

Schedule and Cost Management

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1. Scope

This process applies to the regular monthly updating of project schedules including actual costs, which incorporates the contractual schedules from Consultants and Specialty Groups. It is based on the output of the schedule development process. This process is for individual projects during Pre-Construction and Right of Way phases. This process is a complement to the Schedule and Cost Management Process Map.

2. Purpose

This document establishes a WSDOT standard methodology for the regular monthly update and maintenance of project schedules including all work in the Pre-Construction and Right of Way phases.

3. Roles and Responsibilities

The identified roles are provided as a guide to assigning the tasks included in the PMRS processes. Each region has the flexibility to delegate the role of Project Manager (and other functions) to the appropriate functional level to meet project and project office needs and to accommodate current and planned organizational structures.

3.1 Project Team

- The project team is comprised of the Project Engineer/Project Manager, the Team Lead/Project Control Specialist, members from the project office, WSDOT Specialty Groups, Consultants (when applicable), and any others that are needed to deliver the project. The Project Team is responsible for working with the Project Engineer/Project Manager in reviewing and updating the project work breakdown structure; schedule logic, constraints and groupings, control accounts; reviewing the baselined schedule/cost and schedule/cost requirements.

3.2 Project Engineer/Project Manager (PE/PM)

- Responsible for development, review and approval of the project schedule that meets the Work Order Authorization (WOA) and milestone expectations and includes all scope required as defined by the Legislature. The PE/PM oversees the review and monthly update of the baselined schedule and cost estimate, verifies the appropriate structure and level of detail and ensures that all Project Team members have input

and endorse the schedule as required by the Project Management Online Guide.

3.3 Team Lead/Project Control Specialist

- Overall schedule updating.
- Ensures the schedule and cost analysis is complete.
- Updates the schedule and issues official monthly schedule report
- Request monthly schedule updates.
- Reviews schedule updates from Project Engineering/Management, Specialty Groups and Consultants.
- Continuously communicates with the Project Team regarding schedule and cost updates, issues, changes and reporting.
- Conducts schedule analysis and resolves schedule issues.
- Conducts cost analysis and revises (as needed) aging and resource plans
- Prepares draft project schedule and cost report for PE/PM approval.

3.4 WSDOT Specialty Group

- Provides monthly schedule and cost updates as required.
- Works with Team Lead/Project Control Specialist to resolve schedule and cost issues.

3.5 Consultants

- Provides monthly schedule and cost updates as required.
- Works with Team Lead/Project Control Specialist to resolve schedule and cost issues.

4. Schedule and Cost Management Process Steps

The following process steps are taken from the Schedule and Cost Management Process Map. The sub-numbers listed below correspond to the numbered activities on the process map. For example, item 4.1 corresponds to activity 1 on the process map.

4.1 Request Monthly Schedule and Cost Update

Team Lead/Project Control Specialist:

- Schedule and cost updates are required at a minimum, every month, at the assigned cut-off date. Schedule cut-off date (data date) must be consistent with financial system monthly cut-off date(s). Data date is set to the first of each month.
- As early as possible, inform the project team of upcoming cut-off and ensures that the information is received.
- The purpose of this request is to ensure that there is communication on changes to the schedule and cost and those justifications are clear and appropriate.

4.2 Complete Monthly Schedule and Cost Update

Status includes start dates, actual or expected finish dates, remaining durations, percent completes, progress updates, text status updates, actual costs and estimated outstanding expenditures. (See Cost to Date Tracking Process).

4.2.A Complete Monthly Schedule and Cost Update

Team Lead and responsible managers from project staff:

- Update activities for which they are responsible with actual dates and costs, physical progress, remaining duration and activity changes.
- Cost updates include updates to the roles/resources or expenses depending on how project was setup in the Initial Schedule Development Process.
- Complete the updates in PMRS tools for the active activities.
- Role loaded activities are reviewed for work assigned by role and time remaining
- Responsible managers may also request the addition or deletion of activities or logic changes.

4.2.B Complete Monthly Schedule and Cost Update

Consultants:

- Update activities for which they are responsible with actual dates and costs (if required), physical progress, remaining duration and activity changes.
- Complete the updates in PMRS tools for the active activities using external access to WSDOT network if consultant is not working in a WSDOT office.
- Role loaded activities are reviewed for work assigned by role and time remaining.
- Responsible managers may also request the addition or deletion of activities or logic changes.

4.2.C Complete Monthly Schedule and Cost Update

Specialty Group:

- Update activities for which they are responsible with actual dates and costs, physical progress, remaining duration and activity changes.
- Cost updates include updates to the roles/resources or expenses depending on how project was setup in the Initial Schedule Development Process.
- Complete the updates in PMRS tools for the active activities.
- Role loaded activities are reviewed for work assigned by role and time remaining
- Responsible managers may also request the addition or deletion of activities or logic changes.

- Deadlines and status information needs are identified in the Internal Scope of Work Agreement, as part of the WSDOT Project Management planning process.

4.3 Monthly Schedule and Cost Update Information

4.3.A Submit Schedule and Cost Update

Team Lead and responsible managers from project staff:

- Submit schedule and cost update to Team Lead/Project Control Specialist for review.
- Responsible managers from the project staff complete the monthly updates and produce a schedule and cost update that indicates the changes and updates requested for documentation purposes. The updated schedule, costs, aging plans and resource plans are printed to PDF and placed manually into the Electronic Content Management (ECM) system.

4.3.B Submit Schedule and Cost Update

Consultant responsible managers:

- Submit schedule and cost update to Team Lead/Project Control Specialist for review.
- The Consultant completes the monthly update and produces a schedule and cost update that indicates the changes and updates requested for documentation purposes. The updated schedule, costs, and aging plans are printed to PDF and placed manually into the ECM.

4.3.C Submit Schedule and Cost Update

Specialty Group responsible managers:

- Submit schedule and cost update to Team Lead/Project Control Specialist for review.
- Responsible managers from the specialty group complete the monthly updates and produce a schedule and cost update that indicates the changes and updates requested for documentation purposes. The updated schedule, costs and aging plans are printed to PDF and placed manually into the ECM.

4.4 Review Updates to Schedule

Team Lead/Project Control Specialist:

- Reviews schedule and cost information submitted by the project team to ensure that the submission is complete and resolves any issues before proceeding.
- The Team Lead/Project Control Specialist reviews the individual schedule and cost updates from the project team, in the PMRS tools.

4.5 Conduct Schedule and Cost Analysis

Team Lead/Project Control Specialist:

- Conducts a schedule and cost analysis on all updated information submitted by the project team to ensure that the submission is complete and resolves any issues before proceeding.
- The focus is on schedule and cost impacts to the scheduled milestone dates, logic errors or activity changes, such as additions or deletions.
- As work is performed, earned value analysis measures technical, schedule and cost parameters against the project performance baseline. See Earned Value Management Guidelines.
- At a minimum, this analysis shall include the following:
 - Compare actual dates and costs against the baseline.
 - Verify that updated schedule and costs meet established requirements.
 - Identify and correct logic errors/open ends.
 - Identify unauthorized changes (coordinate with change management process).
 - Verify actual costs to the project and identify unauthorized charges (coordinate with change management process).
 - Identify and correct duration and progress errors.
 - Update aging plan and resource plan
 - Set new data-date to the first of the month.
 - Compare schedule and cost update to project risk analysis from project management plan and identify potential issues.

4.6 Are There Issues?

Team Lead/Project Control Specialist:

- Conducts a schedule and cost analysis on all updated information submitted by the project team to ensure that the submission is complete and resolves any issues before proceeding.
- The Team Lead/Project Control Specialist determines if there are technical issues or issues regarding schedule or cost impacts.

4.7 Can Issues be Resolved?

Team Lead/Project Control Specialist:

- Determines if schedule or cost issues can be resolved or if change management is needed.

4.8 Identify Schedule Issues to be Resolved

Team Lead/Project Control Specialist:

- Identify schedule and cost issues, if any. The issues may be technical such as open ended logic, out of sequence activities, illogical durations, constraints without explanation, unauthorized charges, etc. They may also be business related issues such as delays, cost overruns, additional resource needs or missing descriptions of changes.

4.9 Resolve Schedule and Cost Problems and Resubmit

Project Engineer/Project Manager/Team Lead/Project Control Specialist:

- The Team Lead / Project Controls Specialist discuss the issues with the PE/PM, project team, specialty groups or consultants as needed to clearly identify and resolve them. Adjustments are made to the monthly updates as a result of the issue resolution discussion and documented.
- Schedule and cost issues are resolved with input from the project team.
- The changes to the updates are printed to PDF and manually put in the ECM.

4.10 Draft Schedule and Cost Update for Approval

Team Lead/Project Control Specialist:

- The Team Lead/Project Control Specialist produces a draft of the final scheduling and cost update from the PMRS tools for review and approval.
- Draft Earned Value reports are produced as required.

4.11 Review Schedule and Cost Update

Project Engineer/Project Manager (PE/PM):

- Analyze the schedule and cost update inputs in the PMRS tools. The focus is on schedule and cost impacts to the scheduled milestone dates, logic errors, unauthorized charges, cost overruns or activity changes, such as additions or deletions.

4.12 Approve Update?

Project Engineer/Manager (PE/PM):

- Determine if the schedule and cost update is acceptable.

4.13 Confirm Risk Assessment

Project Engineer/Manager (PE/PM):

- Use the Project Risk Management Plan to review and identify new risks associated with the project.
- Team lead gathers input from specialty groups and consultants and assesses the project's risks.
- It is optional to use the functionality built into the PMRS tools to identify and manage risks, but the requirement is to follow Risk Management Plan guidance in the Project Management Online Guide.
- This step is a confirmation of the projects initial risk assessment based upon schedule and cost input information.
- Determine if change management is required as a result of risk assessment

4.14 Issue Official Monthly Schedule and Cost Update

Project Engineer/Manager (PE/PM):

- Issue the monthly schedule and cost update from the PMRS tools. The report is stored in the ECM as a PDF.
- Earned value reports are produced as required.

4.15 Change Management Needed

Project Engineer/Manager (PE/PM):

- Determine if change management is required as a result of schedule or cost updates.

4.16 Perform Risk Assessment

Project Engineer/Manager (PE/PM) and Specialty Groups/Consultants:

- Use the Project Risk Management Plan to identify risks associated with the change. Team lead gathers input from specialty groups and consultants and assesses the project's risks.
- It is optional to use the functionality built into the PMRS tools to identify and manage risks, but the requirement is to follow Risk Management Plan guidance in the Project Management Online Guide.
- Determine if change management is required as a result of risk assessment

4.17 Change Management Process

- Determine appropriate thresholds and initiate formal change management processes as required in coordination with the Project Engineer/Project Manager
- See the Project Control and Reporting Manual M 3026.02. (This manual is under revision and will be renamed the Capital Program Development and Management (CPDM) Manual.
- See Internal Scope of Work Agreement Change Management process, as appropriate.
- For Consultant work refer to the Consultant contract and the Consultant Service Procedures Manual.

5. Term

This procedure is effective immediately upon signature and continues in force until modified in writing by the Chief Engineer, or his/her designee.

6. Exemptions

Variance from this process requires the approval of the Chief Engineer, or his/her designee.

7. References

- 7.1 Executive Order Number: E 1032.01 – Project Management, July 1, 2008
- 7.2 Executive Order Number: E 1042.00 – Project Management and Reporting System, July 1, 2008
- 7.3 Project Management Web Portal. Copies of all PMRS policies, processes, procedures and guidance documents are available here: <http://wwwi.wsdot.wa.gov/Projects/PMRS>
- 7.4 Project Control and Reporting Manual M 3026.02. (This manual is under revision and will be renamed the Capital Program Development and Management (CPDM) Manual.
- 7.5 Schedule and Cost Management Process Map
- 7.6 Cost Control / Earned Value Management Process
- 7.7 Progress Reporting Guidelines
- 7.8 Sample Progress Report
- 7.9 Estimated Outstanding Cost Guidelines
- 7.10 Earned Value Guidelines