APPENDIX H IT PROJECT MANAGEMENT HANDBOOK



IT Project Management Handbook

Last Updated: 6/9/16

Version: 4.3

Prepared by: PennDOT IT PMO Team

| Date | Version | Description | Author |
|----------|---------|---|--------------------------------|
| 2/16/10 | 1.0 | Original | PMO |
| 4/29/10 | 1.1 | Added link to Project Governance Committee Kick-Off Checklist See Pg. 12 | Wolowicz |
| 7/29/10 | 1.2 | Added APPENDIX E-Stage Gating | Wolowicz |
| 8/18/10 | 1.3 | Added Project Kick-off in Section 8.1 | Wolowicz |
| 9/22/10 | 1.4 | Added Project Close Checklist and referenced Study/Stage/Project Close Template | Wolowicz |
| 5/11/11 | 1.5 | Updated per ITPP Refresh Project | Wolowicz |
| 2/17/12 | 1.6 | Updated Project closure link | Baranishyn |
| 4/23/12 | 1.7 | Several minor updates per PMO review | Wilson |
| 8/21/12 | 1.8 | Altered Appendix F and Added Appendix G | Wolowicz |
| 2/3/14 | 2.0 | Removed references to "Executive Steering Committee" | Deily |
| 4/25/14 | 3.0 | Updated ITPDD process, made to be consistent with the Project Management Start-Up Checklist | Wolowicz |
| 5/19/14 | 3.1 | Update to remove Appendix F, Make all processes consistent with checklist. Add text as needed. | Wolowicz |
| 6/9/14 | 3.2 | Removed scaling and tailoring, added methodology table and methodology diagrams. | Wolowicz |
| 2/24/15 | 3.3 | Added the need to consuider the IT Architecture Process, Tasks and Duration when developing the WBS | Wolowicz |
| 10/7/15 | 3.4 | Updated references to Clarity and Open Workbench to MS Project Professional and MS Project Online | Deily |
| 12/18/15 | 4.0 | Updated references to the RAID Log | Deily |
| 2/24/16 | 4.1 | Rearrangement of reference to PM Weekly Checklist | Deily |
| 5/12/16 | 4.2 | Updated introduction for use with MVDLS RFQ | Deborah Gerrow (contractor) |
| 6/9/16 | 4.3 | Removed references to Waterfall project delivery methods for use with MVDLS RFQ | Frank S. Nestore (contractor) |

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Overview

MVDLS Project's Use of this Handbook

This handbook addresses project management of PennDOT projects. The MVDLS project will follow an Iterative approach – no Waterfall and no Big Bang deployments.

Also, a Charter document will not be required by the Contractor as part of the Initial Work Package deliverable – the MVDLS Project Charter will be completed prior to the start of the Contractor. The Contractor shall review and update the Charter as needed based on the final Initial Work Package deliverable.

Introduction/ Purpose

This document is intended to provide guidance to Project Managers (PM) who are implementing PennDOT Information Technology (IT) Projects. Based on best practices and lessons learned, this guide provides a time tested project management approach that yields successful results. This is a working document that provides step-by-step guidance and procedure for PennDOT IT-PMs in the performance of their duties.

The overview section will provide background information for understanding PennDOT IT Project development and execution process. The remainder of this handbook will provide specific details for carrying out the IT Project Management tasks.

About this Handbook

This handbook provides specific direction regarding the management of IT Projects at PennDOT. Links and/or references to standard PennDOT templates are provided throughout this document.

<u>Section 1</u> defines the foundational IT project management structures. These include:

- <u>The IT Portfolio Process</u> (the process flow of how projects are identified, approved, executed and closed)
- The Project Management Office (PMO)
- <u>PennDOT Project Management Methodology</u>
- Project Plan Work Breakdown Structure (WBS) Tools
- Work Plans and Projects

Section 2 focuses on Project Initiation

- Project Charter
- <u>Project Governance</u>
- Selecting Project Management Methodology

Section 3 focuses on Project Execution

- Detailed Project Planning
- Project Execution
- Project Monitoring and Control
- After Action Review
- Project Closure

Approved Document Templates described in the handbook are available on the PennDOT IT PMO SharePoint Site at https://spportal.dot.pa.gov under Administration/PMO. Links to these templates are also provided in the Related Documents/Templates table that follows each section. Document Templates that are not yet approved are listed in the Related Documents/Templates table but are not presented as links. Contact the PMO for access.



How to use this Handbook

This handbook is designed to reflect the *The PennDOT IT Project Development to Delivery Process* (See Fig. 1, Page 7) and is intended to be a project managers' companion for the initation and execution of IT projects at PennDOT. Section 1 describes the foundational project management structures that create order and consistency and help drive project success. Section 2 defines the steps and processes for project initiation. Section 3 describes the processes for monitoring and controlling project execution.

This handbook was produced by the **PennDOT IT Project Management Office (PMO)**. If you have questions concerning its content or use, or for help with any of the tasks or tools listed, please contact the PMO at <u>ra-oispmo@state.pa.us</u>

Section 1 - Foundational IT Project Management Structures and Definitions

The IT Portfolio Development to Delivery Process

PennDOT follows a four step process to develop and deliver IT projects, as defined below. The projects are selected and prepared for execution in the first three steps of the process. In the fourth step, the project is executed. The Project Manager is responsible for Project Execution but may also participate in Project Initiation.

IT Portfolio Development – the IT Project Portfolio is defined. The IT needs are collected from all business units and are reviewed for impact on strategic objectives and other projects. Factors such as economies of scale, technology platform, requirements, complexity, cost, and resource needs are taken into account when evaluating new project requests. The requests are either accepted for inclusion in the portfolio or rejected.

Project Definition – business units are informed of the approved IT Portfolio. Projects that require OA/OIT approval are sent to OA/OIT for approval. Approved projects are scheduled.

Project Initiation – the project team is formed and a draft project charter and plan are developed.

Project Execution – the project plan is further refined. Project requirements and potential IT solutions are defined, procurement of products and services are initiated as appropriate and the project is executed (monitored, managed and controlled).

Utilizing this process helps PennDOT ensure that each IT project is part of a strategic investment designed to enhance PennDOT services. The diagram below graphically represents the process.

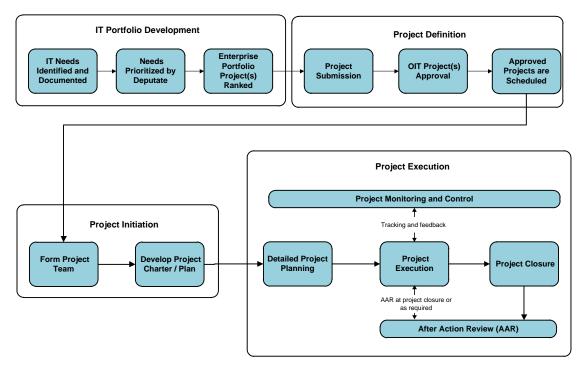


Figure 1: Overview of IT Project Development to Delivery Process



NOTE: The PennDOT IT Project Development to Delivery Process document further defines the above diagram as well as the make-up and responsibilities of the operational teams. Contact the PMO for a current copy of this document.



NOTE: The Project Manager is typically not involved in Project Definition and is assigned to a project in the Project Initiation step.

Project Management Structures and Definitions

The IT Project Management Office (PMO)

The role of the PMO is to lead and provide assistance to project teams and improve IT project performance and results. The PMO ensures that all IT projects meet PennDOT's IT project management requirements, provides day-to-day project management, project management mentoring, and fields questions and supports the use of MS Project Professional and MS Project Online tools. The PMO reviews and approves all IT project and work plans and promotes them to MS Project Professional.

PennDOT IT Project Management Methodologies

A Project Management Methodology defines the manner by which projects are initiated, planned, managed and closed. PennDOT's Information Systems and Technology Office/Bureau of IT Project Development and Delivery has chosen to utilize Iterative methodology for the MVDLS Project. For an overview, please see APPENDIX C - PennDOT IT Project Management Methodologies.

Project Plan/ Work Breakdown Structure Tools (MS Project Professional and MS Project Online)



When conducting a project, PennDOT uses two important, related tools. MS Project Professional is a project management software that is used to develop the Work Breakdown Structure (WBS) and to track progress. MS Project Online (or Project Web App) is a web-based project and portfolio management software suite that works in conjunction with MS Project Professional. This tool provides time tracking, resource management, and progress reporting. The <u>Microsoft Project and Project Web App Desk Reference</u> provides information about these two important project management tools. The documents are available from the PMO for review.

Work Plans and Projects

- Work Plans and Projects <u>are not the same</u>. Properly defining each is key to establishing the appropriate management, governance, tracking, reporting and documentation. It is the Project Manager's responsibility to ensure that the project is properly set up in MS Project Professional and MS Project Online. <u>Work Plans</u> are ongoing sets of tasks. There are four types: Administrative, Maintenance, Routine and Release plans.
- A **Project** is defined by the Project Management Institute as a <u>temporary endeavor</u> (fixed start and end dates) undertaken to develop a <u>defined and unique product</u>, <u>service or result</u>.

IT Project Governance

As shown in Figure 2 at right, there are three basic entities that govern IT projects.

- Project Governance Committee (PGC) is responsible for providing high level guidance, change management approval and resolution of issues that cannot be resolved by the PEMT.
- Project Execution Management
 Team (PEMT) provides consistent day-to-day project management.
- Project Execution Team (PET) carries out the project tasks.

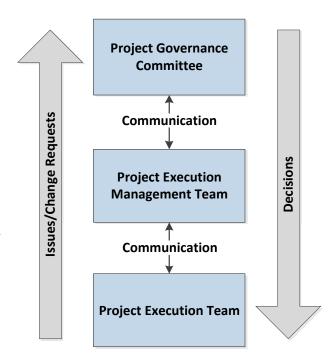


Figure 2: Project Governance Overview Diagram

The roles and responsibilities of these distinct groups are further defined in the <u>Standard IT Project</u> <u>Governance</u> which is available on the PennDOT IT PMO SharePoint Site: <u>spportal.dot.pa.gov</u>.

Project Documentation

Use of SharePoint – a collaborative software tool in use by PennDOT – supports project management by providing a means to store and share documents. All project documentation,

especially documents referenced in this handbook should be retained on a project's SharePoint site. It is recommended to have a project SharePoint site created at a project's inception. SharePoint sites can be requested by completing the SharePoint State Requisition Form on the Enterprise SharePoint Document Management Folder Structure document. For any assistance with the setup of a SharePoint site, please contact the PMO Administrator.

Once a Project has progressed through **IT PORTFOLIO DEVELOPMENT** and **PROJECT DEFINITION** the project is passed to the Project Management Office for **PROJECT INITIATION** and **PROJECT EXECUTION**.

The next two Sections will describe the sub-processes and related activities for **PROJECT INITIATION** and **PROJECT EXECUTION**.

Section 2 – Project Initiation

Project Charter

The Project Charter describes the project's purpose, goals, objectives and scope. Signed by the proper authorities, it servers as authorization for the project. Typically this is drafted during Project Initiation and reviewed/updated as a part of Detailed Project Planning in Project Execution. This ensures that the appropriate detail is present and that all goals, objectives and deliverables are still valid.

| Related Documents/Templates | |
|---------------------------------|--|
| <u>Project Charter Template</u> | |

• See notes at the beginning of this document for MVDLS Contractor requirements relative to the Project Charter.

Project Governance Document

The Project Governance Document provides an overview of the project's governance structure, defines the roles and responsibilities of the various governance teams, and lists individuals assigned for each team.

| Related Documents/ Templates | |
|------------------------------|--|
| Project Governance Document | |

Select Project Management Methodology

Each Project Management Methodology has its pros and cons. The selection of the appropriate methodology is made depending on a variety of factors. PennDOT has chosen an Iterative approach for the MVDLS Project.

| Methodology | Pro | Con | Comments |
|-------------|--|---|--|
| Iterative | • Customer sees working software at the end of each iteration. | • The longer the iteration, the greater the risk. | Breaks the project down into iterations or phases. |



| | Reduces risk of changing requirements | Scope of each iteration is fixed, so schedule delays may result. | Each iteration has its own lifecycle |
|-------|---|--|---|
| Agile | Shorter "timeboxes" minimize risk more than iterative Easier to adapt to changes in requirements Customer is engaged throughout the entire project Builds strong teams | Agile requires a significant culture shift Agile does not always conform with traditional large organizational performance metrics; effort estimations can be difficult | Requires both the business/used community to be involved on a consuistent basis though out the project. Developments teams must shift to daily reviews of work/progress. |

Please see APPENDIX C - PennDOT IT Project Management Methodologies.

Section 3 - Project Execution

Project Execution Tasks

Detailed Project Planning

Detailed Project Planning refines and expands the draft plans developed in Project Initiation. It should be noted that the beginning of Project Execution may overlap with the completion of Project Initiation so strong communication is important during this transition period. During Detailed Project Planning, the following things are accomplished:

- Set up Inital (Basic) Project Professional Project Plan
- SharePoint Web Collaboration Site Setup
- Verify that the Risk, Action Item, Issue and Decision Logs are setup on the SharePoint Site.
- PEMT Kickoff is conducted/ Review Draft Charter
- Develop Draft WBS
- Development of Project Management Plan(s)
- The Project Charter, Project Management Plan and Draft Project Plan/Schedule are reviewed with PEMT
- Update of Charter, Project Management Plan(s) and Baseline Project Plan/Schedule
- Conducting Risk Analysis with PEMT/PET
- PEMT Approval for Charter and Plans

- Manage Project Change (Schedule, Cost and Scope)
- Managed MS Project Plans and Approvals
- Manage Contractual Obligations
- Deliverable Tracking Log/Deliverable Sign Off
- Manage Risks, Acton Items and Issues and Decisions
- Monitoring Ongoing Lessons Learned
- Manage Communications
- Manage Project Change
- Manage Quality
- Manage Procurement Process
- Report Project Status
- Approving Project Deliverables

After Action Review

- Questionnaire
- Conduct AAR Meeting
- Lessons Learned

Project Closure

- Project Closure Documents
- Project Closure Tasks

Detailed Project Planning

Setting Up the Basic MS Project Professional Project Plan

The initial setup of the MS Project Professional project plan is done by the PMO Administrator. Since a detailed project plan is not yet prepared, only basic information needs to be provided to the administrator for setup. You will need to supply the project name and kind of template needed.

Related Documents/ Templates PM Weekly Checklist

SharePoint Web Collaboration Site Setup

You can request a SharePoint Level 1 site, which includes only those functionalities that can be provided without any custom coding. Requests can be made using the SharePoint Requisition form on the Enterprise SharePoint website. Features of a SharePoint Level 1 site include:



- Accessibility by both internal (CWOPA) and external users
- Standard SharePoint communication features including discussion boards, calendars and announcements



- Document versioning
- Standard SharePoint search features including tagging and metadata
- Self-managed security and permissions
- A standard SharePoint template structure, with limited end user customizations
- Standard SharePoint reports
- Standard Workflow templates, with limited end user customizations

Because these sites include only out-of-the-box functionality and are end user managed, they can be created quickly. A SharePoint Level 1 site will be provisioned for you within five business days of providing the names of your primary and backup <u>Single Point of Contacts (SPOCs)</u>.

If necessary, more robust functionality can be provided via a SharePoint Level 2 request.

All PMO Project SharePoint sites will be accessed through the <u>Projects page</u> of the PennDOT Enterprise SharePoint portal. Each PMO Project SharePoint is setup by the SharePoint Administrator with a standard folder structure.

Related Documents/ Templates

Requesting and Setting Up a SharePoint Web Collaboration Site

Setting up the Risk, Action Item, Issue and Decision Logs

The Risk, Action Item, Issue and Decision Logs serve as four individual SharePoint lists (each available as SharePoint list templates) to continually monitor project progress. All four logs listed below are regularly reviewed by the PEMT.

Risks

Managing risk is an <u>ongoing process</u> throughout the project lifecycle. The Project Manager should keep risks current and monitor by <u>watching for risk triggers</u> that indicate a risk may be realized. In addition, <u>risks and their scores should be reviewed by the PEMT once per month and any changes to either the probability or impact should be made (and the risk score adjusted).</u>

Action Items

The Action Item log is also used to track and monitor action items and their status. Action Items should be reviewed regularly by the PEMT to ensure they are being completed in a timely manner.

Issues

Project issues should be reviewed regularly by the PEMT and resolved in a timely manner. Status of issues should be documented on the Issues log. Critical Issues that cannot be resolved by the PEMT must be escalated to the Project Governance Committee in a timely manner.

Decisions

Major decisions made by the team should be documented in the Decisions log. Documenting the decisions helps to keep them visible to the entire team and serves as a reference when past decisions are questioned.

| Related Documents |
|---|
| Action Item, Decision, Issue and Risk Logs Fields Description |
| Action Item, Decision, Issue and Risk Logs Description |
| <u>Project Governance Document</u> |

Project Execution Management Team Kick-Off

One of the early steps in Project Execution is to hold a kick-off meeting with the Project Execution Management Team to ensure all members are engaged in finalizing the *Project Charter*, are aware of the project scope, the deliverables, the schedule, progress reporting requirements and individual roles and responsibilities. To ensure these and other items are discussed and understood, the Project Manager should utilize the Project Execution Management Team Kick-Off Checklist. See <u>APPENDIX F</u> to prepare for and conduct the PEMT kick off meeting.

Project Plan/Work Breakdown Structure (WBS)

The Project Plan /Work Breakdown Structure define the tasks, their sequence and schedule. The first step in detailed project planning is to choose a SDLC and develop a Work Breakdown Structure (WBS) for the project. The Software Development Lifecycle (SDLC) is a strategy and logical process used to develop an information system. This usually includes:

- Initiation
- System Concept Development
- Planning
- Requirements Analysis
- Design
- Development
- Integration and Testing
- Implementation
- Operations and Maintenance

PennDOT IT has moved to utilization of an Iterative and Agile methodologies.

During the development of the WBS, The PM must consider the various processes, tasks and duration of the following:

| Process | Link |
|---------------------------|---|
| IT Infrastructure Process | Infrastructure Architecture Process Diagram |

Project Management Plan(s)

With the input from the project team, the PM develops the comprehensive Project Management Plan. This template includes sections that cover a variety of common project management plans including:

- Communication Plan including Meeting Management and Status Reporting
- Configuration Management Plan
- Requirements Management Plan
- Quality Management Plan
- Document Management Plan
- Procurement Management Plan
- Stakeholder Management Plan
- Organizational Readiness
- Risk Management
- Change Management



NOTE: It is the responsibility of the Project Manager to assess the unique needs of the project. If in his/her judgment the project management plan template does not adequately address communication, requirements, quality, etc., the PM may utilize pre-built plan templates to capture the required additional detail. The templates are available on the SharePoint Site https://spportal.dot.pa.gov. or can be access though the links provided in the descriptions below.

Project Management Plan

This document defines how the project will be managed and combines abbreviated versions of full-size plan templates (i.e. communication plan, risk plan, quality plan, etc.)

Related Documents/ Templates

Project Management Plan

Communication Plan

A communication plan describes how all internal and external communications will be handled, and provides details for disseminating information on project goals, progress, and outcomes. The communications plan should answer these questions:

- What project information will be communicated?
- Who will receive this information?
- When will this communication take place?
- What medium will be used for this communication?
- How often will this communication take place?

Related Documents/ Templates

Communication Plan Template



Configuration Management Plan

Configuration Management is a process by which changes to software code are controlled during the various phases of the project. The *Configuration Management Plan template* is used to define the process and tools that will be used for this purpose.

Related Documents/ Templates

Configuration Management Plan

Requirements Management Plan

The Requirements Management Plan is a standard Microsoft Word template available through Rational Requisite Pro tool. All requirements in Rational Requisite Pro MUST be traced back to a business goal and/or objective as identified in the <u>final approved Project</u> Charter.

NOTE: If the project will not use Rational RequisitePro because of the specific needs/requirements or type of project, contact the PMO for additional guidance and templates for requirements management.

Related Documents/ Templates

Requirements Management Plan template is available as a Microsoft Word template in Rational RequisitePro. Contact Gaurav Vig or Hans Wertz c-gvig@state.pa.us or (717) 705-1193 hawertz@state.pa.us or (717) 705-1390

Quality Management Plan

Quality management involves activities determining specific quality objectives and responsibilities and then implementing them through quality planning, quality assurance and, and quality control processes. The primary quality management objective for all projects is to ensure the project will meet or exceed customer requirements and expectations.

The Quality Management Plan (QMP) addresses two key areas of quality: Quality Assurance and Quality Control.

- Quality Assurance (QA) is the application of planned, systematic quality activities to ensure
 that the project will employ all key PM processes and meet project requirements. The level
 of quality assurance management earmarked for a given project will be proportionate with
 the scope and visibility of the project. The Quality Assurance process will be tailored for
 each project.
- Quality Control is the application of processes to ensure the deliverables of the project
 meet or exceed the requirements. The QMP defines the Quality Control steps that will be
 taken during the project to ensure each deliverable meets or exceeds the requirements set
 forth in the Charter and Requirements documentation.

| Related Documents/ Ten | plates |
|-------------------------|--------|
| Quality Management Plan | |



Document Management Plan

Document Management is an important part of managing, monitoring and evaluating project performance and results. The purpose of the document management plan is to control how project documentation will be stored, retrieved and archived. PennDOT uses SharePoint sites for this purpose. The PMO is responsible for setting up the SharePoint site at the request of the PM.

The SharePoint site, its folder and sub-folder structure, the file naming convention, document templates, version control, backup and retention policy are to be incorporated into the plan. The *Document Management Standard* provides a methodology for the naming and filing of project documents. Documents must be stored where they are accessible to all team members and they must be handled and named in a consistent manner. It is expected that the majority of project documents will exist in an electronic format; however, similar rigor is required for ensuring proper management of hardcopy documents that are part of a project's document library. For guidance, please see the *Project Document Management Standard*.

| Related Documents/ Templates | |
|------------------------------|--|
| Document Management Standard | |

Procurement Management Plan

The procurement management plan identifies the items that must be purchased to carry out the project and the best procurement vehicle for those items. The Project Manager should work with the project team and involve the project Contract Manager as needed to construct the plan.

| Related Documents/ Templates | |
|------------------------------|--|
| Procurement Management Plan | |

Stakeholder Management Plan

Some projects have a large number of stakeholders and the communication to those stakeholders may be complex. In such cases it is best to conduct a detailed stakeholder analysis to ensure all stakeholders are identified and their needs concerning project communication are captured and carried out. The *Stakeholder Management Plan Log* should be used to list the stakeholders, identify and document their needs, and capture (log) each communication to ensure stakeholder needs are being met. *Note:* Smaller projects or projects with limited Stakeholder communication can utilize the Communication Plan for this purpose.

| Related Documents/ Templates |
|---------------------------------|
| Stakeholder Management Plan |
| Communication Plan Template.doc |

<u>Organizational Readiness Plan</u>

Organizational Readiness is the ability of the organization to fulfill obligations with regard to IT projects by <u>providing</u> information technology, personnel, resources, information or

knowledge in a timely manner to make the project a success. In addition to items provided, organizational readiness includes the organizations ability to <u>receive</u>, <u>accept</u> and <u>use</u> new information, tools, capability, software, and process created by the project.



Related Documents/ Templates

Organizational Readiness Template

Risk Analysis

Risk management is the systematic, proactive process of identifying, analyzing, and responding to project risk. To do this, the project manager must work with the PEMT and PET to identify and document risks, weigh their potential impact, identify risk triggers and develop mitigation strategies. The Risk, Action Item, Issue, and Decision Logs provide guidance for the identification/assessment process, as well as a single location where risks can be logged and monitored. Any risk identified in the IT Portfolio Development Process should be incorporated into the Risk Log.

Project Monitoring and Control Tasks

Project Monitoring and Control is a recurring series of activities to ensure project tasks are completed on-time, on-budget and within the scope defined in the Project Charter. In this step, the Project Execution Management Team monitors and evaluates task progress through communication with the Project Execution Team.

| Related Documents/ | Temp | lates |
|--------------------|------|-------|
|--------------------|------|-------|

PM Weekly Checklist

Manage Project Plan (Schedule, Cost, and Scope)

Tracking project schedule, cost and scope is vital to controlling the project and reaching the goals and objectives within the schedule and budget allowed.

- The PM should manage to the plan by meeting regularly with the Project Execution Team (PET) to ascertain the project status.
- The PM should track PET member time entry and Actual Work vs. Work usage. By comparing the actual time (time entered via MS Project Online timesheets) to complete each task against the baseline estimates, the PM is able to identify variations and take action(s) to correct schedule or budget variances. Corrective actions may include:
 - working with PET resources to understand their issues,
 - find and implement solutions to issues, and
 - escalate issues through the governance process as necessary to maintain project baseline projections

Manage Contractual Obligations

The purpose of contract management is to monitor, manage and enforce all contractual obligations. If the project includes a contract, a Contract Manager (CM) is assigned. The PM should meet regularly with the CM to ensure that the provider of goods and services satisfies all contractual

obligations within schedule, within budget, and in a quality manner. It is the PM's responsibility to keep the CM informed of all PEMT and Governance Committee decisions that may affect the contract.

| Related Documents |
|--|
| equest for Proposal (RFP) |
| endor Contract/SOW |
| Completed and Approved Project Charter |
| Other Contractual documents |

Deliverable Tracking Log/ Deliverable Sign Off

The *Project Charter* defines who is responsible for the review and approval of Deliverables. The purpose of the *Deliverable Tracking Log* is to document when the Deliverables were presented to the group responsible for the review, and when formal acceptance of the Deliverable (sign off) was received. The sign off is most often obtained through email voting procedure. This procedure, a feature of MS Outlook, permits the formal documentation of the approval or rejection of the deliverable. For more information on this process please see the link below.

| Related Documents | | | | | |
|--|--|--|--|--|--|
| Completed and Approved Project Charter | | | | | |
| Deliverable Tracking Log | | | | | |
| Email Voting Approval Template | | | | | |

Manage Risks, Action Items, Issues and Decisions

The Risk, Action Item, Issue and Decision Logs are lists to capture project information throughout the entire project lifecycle. PMs should update the Risk, Action Item, Issue and Decisions logs a minimum of once per week and post it to Sharepoint collaboration site for team access and use.

Monitor Ongoing Lessons Learned

As various issues arise and are resolved throughout the project, they may become valuable "lessons learned" for future projects. These should be captured in the PM's Lessons Learned Log. The log is a spreadsheet with multiple tabs for various project phases including: Planning, Execution, Monitoring and Control and Close. It is very important that these lessons be captured for reuse during the project. At project close, the log should be reviewed to ensure there are no duplicates or items that are specific only to that project. Lessons that are applicable to any project should be transposed onto the PMO's Master Lessons Learned Log. This provides a valuable resource for future projects.

| Related Documents |
|---------------------------------|
| PM's Lessons Learned Log |
| PM's Master Lessons Learned Log |

Manage Communications



Regular communication ensures that project team members and stakeholders stay involved and provide valuable assistance in meeting project goals and objectives. Because of the crucial role of timely, consistent communications throughout the project, Project Managers should fully execute the Communications Management Plan and routinely assess its effectiveness.

Related Documents

Communication Plan Template.doc

Manage Project Change

As a project progresses, the PEMT may develop a better understanding of what is needed to produce the desired results. This increased understanding can manifest itself as changes to the project activities, and/or changes to the project's deliverables. Change management process is necessary to ensure a consistent approach to preparing, escalating, and approving change requests and to assure effective control of the project scope, budget and the overall schedule. The change management process includes:

Initiate Change - Requests for changes to the project's scope or specific deliverables may come from many different sources: management, business partners, users, technical resources, or other team members. Each request should be logged using the Change Request Template.

Conduct Impact Analysis – The *Change Request Template* provides a place for the documentation of change impacts. They may include impacts to the cost, schedule, resources, requirements, goals/objectives, deliverables, etc. In addition, the impact analysis should include any additional expertise that may be required, organizational changes, or impacts to the project benefits. Findings of the Impact Analysis should be summarized for Governance Committee Review.

Governance Committee Review – The findings of the Impact analysis should be presented to the Governance Committee through in a succinct and focused manner (e.g., presentation, handout). In addition, a schedule for the changes should be defined, the process by which the change will be carried out, and a clear recommendation or options for action. Bear in mind that the governance committee will be reviewing and considering both the impact of the change as well as the process for carrying out the change.

Approval/Rejection – If the Governance Committee approves the change, the PM updates the Change Log with the agreed action and the decision is noted in the Governance Committee meeting minutes. The PM follows the Approval – Implement Change steps below. If the change request is rejected, the PM notes the decision in the Governance Committee meeting minutes and follows the Rejection – Alter/No Change steps below.

Approval - Implement Change

- 1. Communicate the change(s) and the Governance Committee decision to all stakeholders per the Communication plan.
- 2. Make appropriate schedule and other project plan adjustments and communicate these to affected team members.
- 3. Re-baseline the Project Plan
- 4. Make any required changes to all affected project documents. If the document is a controlled document (e.g. Project Charter), draft the changes and initiate the review and approval process with all appropriate individuals.

5. Communicate the change(s) and the Governance Committee decision to all stakeholders per the Communication plan.



Rejection - Alter/No Change

- 1. Provide additional information about the change request as requested by PGC or;
- 2. Alter/revise the change request for resubmission and consideration by the PGC or;
- 3. Work within the baseline parameters with no change.

Related Documents Standard IT Project Governance Project Change Request Template Project Change Request Log Template.xls Other Project Plan Documents as appropriate including the WBS

Manage Quality

The Project Manager manages the Quality of a project by ensuring that the processes, interim review and final reviews defined in the Quality Management Plan are carried out.

| Related Documents |
|-------------------------|
| Quality Management Plan |
| Corrective Action Log |

Manage Procurement Process

The project manager is responsible for tracking items that must be procured for the project. Items must be procured on or under budget and in a timely manner. To assure success the procurement task should be built into a project schedule. Any procurement that is critical to the project success should also be represented in the Risk log. Any delays in procurement should be entered in the project issue log.

| Related Documents/ Templates |
|------------------------------|
| Procurement Management Plan |

Report Project Status

Status Reporting is an essential part of effective project management. It ensures a continuous dialogue that is vital to the project's success. All projects, regardless of the complexity Level, are subject to executive reporting via Project Profiles which are maintained and updated by the PMO. In addition, the PM must report project status utilizing the Project Status Report Templates in accordance with the Project Governance and Communication Plans.

Status reports are reviewed at PEMT meetings typically held weekly, and at Project Governance Committee meetings held on the schedule defined in the Project Charter.

| Related Documents/Templates | |
|-----------------------------------|--|
| Weekly Status Report Template.doc | |



Project Governance Committee Status Report

Project Governance Committee Meeting Agenda Template.doc

PEMT Meeting Agenda

Approving Project Deliverables

Project Deliverables must be reviewed and approved to ensure they meet the expectations and quality as defined in the Project Charter. Reviewers should be tasked with that responsibility and allotted time for that activity within the Project plan. Final approval shall be granted by the approving body as defined in the Project Charter (e.g., PEMT, PGC).

Related Documents/Templates

Approval Email Template

After Action Review (AAR)

As a part of Project Closure, an After Action Review (AAR) is conducted to capture lessons learned from the project and help Project Managers and project execution teams perform better and reduce issues on future projects.

| Related Documents/Templates |
|-----------------------------|
| AAR Questionnaire |
| AAR Process |
| Lessons Learned Log |
| AAR Meeting Presentation |

During the AAR, the project team reviews the CBA and determines if further assessment and/or reporting is needed.

Study/Stage/Project Closure

Once all the project deliverables of a study, a project stage or a completed project have been completed and accepted, and all contractual obligations have been met, closure tasks may be undertaken. A project closure checklist is used to ensure that all deliverables were completed and approved, that all appropriate documentation has been completed and posted to the SharePoint Site,

and that the Project Plan/WBS is properly closed in the Project Management Tool. Please reference the Study/Stage/Project Closure template for instructions and checklist.

| Related Documents | /Templates |
|--------------------------|------------|
|--------------------------|------------|

Study/Stage/Project Closure

Appendices

APPENDIX A





| AAR | After Action Review | | | | | | | |
|--------|--|--|--|--|--|--|--|--|
| BBSS | Bureau of Business Solutions and Services | | | | | | | |
| BIO | Bureau of Infrastructure and Operations | | | | | | | |
| СоР | Communities of Practice | | | | | | | |
| DGS | Department of General Services | | | | | | | |
| EPMM | Enterprise Project Management Methodology | | | | | | | |
| ISTO | Information Systems and Technology Office | | | | | | | |
| OA | Office of Administration | | | | | | | |
| OA/OIT | Office of Administration/Office for Information Technology | | | | | | | |
| OľT | Office of Information Technology | | | | | | | |
| PEMT | Project Execution Management Team | | | | | | | |
| PET | Project Execution Team | | | | | | | |
| PMO | Project Management Office | | | | | | | |
| PPP | Policy, Planning and Performance Division | | | | | | | |
| PGC | Project Governance Committee | | | | | | | |
| QA | Quality Assurance | | | | | | | |
| QC | Quality Control | | | | | | | |
| RFP | Request for Proposal | | | | | | | |
| RFQ | Request for Quote | | | | | | | |
| RFS | Request for Service | | | | | | | |
| SDLC | Software Development Lifecycle | | | | | | | |

Activity

A logical grouping of project tasks. (See Task and Phase definitions)



Actuals

The cost or effort (e.g., hours) incurred in the performance of tasks. Also, the date's tasks have been started or completed and the date's milestones have been reached.

Action Item

An action item is any task identified through discussion or meeting that moves the project forward in some way. Action items are documented in the Action Item Log where they are assigned to an individual or group with a unique AI number and estimated due date.

After Action Review (AAR)

An activity to assess and evaluate the way a project was performed, so as to learn from the experience and continuously improve project performance.

Baseline

A point of reference. The plan used as the comparison point for project control reporting. There are three baselines in a project—schedule baseline, cost baseline and product (scope) baseline. The combination of these is referred to as the performance measurement baseline.

Change Control

The process of managing scope, schedule and budget changes to the plan. See Scope Change Control.

Change Request

A documented request for a change in scope or other aspects of the plan.

Charter (See Project Charter)

Closing (See Project Closing)

Communication Plan

The Communication plan defines the type and scope of project information that will be shared on a regular basis throughout the project's lifecycle. In addition, it defines the frequency and method of information delivery.

Constraint

A restriction or limitation that influences the project plan. For example, a target date may be a constraint on scheduling. A schedule may be constrained by resource limitations.

Configuration Management

Method for managing the software builds versions during the project lifecycle.

Contract Management

Methods and process for controlling and managing the project contract(s).

Controlling

The process of monitoring, measuring and reporting on progress and taking corrective action to ensure project objectives are met.

Critical Path

The path(s) in a project network that has the longest duration. This represents the series of tasks/activities that determines the earliest completion of the project. There may be more than one critical path and the critical path(s) may change during the project.

Deliverable

Any item produced as the outcome of a project or any part of a project. The project Deliverable is

differentiated from interim work products that result from activities within the project. A deliverable must be tangible and verifiable.



Dependency

A relationship between two or more tasks. A dependency may be logical (see Logical Relationship) or resource based (see Resource dependency).

Document Management

The process of managing all project documentation in an efficient and effective manner to make it readily available to Project stakeholders as defined in the Project Communication plan.

Document Management Standard

A standard designed to maintain document, and file storage consistency on the SharePoint site.

Duration

The length of time required or planned for the execution of a project activity. Measured in calendar time units—days, weeks, months.

Early Start

The earliest time a task can begin. The time at which all the tasks' predecessors have been completed and its resources are planned to be available.

Estimate to Completion (ETC)

The expected effort, cost and/or duration to complete a project or any part of a project. It may be made at any point in the project's life.

Essential Information

The results of the Project Definition, Essential Information includes the final report of any IT Studies that have been conducted, and documentation of the IT solution that has been selected for this project. That is; the technology to be employed, business/user impacts, risks, high level resource requirements, performance metrics, organizational readiness, training estimates, cost estimates, procurement plans, performance requirements. This information is passed to the Project Execution Management Team at the beginning of Project Execution.

Executing

The process of coordinating the people and other resources in the performance of the project or the actual performance of the project.

Float

The amount of time available for a task to slip before it results in a delay of the project end date. It is the difference between the tasks early and late start dates.

Gantt Chart

A bar chart that depicts a schedule of activities and milestones. Generally Phases, Activities and Tasks are listed along the left side of the chart and the time line along the top or bottom. Each is depicted as horizontal bars of a length equivalent to their duration. Gantt Charts may be annotated with dependency relationships and other schedule-related information.

Goal

A desired end result.

Governance Committee (see Project Governance Committee)

Implementation

Phase in the project life cycle in which a product is put into use.

In-house Projects

Projects performed primarily by individuals who are part of the same organization as the client. For

example, a product developed by a manufacturing company's own Engineering Department is an in-house project. If an outside contractor developed the same product, the project would be externally sourced. Note that vendors might be used in in-house projects depending on the degree to which they are responsible.



Initiating (Project)

The process of defining a project and authorizing the Project Manager to expend resources, effort and money for that project.

Issue

Issues are known, identified risks or unforeseen events that have come to pass that negatively impact the success of the project.

IT Portfolio Process

The process by which a project moves from concept to definition to execution and finally to review and results. (See Figure 1 on Page 6 of this document)

Kick-Off Meeting

A meeting at the beginning of the project or at the beginning of a major phase of the project to align participants' understanding of project objectives, procedures and plans, and to begin the team-building and bonding process.

Leveling (See Resource Leveling)

Logical Relationship

A dependency relationship between two or more tasks or between tasks and milestones, such that one cannot start or finish before another has started or finished.

Metrics

Metrics are quantitative measures used to determine if improvement has taken place or to determine if goals and objectives are met.

Milestone

A point in time when a deliverable or set of deliverables is available. It is generally used to denote a significant event such as the completion of a phase of the project or of a set of critical activities. A milestone is an event; it has no duration or effort. It must be preceded by one or more tasks.

Objective

An objective is something to be achieved. In project management, objectives support the project goals by making concrete the deliverables and behavioral outcomes (e.g., improved service, cost savings, etc.).

Phase

A grouping of activities in a project that is required to meet a major milestone by providing a significant deliverable, such as a requirements definition or product design document. A project is broken down into a set of phases for control purposes. The phase is usually the highest level of breakdown in the WBS.



Planning

The process of establishing and maintaining the definition of the scope of a project, the way the project will be performed (procedures and tasks), roles and responsibilities and the time and cost estimates.

Portfolio

A collection of projects and/or programs grouped together to facilitate effective management of that work to meet strategic business objectives. The projects or programs of the portfolio may not necessarily be interdependent or directly related.

Predecessor Task

A task (or activity) that must be started or finished before another task can be performed.

Program

A group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may include elements of related work outside of the scope of the discrete projects in the program.

Project

A temporary endeavor undertaken to create a unique product, service, or result. It has a defined start and end.

Project Charter

A document that describes the project's Purpose, Goals, Objectives and Scope. Signed by the proper authorities, it servers as authorization for the project.

Project Close

The process by which the Project Charter is reviewed to ensure that all goals and objectives have been met; that all deliverables have been accepted and all contractual obligations have been met.

Project Execution

The process of carrying out the project tasks.

Project Execution Management Team (PEMT)

The team responsible for the day-to-day management of the project.

Project Execution Team (PET)

The team (usually technical resources) responsible for carrying out the project tasks.

Project Governance

The process of reviewing project status, providing insight and direction, and resolution of issues as required.

Project Governance Committee

The committee responsible for the oversight of the Project Execution Management Team (PEMT), monitoring of project progress on a regular basis, and the resolution of issues that cannot be resolved at the PEMT level.

Project Definition

Defines the project goals, objectives and all other essential information. (See definition of "essential information")

Project Management

The process of managing a project which requires the application of planning, team-building, communicating, controlling, decision-making and closing skills, principles, tools and techniques.



Project Management Methodology

Defines the manner by which projects are initiated, planned, managed and closed.

Project Management Office (PMO)

An organizational body or entity assigned various responsibilities related to the centralized and coordinated management of those projects under its domain. Responsibilities can range from providing project management support functions to actually being responsible for the direct management of a project.

Project Management Office SharePoint Site – A resource rich website that provides project managers with guidance, templates and process information designed to reduce work and effort, provide consistency and help produce successful IT projects at PennDOT. Please see the PennDOT IT PMO SharePoint Site at https://spportal.dot.pa.gov under Administration.

Project Manager

The person responsible and accountable for managing a project's planning and performance. The single point of accountability for a project.

Project Scaling Process

A process that utilizes a set of cost and complexity factors to yield a rating or "level" for a given project.

Project Level

The result of the project scaling process, a project's "level" is a rating that dictates the amount of documentation, governance and oversight required to adequately monitor, manage, document and govern a project. In general: Level 1= small, Level 2=medium, Level 3=large scale project.

Project Plan

A collection of plans (e.g. communication plan, quality plan, risk plan, etc.) that make up the overall plan for executing the project. This includes the Work Breakdown Structure (WBS), a logical decomposition of all phases, activities and tasks that make up the process by which the project will be carried out.

Project Profile

An executive level Project Status Report developed by the PMO each month.

Project Status Report

A succinct report designed to provide the current status and health of the project. There are three primary templates for this purpose at PennDOT: PEMT meeting template, Project Governance Committee meeting template and Project Profile template.

Quality Assurance (QA)

It is the application of planned, systematic quality activities to ensure that the project will employ all key project management processes and meet project requirements.

Quality Control (QC)

It is the application of processes (such as testing and deliverable reviews) to ensure the deliverables of the project meet or exceed the requirements.

Request for Proposal (RFP)

A document that describes a need for products and/or services and the conditions under which they are to be provided. The purpose of the RFP is to solicit bids or proposals from prospective suppliers.

Requirements

The statement of detailed product objectives that describes the features and functions and performance constraints to be delivered in the product. The requirements provide the basis for accepting the product.

Requirements Phase

Tasks undertaken to acquire the knowledge needed to determine whether or not to go forward with the project, or to fill in knowledge required to adequately size and scope the project, determine the IT solutions, identify risks, or other purposes.



Resource

Any tangible support such as, a person, tool, supply item or facility used in the performance of a project.

Resource Dependency

A dependency between tasks in which the tasks share the same resources and therefore cannot be worked on simultaneously. Resource dependent tasks can be scheduled at the same time but are limited by the availability of the shared resources.

Resource Leveling

Resource leveling is an analysis performed to ensure that resources are not overburdened and that (as much as possible) there are not significant peaks and valleys in the resource schedule.

Resource Loading

The process of assigning resources (people, facilities and equipment) to a project, usually at individual activity level.

Responsibility

The obligation to perform or take care of something, usually with the liability to be accountable for loss or failure. Responsibility may be delegated to others but the delegation does not eliminate the responsibility.

Risk

Generally, an event that would have a negative effect on the project if it were to occur.

Risk Assessment

Part of risk management in which planners identify potential risks and describe them, usually in terms of their symptoms, causes, probability of occurrence and potential impact.

Risk Trigger

An event that signals that a known risk is imminent.

Risk Response

Action that can be taken to address the occurrence of a risk event. Contingency/mitigation plans are collections of risk responses.

Schedule

The project timeline, identifying the dates (absolute or relative to a start date) that project tasks will be started and completed, and identifying when milestones will be reached.

Scope

Scope is defined in terms of two dimensions—product and project. Product scope is the full set of features and functions to be provided as a result of the project. Project scope is the work that has to be done to deliver the product.

Scope Change

Any change in the definition of the project scope. Scope change can result from changes in client needs, discovery of defects or omissions, regulatory changes, etc.

Scope Creep

The unconscious growth of the project scope resulting from uncontrolled changes to requirements.

SharePoint Site

Website used to store project documentation per the Document Management Plan.

Software Development Lifecycle (SDLC)

An SDLC is a strategy and logical process used to develop an information technology system.



Specifications

Detailed statements of project deliverables that result from requirements definition and design. Specifications generally describe the deliverables in terms of appearance, operational constraints and quality attributes. Specifications are the basis for acceptance criteria used in scope verification and quality control.

Stakeholder

Anybody and everybody with a stake in the project - sponsors, users, managers, the general public, etc.

Subject Matter Expert (SME)

An expert in some aspect of the project's content expected to provide input to the project team regarding business, scientific, engineering or other subjects. Input may be in the form of requirements, planning, resolutions to issues and/or review of project results.

Successor

A task or milestone that is logically linked to one or more predecessor tasks.

Task

A piece of work requiring effort, resources and having a concrete outcome. It is the lowest level of work in the Work Breakdown Structure (WBS) hierarchy e.g., a <u>Phase</u> is broken into a set of <u>Activities</u>, and an activity into a set of <u>Tasks</u>.

Task Dependency

A relationship in which a task or milestone relies on other tasks to be performed (completely or partially) before it can be performed. Also referred to as a logical relationship.

Variance

The difference between estimated cost, duration or effort and the actual result of performance. In addition, can be the difference between the initial or baseline product scope and the actual product delivered.

Work Breakdown Structure (WBS)

A hierarchical task list created by decomposing the project based on the breakdown of the product into components and the breakdown of the project process into increasingly detailed tasks.

Work Package

A task at a low level of the Work Breakdown Structure at which project accounting is performed. Usually a week or so in duration and performed by an individual or small work group.

Work Plan

An Administration, Maintenance, Release or Routine work plan. Administration, Maintenance and Routine work plans follow the fiscal year schedule. Release work plans follow a schedule as determined by the business unit and BBSS.

APPENDIX B

Recommendations for Charter Review

Review Charter with Governance Committee with the goal of obtaining Charter Sign Off. Some recommendations for developing the Charter in a group setting include:

- Schedule 2 hours for this meeting. The Charter is <u>the fundamental Project document</u>. It needs to be complete and correct.
- Conduct the meeting in a room with network connectivity and <u>project the Charter on a screen in</u> front of the room.
- Review the Charter <u>making any required changes in real time</u>.
- Once complete, utilize email voting to gather approvals in preparation for CIO signature.
- Present the signed Charter to the CIO for signature and authorization of the Project.





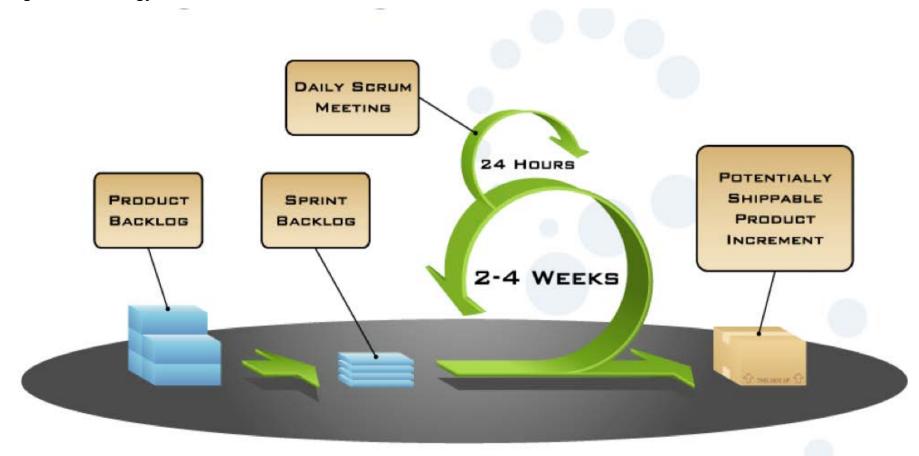
APPENDIX C PennDOT IT Project Management Methodologies

Iterative Methodology

| Phase I | | | | Phase II | | | Phase III | | | | | | | |
|--------------|-------------|-------|---------|------------|--------------|-------------|-----------|---------|------------|--------------|-------------|-------|---------|------------|
| Requirements | Development | Build | Testing | Deployment | Requirements | Development | Build | Testing | Deployment | Requirements | Development | Build | Testing | Deployment |



Agile Methodology



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APPENDIX D

Stage Gating



Sometimes, during the project planning phase, not all information required for determination of project direction is clear or, more information may be required to define the budget, schedule, direction or validate the assumptions made concerning project value or potential Return on Investment (ROI).

To deal with this reality, and control cost and resource expenditure, a technique called stage gating is employed. The stage gate model inserts a single or series of "gates" (decision points) within the project plan. These gates are strategically placed to coincide in time with the collection of data/information that can answer key <u>Strategic Questions</u>.

The placement of the gates within the plan is dependent on the Strategic Questions to be answered and the quantity and quality of the information needed by decision makers. There is no set number of gates for a given project nor is there a template for their placement within a project plan. This technique requires a conscious effort on the part of the PEMT to identify and place the gates properly within the project plan.

Once the gates are established within a project plan, the PEMT treats the project the same as a project without stage gates; that is, the PEMT meets on a regular basis to review project progress, risks, issues, etc. Once a gate is reached, the PEMT prepares a recommendation that includes the strategic question (purpose of the gate) and the findings/data/information/answers. The recommendation is presented to the appropriate governance body and the decision with regard to the <u>Strategic Question</u> is made, effectively passing the project through the gate.



NOTE: At PennDOT, this technique is used only when it is unclear that the project will continue after the stage gate. The information needed to answer the strategic question helps determine IF the project will go forward.



NOTE: If a project will go forward regardless of unknown information, the project is not stage gated.



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Project Execution Management Team (PEMT) Kick-Off Checklist

| 1 | Charter | Review Charter, Goals and Objectives. Make sure each team member understands their roles and responsibilities. | | |
|---|---|---|--|--|
| 2 | Governance document | Review the governance document. Make sure each team member understands how project governance works, and who is on the PEMT team. Make sure each team member understands their roles and responsibilities. | | |
| 3 | Project Management Plan(s) | Describe what is contained in the various Project Management Plan(s) and the purpose of each type of plan. | | |
| 4 | Action Item, Decision, Issue and Risk Log | Review the logs and their purpose. | | |
| 5 | Document Management Plan | Communicate to everyone the importance of maintaining documentation on the SharePoint Site. Distribute the standard project folder structure diagram to ensure everyone knows where various documents are to be housed. Ensure the team understands their obligation to follow the Document Management Standard.doc | | |
| 6 | Status Reporting | Describe how and when the PM will request updates from members of the PEMT on the task progress. Make sure each team member understands how they are to enter time in MS Project Online for each task and how to communicate issues to the PM when they arise. | | |
| 7 | Deliverable Approval Process | Describe the email approval process and how the signators identified in the Project Governance Worksheet are responsible for Deliverable Approval. | | |
| 8 | Change Management | Provide a brief overview of change management process. | | |
| 9 | Project Plan (workbench) | Review Draft Project plan as appropriate. Emphasize Deliverable due dates. | | |



APPENDIX F

Project Governance Committee Meetings Kick-Off Checklist

| Answers the question | | Document Name | In the First PGC Meeting |
|--|---|--------------------------------|--|
| What are we building/buying and why? | 1 | Charter | Review Charter and its Goals and Objectives. Make sure each team member understands the Project deliverables. |
| How will we run this project? Who is on what team and who is responsible for its management, reporting, and decision making? | 2 | Governance Document | Review the governance document. Make sure each team member understands how project governance works, and their responsibility as a part of the PGC to review project status, resolve issues that are escalated to PGC, and help guide the project to success. This document also defines who is on the PEMT and PET Teams. |
| Who needs to be informed about project progress? In what form will we communicate and how often? | 3 | Communication Plan | Review the communication plan. Make sure each team member understands the process, means, and frequency of project reporting and information sharing. (Show sample Monthly Project Report) |
| Where will we store the project information? | 4 | SharePoint Site | Review the SharePoint Site. Ensure each team member understands how to access it and view documents. |
| What is the schedule for this project? When will each of the deliverables be complete? | 5 | Project Schedule (TimeLine) | Review the schedule and when each of the deliverables will be produced. Describe any key dependencies between deliverables. |
| When will PGC meet? Where? How often? How will I be notified? | 6 | PGC Meeting Schedule | Review the PGC meeting schedule so the team understands when and where they will meet and how often. If the team is geographically disbursed, review the use of WebEx. |
| Do the members of the PGC understand this project and their responsibility toward it completely? | 7 | Validation | Ask if there are any questions regarding their responsibility as PGC: Any questions concerning the charter or objective? Any questions regarding the deliverables or schedule? Any questions regarding governance? Or PGC meetings? |