



Project Management Procedure

SUBJECT: PROJECT DEVELOPMENT BUDGET AND ESTIMATES	NUMBER: PMO-3.6
RESPONSIBILITY: PROJECT DEVELOPMENT AND DELIVERY STAFF	EFFECTIVE DATE: February 11, 2020
	SUPERSEDES: PMO-3.5
STATE LOCATION AND DESIGN ENGINEER APPROVAL <div style="text-align: right; margin-top: 10px;"> <u>Original with signature on file in Project Management Office</u> State Location and Design Engineer </div>	

This procedure outlines the actions required to develop, update, and monitor the project development estimates and budgets. The Project Manager, with close collaboration and support from Team Members, is responsible for the development and management of the estimates and budgets for Preliminary Engineering (PE), Right of Way (RW) and Construction (CN) throughout the entire project life cycle. Approved estimates are shown in the Six Year Improvement Program (SYIP) and are the official budget for the project. Monitoring and updating estimates are critical for the accuracy and management of the SYIP, federal obligation plan, TIP/STIP requirements, DASHBOARD, and industry and public expectations.

GENERAL

Developing Project Cost Estimates

Project estimates are to be developed for PE, RW, and CN phases. The Project Cost Estimating System (PCES) (system) is the application used to document and share project cost estimate information.

The Estimate Workbook shall be utilized to capture and document the base project estimate and contingencies. Instructions for using the Estimate Workbook can be found under the 'Instruction and Descriptions' tab. An Estimate Workbook shall be completed in its entirety, with each of the tabbed workbook pages completed, for all projects in the SYIP.

Project Selection and Allocations

Projects are identified and selected through one or more funding programs and prioritization processes specific to each for approval and inclusion in the Six-Year Improvement Program (SYIP). The initial project cost estimate is integral to this process. Once the Commonwealth Transportation Board (CTB) has approved a project for inclusion in the SYIP, a project UPC is established in Project Pool. The initial scope, schedule, budget, and other data quality associated with the UPC is data verified by approval from the District Project Development Engineer (DPDE) AND District Planning and Investment Manager (DPIM) or their approved designees. When a project is established in the SYIP, the CTB allocates funding based on priorities established under one or more funding programs and fund eligibility.

Monitoring Project Budgets and Expenditures

The Project Manager monitors the project budget and expenditures using PCES, Project Pool, Live SYIP, and available project financial health reporting available through Live SYIP Reports. Expenditures are monitored, reviewed and certified quarterly as outlined in Fiscal Division FD -2015-7 Project Expenditure Review Certifications guidance. Project Managers should coordinate closely with District Planning and Investment (PIM) staff to fully satisfy effective project financial management requirements.

Updating Project Cost Estimates

The Project Manager has the authority to update estimates at any time during the project development process. All estimates shall be updated using the Estimate Workbook (PE, RW, and CN), and then uploaded and recommended in PCES-System. Estimates should be updated:

- At each project milestone, such as: Scoping/Preliminary Field Inspection (PFI); Public Hearing/Willingness; Field Inspection; Right of Way; Pre Advertisement Conference and Advertisement;
- When significant changes effecting cost occur between milestones and/or exceed established thresholds;
- As needed for development and/or management of the SYIP, Federal Obligation Plan, and TIP/STIP or as otherwise directed by VDOT Management, and
- As needed to update projects requiring a Financial Plan in accordance with Section 33.2-368 of the Code of Virginia and the FHWA-VDOT Stewardship and Oversight Agreement.

Providing Estimates Prior to Advertisement Submission

The Project Manager must gain approval from the appropriate District Project Development Engineer (DPDE) or District Construction Engineer (DCE) before providing an estimate that differs from the approved estimate in the SYIP to anyone outside of the Department. Current Project Cost Estimates including specific unit prices may be provided to Consultants under contract with VDOT or under contract to a locality on a VDOT project. Project Cost Estimates provided to anyone outside of the Department are compiled using PCES. The Project Manager coordinates responses to requests for PCES information from outside of the Department with the appropriate DPDE, DCE, and Communications Division.

Providing Estimates after Advertisement Submission to Construction Engineer

After submission of plans to the Construction Division for advertisement, any inquiries from outside the Department regarding project estimates developed during the Scoping, Preliminary, Detailed, or Final Design phases are to be referred to the Construction Division's Estimate Engineer. The Engineer's Estimate prepared by the Construction Division for evaluation of bids is not public information and excluded from the provisions of the Freedom of Information Act according Article §2.2-3705.6 of the Code of Virginia.

Locally Administered Projects

Estimates for locally administered projects may be developed by parties other than VDOT. These estimates cannot be changed without the locality's concurrence. For additional information on locally administered projects, refer to the [Locally Administered Projects Manual](#). When estimates for these projects exceed the established budget, Project Coordinators should coordinate with District PIM staff, Local Assistance Division (LAD), and, Infrastructure Investment Division (IID) to determine the appropriate options for identifying additional allocations, or the project may be delayed. The options available to identify additional funding is contingent on the funding program from which the project was selected and/or funded through. At Submission Stage, the Project Coordinator reviews estimates and determines if sufficient funds are available. For RW authorization, CN advertisement, and CN award, project funding is verified to support each milestone in accordance with IIM-IID 1.6.

Authorization of Funds

After the permanent UPC is set up in Project Pool, a job number is established for each project phase. IID (in conjunction with FPMD if the project is federally eligible) authorizes each project phase based on the project schedule and available allocations. Expenditures should not exceed the authorized amount without coordinating with the appropriate Central Office Division and District PIM staff. The Project Manager/Project Coordinator shall monitor accumulated expenditures and if additional funds are needed, the Project Manager/Project Coordinator must update the estimate in PCES, generating an estimate revision, possibly the automated IID-1 (called PD-1 in Pool) and begin the Revision Request process. Additional reviews and approvals may be required when estimate changes exceed thresholds established by the CTB (reference IIM-IID-2.5 and IIM-IID-3.2)

Project Estimate Revisions

Project estimate information is relied upon and used by numerous groups, both inside and outside of VDOT. As a result, estimate revisions are closely monitored and rules have been created regarding submission and approval of these revisions based on project systems and the responsible approvers of projects estimate changes. The District PDE and PIM are to ensure all necessary approvals are obtained prior to entering estimate changes in PCES that would automatically trigger any Revision Request process in Project Pool. It is important to ensure that any estimate entered into PCES is recommended and submitted in the system in order to properly update Project Pool and the Live SYIP.

If updated estimates are entered into the system that adversely impact the scope or scoring factors on SMART SCALE projects or impact funding on SGR projects, the District SMART SCALE Point of Contact and IID should be notified. Additionally, if such estimates are entered after scoping has been completed on a project, a new approved scoping form may be required to support the SMART SCALE project change process in support of CTB Policy on changes to SMART SCALE project scopes.

DETAILS

Developing Project Cost Estimates

The Project Manager should work with the project team to develop cost estimates at designated milestones as required by this document and change management procedures. Tools to use for estimating may include PCES (workbook), the Bristol Estimating Tool, the NOVA Estimating tool, the Staunton Estimating Tool, and AASHTO Preconstruction. Base estimates shall be entered into the Estimate Workbook, which adjusts the base estimates for contingency, the addition of incentives / disincentives, and miscellaneous project costs. The Estimate Worksheet does not calculate Inflation. Substantial documentation shall be included that provides enough detail for an independent review and validation. The project estimate from the Estimate Workbook, without Inflation, should then be manually entered into the SMART Portal or PCES where inflation will be added to the estimate based on the year of advertisement. This Inflation adjusted estimate should then be uploaded and recommended into PCES (system). Estimate Workbook shall be saved in ProjectWise Project Documents.

Additionally, for the purposes of tracking major item costs, the application of contingencies, and historic progression of estimates, the Project Manager will record the estimates and applicable details in the appropriate tab of the Estimate Workbook, and will maintain this document with the project records throughout the life of the project. Updates to the information on the form will occur at the project milestones such as Scoping/Preliminary Field Inspection (PFI), Public Hearing/Willingness, Field Inspection, Right of Way, Pre Advertisement Conference and Advertisement.

Consultants working on projects for VDOT have limited access to PCES and can upload estimates into the 'Pending Approval' section of PCES for the Project Manager's review and approval. The Project Manager reviews and approves the Consultant's pending estimate, uploads and selects the estimate as 'Recommended' for the appropriate milestone stage in PCES.

- The **Initial Estimate** populates automatically in PCES from the Program Estimate entered by the personnel creating a UPC in the Project Pool at Project Initiation and is reviewed and approved by the District Project Development Engineer (PDE) and District PIM, or their approved designees.
- **Scoping/Preliminary Field Inspection (PFI) and Public Hearing Estimates** are developed using PCES. Request and obtain estimates and supporting data from Team Members. Use the [PM-104](#) Form to Request Right of Way Estimates and by means agreed by the project team, or District Standard Operating Procedures, to request estimates from Team Members in other functional areas. The lead design engineer typically compiles the complete estimate and forwards to the Project Manager to upload, select milestone stage using drop-down and recommend. For the Scoping/PFI Estimate, upload, select and recommend the Scoping Estimate in PCES as soon as the Scoping process is complete and the Scoping task in the PWA Project Schedule has actual finish dates. The scoping estimate shall be uploaded into PCES and recommended within ten (10) working days after the Scoping task is complete. This Scoping Estimate then becomes the baseline estimate in the Dashboard. If a scoping estimate is not uploaded and recommended within this timeframe, Dashboard will assign the most recent uploaded and recommended estimate as the scoping estimate.
- **Field Inspection, Right of Way Acquisition, Pre-Advertisement and Final Submission Estimates**
- The option to use AASHTOWare Preconstruction in conjunction with PCES is available in early stages of project development but project estimates must be created in AASHTOWare Preconstruction including the CEI costs no later than the Field Inspection stage. The project manager uses the [PM-104](#) Form to request Right of Way estimates and the Action Item feature in iPM to request estimates from Team Members in other functional areas. The Project Manager then uploads, selects and recommends the AASHTOWare Preconstruction estimate for the project in PCES.
- **Award Estimate** – The Project Manager cannot enter the Award estimate in PCES until the appropriate Award information has been entered into AASHTOWare Preconstruction by Construction Division staff. For projects not in Preconstruction, it is the keying of the actual finish date for Award (Task 84) in PWA schedule. Once entered, the Award Date and Amount automatically populate the appropriate fields in the Project Pool. At this time, the 'Edit' button for the Award Stage Estimate in PCES becomes available. The Project Manager selects Expenditures as the source for the PE phase or uses the manual option to enter a PE estimate based on projected remaining outstanding costs and selects RUMS, PCES or Manual as the source for the RW phase. The Project Manager has the option of selecting 'Award', 'CERS' or 'Manual' for the CN Phase estimate. Selecting 'Award' will populate the CN Phase estimate with the Contract Budget amount shown on the Fund Distribution Sheet. Selecting CERS will populate the CN Phase estimate with the Total Projected Expenditures in CERS. Selecting Manual allows for an estimate to be entered manually. Refer to the [Construction Budget Development and Management Procedure](#) for additional information related to managing the construction project cost.

Monitoring Project Expenditures

Project expenditures should be monitored on a regular basis to ensure project milestone updates and quarterly project financial certification requirements are met using Project Pool, Live SYIP, available financial health reporting in Live SYIP reports, Tableau Certification Reports, Cardinal, and PCES.

- Use the quarterly Tableau Certification Report to verify charges are reasonable, expected and coded correctly in support of the Department's approved Expenditure Certification process.
- Use the Project Snapshot Report or Rollup 3.0 report to identify over expended or over budget projects; coordinate with District PIM staff or IID if assistance or training is required to use these reports.
- Request supporting data from team members to document unusual charges.
- Work with District Program Management Analyst to correct any improper charges based the quarterly expenditure certification process.
- If additional funding for a project is required, project managers should coordinate with District PIM staff, Local Assistance Division, and IID to determine the appropriate options for identifying additional allocations, or the project may be delayed. Additional review and approvals may be required to add funding to a project. Reference IIM-IID -2.5 and IIM-IID-3.2.
- At no time should the Project Manager allow project expenditures to exceed the authorized project allocations or phase estimates. Outdated estimates due to over-expenditure may delay additional phase authorizations or contract award.
- Some estimate updates may be substantial enough to automatically generate an IID-1 (called PD-1 in Pool) Request to Adjust Ad Date/Estimate form and the Revision Request process in Project Pool. This automated feature is governed by the Total Estimate Cost change (all phase estimate changes combined) of \$50,000 or +/- 10%. Any estimate change revision requires approval from both District PDE and PIM. **NOTE: FHWA requires modification of the phase agreement for any phase estimate decrease of \$250,000 or more on federally funded projects.** Coordinate with District PIM staff and FPMD on federal aid projects if this situation occurs. Estimate changes that exceed the thresholds established by the CTB should be approved by the PIM prior to recommending and submission. Reference IIM-IID-2.5.
- Active project phases (phases authorized and open to charges) require the identification of transfer funding regardless of the percentage increase. In general, it is the Board's intent to demonstrate commitment to projects selected for funding in the SYIP by fully funding the projects through construction (reference IIM-IID-3.2). Inactive Phases (Not authorized or open to charges) do not require identification of transfer funds and will be coordinated by IID and District PIM staff in the annual SYIP update based on funding availability, eligibility and priorities. **NOTE: SMART SCALE establishes a prioritization process for transportation projects relative to cost so estimate changes may impact the performance of a project in the prioritization process and whether it receives funding or not.**

- Refer to the Project and Program Financial Management Page for additional information related to the Expenditure Certification process and the Estimate Classification and Accuracy Guide for more information on estimate classification types and accuracy.

TOOLS AND RESOURCES

- [Project Development Process](#)
- SYIP
- Project Pool User's Guide
- PCES and User's Guide
- Introduction to Tableau Workbooks
- FD-2015-7 Project Expenditure Review Certifications
- Project Financial Certification
- Level II Report Page
- Cardinal
- AASHTOWare Preconstruction (PRECON)
- Construction Expenditure Report System CERS
- iPM (Action Items, Reports, MyiPM) and User's Guide
- ProjectWise
- IIM – IID 1.6 Funding Verification for Construction Projects
- IIM – IID 2.5 SYIP Amendments and Fund Transfers
- IIM – IID 3.2 Funding Requirements for Construction Projects
- IIM – IID 4.2 UPC Creation
- IIM – IID 9.1 SMART SCALE Local Funding
- Financial Plan Guidelines
- [Request RW Data \(PM-104\) to request Right of Way Estimates](#)
- [Guide to Local Administration of VDOT Projects](#)
- Project Management Body of Knowledge (PMBOK) - Chapter 7, Project Cost Management.
- [Project Scoping Report Form \(PM-100\)](#)
- [Project Scoping Worksheets](#)
- [Project Change Control Form \(PM-102\)](#)
- [Risk Management Form \(PM-103A and 103B\)](#)
- Estimate Classification and Accuracy Guide
- [Urban Construction and Maintenance Program Guidance Urban Manual](#)
- [Estimate workbook](#)
- [Staunton Estimating tool](#)
- [Bristol Estimating tool](#)