BMPs as needed to ensure continual function as designed.
4. Describe how access to the PCSM BMPs will be provided.

WATER OBSTRUCTION PERMIT

ACE/Ms should verify that Water Obstruction and Encroachment Permit Completion Reports are submitted to the appropriate DEP Regional Office or USACE within 10 days of completion of the permit activities. Completion reports are generally an attachment to a permit and can be found on the PDC. Projects specific permits or Exx-xxxx permits require submission of Water Obstruction and Encroachment Permit Completion Report for PADEP, and Notification/Certification of Work Completion/Compliance Form for USACE. Projects with GP-11s do not need to report completion to PADEP, however, the general USACE permit PASPGP-5, requires the submission of a [PASPGP-5 Permit Compliance, Self-Certification Form](#).

MISCELLANEOUS CONSIDERATIONS**DESIGN-BUILD**

Design-build is one of several innovative bidding techniques used by PennDOT to improve efficiency and effectiveness in the project delivery process. In design-build, a single entity is contracted to design and construct a project under one contract. Innovative bidding is outlined in detail in [PennDOT Publication 448, "Innovative Bidding Toolkit."](#) Publication 448 details two methods of design-build award: low bid design-build, and adjusted bid design-build. Adjusted bid design-build award is further categorized as one-step design-build and two-step design-build. Publication 448 provides detailed support by describing each respective process.

Low-bid design-build is the primary form of award used by PennDOT and the only form of award presently supported by ECMS. Adjusted bid design-build requires approval by the Director of BOPD and manual technical support if administered through ECMS. If the adjusted design-build method is used, selection is made by a Technical Review Committee (TRC) and ACE/Ms may be part of the TRC. Information detailing the TRC selection process is included in Publication 448.

Partial design-build projects call for the design-build process applied to specific components or aspects of a project. Partial design-build projects are common and combine traditional unit price items with lump sum items for the design-build portions of the work. Common partial design-build components include ADA ramps, retaining walls, sound barrier walls, superstructure replacement, and maintenance and protection of traffic. Other aspects that may be included for partial design-build are utility coordination, ROW acquisition, permit acquisition, and railroad coordination, but these are typically only included when directly tied to another partial design-build component such as a partial design-build structure.

When the Design Portfolio Manager creates a design-build project in ECMS, an indicator of 'F' is used to indicate full design-build projects and an indicator of 'P' is used to indicate partial design-build projects. Standard Special Provisions for use on design-build projects are included as Index D available on ECMS in the Special Provision Portal under 'Construction Projects/Resources/Special Provisions'.

LOW BID DESIGN-BUILD PROJECTS

Low bid design-build projects include four main components at bid time:

- Conceptual Drawings
- Special Provisions
- Bid Items
- PDC Attachments

Conceptual drawings are typically developed to the 30% design stage (DFV stage) for advisement on low bid design-build projects. Special Provisions must establish the design requirement standards for which the bidder must meet with development of the final design package. Resulting provisions for design-build projects are typically more performance based and less prescriptive compared to provisions prescribed on traditional design-bid-build projects. Limited unit price bid items may be included as needed for use in conjunction with lump sum design-build specifications. The PDC attachments for design-build projects are similar in nature to traditional projects, but additional attachments are necessary due to the stage of design at bid time. In addition to standard PDC items, design-build checklist items may include information related to environmental permitting, ROW acquisition, hydraulic and hydrology reports, conceptual storm water management plans, foundation guidance reports, and survey and alignment electronic files.

ACE/Ms may serve as contractors' points of contact for post award design-build activities, depending upon District resources and preferences. If ACE/Ms are not selected to serve as contractors' points of contact they are typically responsible for processing estimate payments. Payment for low-bid design-build projects is based upon an established schedule of values, which pays a percentage of the overall contract for meeting established milestones during construction. In some instances, estimate processing may begin before a field office has been established based upon the payment schedule for the completion of the design phase. In these instances, ACE/Ms may be responsible for making payments prior to the start of the physical work and should work with Design Managers on progress related to estimate payments.

During the Design-Build process, costs need to be tracked carefully to provide record of where and how funds are being spent. From a funding standpoint, keeping the design phase, ROW phase, utility phase, and others, open during construction is important for allowing additional design related charges, if required, to be billed appropriately.

An ACE/M's role throughout the construction phase of a design-build project is similar to the role of a traditional project, but significantly more coordination with the Design Unit is needed during the post award phase. The amount of coordination required during the design submittal process may vary based upon the Quality Plan Specification included in the bid. Projects may specify a quality plan with QA by peer review, or a quality plan with QA by the Department. With QA by peer review, contractors are responsible for coordinating third party peer reviews. With QA by the Department, PennDOT is responsible for QA review.

PARTIAL DESIGN-BUILD PROJECTS

Partial design-build projects are awarded based upon low-bid. The timeline for submission and review of design-build components should be established early in the project and ACE/Ms should take an active role in tracking the status of the timeline and communicating changes to the Design Unit so PennDOT can be prepared to meet the required review timeframes.

LATENT DEFECTS

Latent defects are those that are not obvious at the time of construction, or that appear over time. Latent defects can occur due to poor workmanship or construction not performed in strict accordance with PennDOT or manufacturer specifications, and are the responsibility of the contractor to correct as described in [PennDOT Publication 408](#), Section 107.16.(b).

ACE/Ms are typically responsible for, or involved in, determining if defects are latent. ACE/Ms should verify that field staff is maintaining adequate information when documenting operations during construction. Field staff should alert foremen or superintendents to work that is performed outside of specifications, and document those conditions in their inspector daily field report. For example, if a contractor encounters unfavorable weather conditions such as rain during an asphalt paving operation, or a change in temperature beyond specified ranges, but decides to proceed with paving operations, foremen or superintendents should be made aware that the contractor will be responsible for latent defects. Field staff should document the exact location in the operation where conditions changed, in addition to stationing that could aid in location identification if the defect occurs after station markings have been removed.

LOCAL PROJECTS

PennDOT oversees many programs that provide funds to local sponsors. These programs are authorized by state and federal legislation. Local sponsors must show a good benefit-cost ratio or win by competitive bid to secure available funding. The District Construction Unit provides construction oversight on local projects when federal or state funds are used.

Construction oversight assignments of local projects are traditionally based on the geographic locations under the auspices of several ACE/Ms or may be assigned to a specific ACE/M. The primary responsibility of ACE/Ms is to assure adequate inspection and documentation of work in progress, the project is being administered in accordance with the Department's policies and procedures, and a quality project is delivered.

COORDINATION WITH LOCAL SPONSORS

Similar to Department projects, coordination of local projects starts at contract execution and continues through contract finalization. Many sponsors do not have procedural knowledge of the Department's policies and procedures and may employ a consulting firm familiar with the Department's policies and procedures to provide construction inspection for the project. However, ACE/Ms will need to spend the time and effort necessary to communicate Department requirements to local sponsors.

Most local projects are let and administered in ECMS, which requires proper documentation and affords the same procedural checks afforded to Department projects. On local projects, construction contracts are between local sponsors and low bid contractors. ECMS has a modified contract execution workflow for local projects.

On locally sponsored Federal-Aid to Municipality projects, local Municipalities review estimates before ACE/Ms complete their reviews. A Local Sponsor without access to ECMS needs to supply a letter requesting reimbursement, which ACE/Ms attach to the estimate before approval. Only the letter requesting reimbursement is used if the ECMS indicator defaulted to Municipality Involvement is 'No'. The majority of Local Sponsor projects will indicate Municipality Involvement as 'Yes'.

ADDITIONAL ACTIVITIES REQUIRED FOR LOCAL PROJECTS

STAFFING LETTER

Prior to project advertisement and with all additional staffing changes, sponsors must request staffing approval, in writing, from an ADE-C. Upon receipt, an ADE-C or a designee must review the request package and approve or disapprove. Even if a project employs inspection staffing through the ECMS Agreements Section, a written request and Department approval is still required for inclusion in project files.

CHECKLIST FOR LOCALLY SPONSORED PROJECTS (CS-118)

ACE/MS should visit projects as frequently as necessary to be aware of current activities, ensure that work is being inspected, and that contracts are administered in accordance with the Department's policies and procedures. During each visit to the project, or at least quarterly, ACE/MS should document, in writing, project status and any outstanding issues. [Form CS-118, "Checklist for the Administration of Locally Sponsored Federal Aid Projects,"](#) has been developed to provide consistent and uniform documentation that oversight is being performed. Form CS-118 must be used when visiting Locally Sponsored Federal Aid Projects.

CONSUMPTION

Local sponsor projects have an additional consumption link within the 'Construct' section and 'Reimbursement Agreement' link under the 'Setup' section of the project's ECMS home page. The 'Reimbursement Agreement' link provides a breakdown of project costs as agreed to in the project's reimbursement agreement, as well as a link to the reimbursement agreement itself. The consumption link provides the current funding breakdown, funds spent to date, and balance of remaining funds. The consumption screen links, through SAP, to all contracts, agreements, and Department costs charged to the project website. ACE/MS should review the federal, state, and local funding indicated on the reimbursement agreement and approved federal authorization.

In ECMS, work orders can be approved that exceed both the reimbursement agreement and the federal authorization Form D-4232. However, ECMS will not allow approval of an estimate that exceeds the federal or state funding limits as indicated on the consumption screen.

Funding considerations should be addressed at the time of work order authorization. If extra or additional work is required to complete a project as planned, submit a request for additional funds to Planning and Programming, which will amend the reimbursement agreement to increase project funds. Both the federal authorization and agreement amendment must be completed prior to reimbursement to the local sponsor. Conversely, if reimbursing extra or additional work is not authorized, a new 100% local fund code may need to be established.

RECORDS RETENTION

On locally sponsored projects, final project records will be retained by project sponsors at a location of their choosing. ACE/MS should confirm that locations and dates are entered in the comment section of 'Records Received from Field' in the ECMS finalization checklist.

Additional detailed information can be found in [PennDOT Publication 740, "Local Project Delivery Manual."](#)

EMERGENCY PROJECTS

Emergency projects may arise from various causes such as observations made during routine bridge inspections, damage caused by natural events such as hurricanes or floods, or incidents involving catastrophic damage to, or failure of, structures.

Information for administering emergency projects is detailed in several PennDOT publications, including:

- Publication 550, “Disaster Recovery Manual”
- Publication 625, “Expedited Post Disaster Project Delivery Manual”
- Publication 220, “Bridge Collapse or Tunnel Failure Board of Inquiry Investigation Teams”

Incident command authority, and procedures for major incidents involving structure failure, are included in Publication 220. In the event of a catastrophic structure failure on an active construction project, ACE/Ms may be required to complete a Bridge Problem Report (BPR). The purpose of a BPR is to provide concise, and timely key information to response team members about an incident as it unfolds. A BPR template and instructions are included in Publication 220, Appendix A. [PennDOT Publication 2, Project Office Manual](#), Section B.4.7-3 details other required notifications in the event of a serious incident within the work zone or project traffic queue.

ACE/Ms may be involved in securing funding or expedited procurement for administering emergency projects.

PROCUREMENT/CONTRACTOR SELECTION

Emergency procurement may be enacted when there is a threat to public health, welfare, or safety, or when circumstances outside the control of the agency create an urgent need that does not allow for the time involved in using the formal competitive bid process.

PennDOT’s policy for emergency procurement requires that a District direct a request for emergency procurement to the Special Assistant to the Deputy Secretary for Highway Administration. A form letter for such requests is available on the P drive at: p:\penndot shared\Highway Administration\Emergency Procurement Procedures.

Letters must include justification, including a description of the situation or event, necessary repairs, estimated cost, proposed funding source, and a District contact for administering the emergency project. This process enables necessary legal clearances for the use of emergency procurement and is separate from the establishment of emergency funding.

Presidential or gubernatorial declarations of emergency are not required for emergency procurement authorization. The Deputy Secretary’s Office will coordinate with the Office of the Chief Counsel and the Highway Construction and Claims Division to determine if requests meet the criteria for emergency procurement and respond with authorization. Verbal authorization may be given to start in advance of written authorization. Upon authorization, Districts determine the method of contractor selection to complete the work.

After authorization for emergency procurement is obtained, comply with Emergency Selection Procedures detailed in PennDOT Publications 625 and 550. Procurement may involve sole source selection, or it may involve incorporating work into a nearby existing project.

EMERGENCY FUNDING

Funding for emergency projects may be available through state or federal funds. Emergency projects resulting from natural disasters or catastrophic failures from an external cause may be eligible for FHWA Emergency Relief (ER) funds, Federal Emergency Management Agency (FEMA) funds, or Pennsylvania Emergency Management Agency (PEMA) funds. Emergency funding typically requires a gubernatorial or presidential declaration of emergency for funding to be released.

STATE FUNDS

Determine if existing District Construction or Maintenance funds are sufficient to cover the cost of repairs. District funds may be available through existing open-end agreements or incident response budgets. If District funds are not sufficient, a request for state funds should be made if the emergency project is not eligible for FHWA or FEMA funds. State funds may be eligible through state discretionary funding or PEMA.

FHWA ER FUNDS

FHWA's ER Manual details guidelines and procedures for requesting FHWA ER funds in the event of a disaster. Federal share percentages for the costs of emergency repairs on federal-aid highways is established by law and can depend upon multiple factors including the nature of a required repair, and when the work is accomplished.

ER Fund allocation distinguishes between emergency repairs and permanent repairs. Emergency repairs are classified as those repairs necessary immediately after the disaster to restore essential traffic, minimize damage, and protect or make safe remaining structures. Permanent repairs are repairs necessary to restore the highway to its pre-disaster condition.

Federal share participation of emergency repairs within the first 180 days after occurrence of a disaster is typically 100%. This time frame may be extended if access to the site is not available to evaluate damages or make repairs. Extensions beyond 180 days must be requested and are evaluated on a case-by-case basis. Federal share after the first 180 days is typically 90% for Interstate highways and 80% for other federal-aid highways.

FHWA ER funds for permanent repairs may be provided through a standard application process or a quick release application process. Applications must come from state agencies, so local requests must go through PennDOT for submission to FHWA. A disaster declaration is required before an application can be submitted. The declaration may be through either a President's declaration under the Stafford Act or a Governor's issuance of a state of emergency. FHWA concurrence is required for a Governor's declaration.

STANDARD APPLICATION PROCESS

Through the standard application process, PennDOT sends a letter of intent to request ER funds. After FHWA acknowledges the letter of intent, cost tracking can begin. Reimbursement is subject to eligibility and final application approval. After FHWA acknowledgement, disaster assessment begins. Disaster assessment includes detailed site inspections to determine the extent of damage. If necessary, a cursory inspection or window inspection may be made prior to the detailed site inspection. The fund request is based upon assessments made during the window and detailed site inspections. A damage summary report is submitted for FHWA review and approval of funds. Applications must be submitted within two years of a disaster or event.

QUICK RELEASE APPLICATION PROCESS

Through the quick release application process, a letter of intent and fund request may be combined in a single document for submittal. A disaster assessment is based upon readily available information such as media reports and aerial survey information. Funds are requested and allocated using a preliminary assessment of damage rather than detailed on-site inspections. Detailed damage inspections are completed at a later date and used to prepare the comprehensive list of projects as opposed to eligibility determination.

FUND ALLOCATION

After allocation, projects using ER funds should be advanced promptly. Permanent repairs must advance to construction by the end of the second fiscal year following the year in which the disaster occurred. If circumstances prevent advancement of a project, a time extension request must be submitted to FHWA to avoid withholding funds. Time extensions must include proper justification and are granted in one-year increments. Justifiable cause of delay for permanent repair or restoration may include need for environmental evaluation, litigation, or complex ROW acquisition.

EXTENDING LIMITS

When expedited procurement is used to add emergency work to an existing contract, extending the project limits of the contract may be necessary. Procedures for a limit of work extension request is detailed in [PennDOT Publication 2, Project Office Manual](#), Section B.1.23-1.

VALUE ENGINEERING (VE)

The Department's specifications permit contractors to submit VE proposals describing cost reduction and containment techniques that may result in direct savings to the Department without reducing functional quality and characteristics of work products. ACE/Ms must determine if contractors' submissions meet the criteria of the specifications and should also research the contract special provisions for items disallowed from the VE process. Requirements for the submission of VE proposals are detailed in [PennDOT Publication 408](#), Section 104.04.

Contractors submit initial Construction VE Concept Proposals to Districts through IICs. ACE/Ms then notify their District VE Coordinators and the BOPD's Quality Assurance Regional Engineer of new concept proposals. On Federal Oversight projects, the regional FHWA Transportation Engineer is also notified. Acceptance or rejection of concept proposals is the responsibility of DEs and their staff. Notification of their decisions must be transmitted to contractors promptly. A copy of notification for approval of a VE Concept Proposal must also be sent to the BOPD. Approval of a VE Concept Proposal authorizes the contractor to prepare and submit a formal Construction VE Proposal, but it does not guarantee acceptance of the Construction VE Proposal submission.

Construction VE Proposals are initially reviewed by a District VE Coordinator and VE team. A District VE team extends its recommendations to the DE. The DE may reject proposals without further concurrence from the BOPD. If approved by the DE, a VE Proposal is submitted to the BOPD for concurrence by the Chief Engineer. On Federal Oversight projects, the FHWA must also approve and concur with VE Proposals before changes are implemented. After accepting or rejecting VE Proposals, the BOPD will forward its decisions to the DE, and the District Construction Unit will notify contractors. If rejected, the DE's notification will include reasons for rejection. When VE Proposals are accepted, ACE/Ms will then have an IIC prepare necessary work orders and submit copies to the BOPD. Details of payment procedures are found in [PennDOT Publication 408](#), Section 110.07.

Detailed information, including a flowchart on the processing of contractors' VE submissions is found in [PennDOT Publication 2, Project Office Manual](#), Section B.3.4-1 to 4-5.

CLEARANCE TRANSMITTAL INVOLVEMENT

Revisions and changes to PennDOT policies, specifications, and procedures are vetted using the Clearance Transmittal (CT) process. Before recommended changes are implemented, proposed changes are sent to the Districts and other Department Units to solicit their views and comments regarding proposed changes. Comments are reviewed and addressed by the originator of the CT. After all internal comments and issues are addressed, there may be a second-round CT that includes industry partners. After successfully addressing issues and comments from both rounds of CTs, a final draft is sent to FHWA for concurrence. After FHWA approval is received, a final version is forwarded to the owning Bureau's Director, Attn: Specification Review Engineer/CT Coordinator, for approval and implementation.

ADE-Cs are the usual recipients of CTs and, in turn, forward transmittals to appropriate staff or assign an ACE/M to solicit and consolidate responses from the remaining individuals within the Construction Unit. The majority of CTs that are received and reviewed by ACE/Ms involve specifications, policies and procedures, proposed Roadway or Bridge Standards, and PennDOT Publication 408 changes. ACE/Ms provide their comments, in turn, and return them to their lead ACE/M or ADE, who returns all consolidated comments by the due date listed on the CT.

The CT process is administered by the Project Schedules, Specifications and Constructability Section of the Contract Management Division of the BOPD. The BOPD's Specification Review Unit holds a regularly scheduled Monthly CT Webinar on the 4th Thursday of the month from 1:00pm to 2:00pm. During the webinar, updates are provided on all current, in-process CTs. For detailed information on the CT process, refer to [PennDOT Publication 693, "Specification Review Manual."](#)

TORT LIABILITY

Torts are civil wrongs recognized by law as grounds for a lawsuit. Since the Commonwealth of Pennsylvania recognized specific liabilities in its doctrine of sovereign immunity in the 1970's, the number of tort litigations has increased dramatically.

To best assure a solid defense against any potential tort litigation, ACE/Ms must insist that their project personnel follow these guidelines:

- Maintain proper documentation for all items of work, especially daily reviews of all MPT signing installed during construction.
- Verify that District Traffic Unit representatives approve and initial all changes to TCPs and any related MPT drawings.
- Verify that contractors are constructing all items in accordance with the plans, specifications, contract, special provisions, and acceptable standards.
- Conduct or attend and document regular project meetings to monitor progress and to discuss project challenges. When consensus is attained, record all resolutions.
- Monitor all change orders for their potential effects on project progress.
- Address all RFIs in a timely manner.
- Maintain communication with Department project personnel, contractors' representatives, and design professionals, to mitigate changes or omissions.
- When applicable, resolve payment disputes between contractors and subcontractors or suppliers.

- Assure that approved falsework drawings are signed by a PE registered in the Commonwealth and that a PE verifies that falsework was installed according to approved drawings.
- Monitor contractors' adherence to all company safety policies, applicable OSHA regulations, and all conditions contained in project permits.

RESPONSIBILITY FOR DAMAGE CLAIMS

[PennDOT Publication 408](#), Section 107.14, requires contractors to indemnify and hold harmless the Department and its employees from all suits, actions, and claims due to injuries or damages sustained by anyone or their property during contractors' performance of work.

If a citizen makes a complaint to Department personnel or its representatives regarding a contractor's work performance, that citizen should be directed to the contractor's job superintendent, the contractor's person in charge on site, or the contractor's tort settlement department.

If a citizen makes a complaint directed toward the Department due to actions by Department personnel or equipment, an IIC should document the complaint in the PSA and contact their ACE/M or the District Tort Coordinator/Risk Management individual for further assistance.

REPORTABLE ACCIDENTS

A reportable accident, as defined in the Vehicle Code, is one that involves injury to, or the death of, any person, or damage to any vehicle involved to the extent that it cannot be driven under its own power, requiring towing. All accidents occurring on the project are to be reported by IICs to:

- District Construction Safety Officer
- District Traffic Engineer
- District Risk Management Engineer
- ACE/M
- Local or State Police.

If a reportable accident occurs in or around the work zone, ACE/Ms must remind their field staff to document an incident by recording photo-images of all temporary and permanent signing, message boards, along with each programmed message, and other traffic control devices leading into the incident area. Also, remind field staff to document the exact locations of all signs, message boards, and other traffic control devices used for the maintenance and protection of traffic. When requested, field staff should also assist police agencies with their investigation of the incident.

Some accidents may result in litigation proceedings. Because litigation can be a long and arduous process potentially lasting several years, proper documentation at the time of incident is essential. When litigation begins, project personnel will be required to participate in the discovery process by giving sworn depositions in the case. The Department's Legal Division will provide guidance during any discovery process. However, Department personnel will be represented by attorneys employed by insurance firms that provided property damage and public liability insurance through project contractors.

Additional information concerning reportable accidents can be found in [PennDOT Publication 2, Project Office Manual](#), Section B.1.17-1.

FHWA COORDINATION

For ACE/Ms, initial contact with an FHWA Transportation Engineer for a specific federal oversight project usually begins during the design phase. Many FHWA Transportation Engineers attend a Final Design Review meeting, conducted before the PS&E submission. They may also attend final design meetings for specific plan review of portions of major projects, such as MPT plans review. FHWA Transportation Engineers may also attend a Department-sponsored constructability review. At those meetings ACE/Ms begin to understand what FHWA Transportation Engineers are expecting for project design and construction.

The FHWA, Pennsylvania Division Office, is located at:

228 Walnut Street, Room 508, Harrisburg, PA 17101-1720

Phone No. (717) 221-3461

Fax No. (717) 221-3494

Email: Pennsylvania.FHWA@fhwa.dot.gov

Website: [Pennsylvania Division](#) | [Federal Highway Administration](#) | [Federal Highway Administration \(dot.gov\)](#)

The Pennsylvania Division Office is divided into these divisions:

- Project Management and Engineering
- Programs and Performance Management
- Planning, Environment, and Finance

Most interaction during construction will be with the Project Management and Engineering division. Area Transportation Engineers are assigned geographically and cover one or more Department Districts. The Area Engineer covers a federal oversight project from Scoping Field View through design, construction, and to completion. The area engineer is a good source of information of project issues, challenges, and decisions made during design.

The Area Engineer's responsibilities include project authorizations, design reviews, PS&E approval, construction reviews, construction contract management, policy review, ER, operations reviews, policy coordination, design and construction costs, and field reviews.

All projects using FHWA funds are subject to applicable federal policies, regulations, and reporting requirements. Projects with federal funding are subdivided into projects with federal oversight or PennDOT oversight. This designation can be found in ECMS on the top of a project's home page. Projects with federal oversight require close coordination with the FHWA's Area Transportation Engineer. The Area Engineer should be invited to the pre-construction conferences as well as all prs and special meetings. They should be consulted on significant project issues, extra work, and time extensions. All work orders and time extensions will have the Area Engineer in the ECMS workflow; without their approval no federal funds will be authorized. Note that an Area Engineer can authorize the use of federal funds but may not obligate additional federal funds. To obligate additional federal funds, approvals must be secured through the Planning and Programing Unit, PMC Approval, or DPMC Approval.

STEWARDSHIP AND OVERSIGHT AGREEMENT

A Stewardship and Oversight Agreement clarifies the stewardship and oversight roles and responsibilities of both the FHWA and PennDOT when implementing the Federal-aid Highway Program (FAHP). These Agreements are intended to result in the efficient and effective management of public funds, and to ensure that the FAHP is delivered according to laws, regulations, policies, and good business practice in Pennsylvania. The agreement defines responsible entities for

approvals of specific actions required through the planning, design, and construction of a project. Projects are divided into these categories:

- Projects on the NHS
- Projects off the NHS
- Projects of Division Interest.

FHWA and PennDOT meet on an annual basis to determine Projects of Division Interest (PoDI), along with the entities responsible for stewardship and oversight activities.

PROCESS REVIEWS

A process review is an assessment of the functionality and effectiveness of particular programs, practices, and procedures used when carrying out an aspect of an agency's normal business operations. Reviews can also help ensure that operational processes are consistent with established standards and expectations, performing at the most effective and efficient level, and that best practices are captured and made available to others at all levels.

An FHWA division office typically performs several process reviews each year in accordance with guidelines from headquarters. Random Districts and then random projects are preselected for review. A team of FHWA Area Engineers and technical experts are assembled to review policies and procedures and perform field audits on selected projects.

During process reviews, teams may also identify weaknesses, as well as best practices, that are noted in the findings. A close-out meeting will be held with ACE/Ms and ADEs to present findings and receive feedback. Review teams will provide a brief overview of the process followed, information considered, and bases for each recommendation.

INACTIVE FEDERAL OBLIGATIONS

Federal policy for allocation of excess or inactive funds may vary based upon current legislative acts governing transportation funding, but typically funds are considered inactive if no charges are made against obligated funds for a period of one year. Excess funds are allocated balances remaining after the project has reached completion. Inactive funds may be subject to de-obligation and cancellation. Projects involving FHWA funds that do not have billings for an extended number of months may require action to retain funding. In some instances, excess funds can be reallocated, subject to federal rules.

APPENDIX – GLOSSARY OF ACRONYMS

AAR	After-Action Review
AC	Advance Construction
ACE/M	Assistant Construction Engineer / Manager
ADE	Assistant District Executive
ADE-C	Assistant District Executive - Construction
AFSCME	American Federation of State, County, and Municipal Employees'
AUC	Accrued Unbilled Costs
BEO	Bureau of Equal Opportunity
BHR	Bureau of Human Resources
BMP	Best Management Practices
BOCM	Bureau of Construction Materials
BOPD	Bureau of Project Delivery
BPR	Bridge Problem Report
CCC	Customer Complaint Center
CCD	County Conservation Districts
CID	Concrete Inspector's Diary
CIS	Component Item Schedule
CMS	Construction Management Section
CPM	Critical Path Method
CRC	District Community Relations Coordinator
CS-118	Checklist for Locally Sponsored Projects
CSC	Consultant Selection Committee
CT	Clearance Transmittal
CUF	Commercially Useful Function
CUP	Contract Unit Price
CWA	Clean Water Act

DBE	Diverse Business Enterprises
DCMM	District Contract Management Manager
DE	District Executive
DLCCA	District Labor Contract Compliance Agent
DPSO	District Project Safety Officer
DSPs	Designated Special Provisions
eCAMMS	electronic Construction and Materials Management System
ECMS	Engineering and Construction Management System
ECMTS	Environmental Commitments and Mitigation Tracking System
ECS	Enterprise Content Services
EEO	Equal Employment Opportunity
ER	Emergency Relief
FAHP	Federal-aid Highway Program
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GFE	Good Faith Effort
GIS	Graphic Information Services
GP11	General Permit for the Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments
HAPD	Highway Administration Performance Dashboard
HDD	Highway Delivery Division
IIC	Inspectors-in-Charge
IRT	Interdisciplinary Review Team
ISP	Internet Service Provider
LTS	Laboratory Test Section
MPT	Maintenance and Protection of Traffic
MBE	Minority Business Enterprise
MOBL	Mobile Analytics

MPMS	Multi-modal Project Management System
NFQ	Notice of Final Quantities
NHS	National Highway System
NOT	Notice of Termination
NPDES	National Pollution Discharge Elimination System Permits
NTP	Notice to Proceed
OJT	On-The-Job Training
PADCED	Pennsylvania Department of Community & Economic Development
PADEP	PA Department of Environmental Protection
PASPGP	Pennsylvania State Programmatic General Permit
PASPGP-5	Pennsylvania State Programmatic General Permit-5
PCSM	Post Construction Stormwater Management Plan
PDC	Project Development Checklist
PDIF	PennDOT Data Integration Facility
PE	Professional Engineer
PEMA	Pennsylvania Emergency Management Agency
PFBC	Pennsylvania Fish and Boat Commission
PMC	District Program Management Committee
PoDI	Project of Division Interest
PPC	Preparedness, Prevention, and Contingency
PPCC	PennDOT Project Collaboration Center
PASPGP	Pennsylvania State Programmatic General Permit
PS&E	Plans, Specifications, and Estimates
PUC	Public Utility Commission
PWC	Physical Work Complete
QA	Quality Assurance

QARS	Quality Assurance Reporting Systems
RDR	Required Document Received
RFI	Requests for Information
ROW	Right-of-Way
RTKL	Pennsylvania's Right to Know Law
RULD	Road User Liquidated Damages
SAP	SAP Enterprise Resource Planning System
SSWP	Site Specific Work Plan
TA	Technical Assistant
TCI	Department Inspector
TCIS	Department Supervisor
TCM	Transportation Construction Manager
TCP	Traffic Control Plan
TIP	Transportation Improvement Plan
TRC	Technical Review Committee
USACE	US Army Corp of Engineers
USCG	US Coast Guard
VE	Value Engineering
VE/ACTT	Value Engineering/Accelerated Construction Technology Transfer
WBE	Woman Business Enterprise
WMP	Waste Management Plan