



6.0 PROJECT MANAGEMENT

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Management of government projects, programs, and portfolios—and the related expenditures of public funds—are major, visible areas of interest and concern. Emphasis on performance improvement in government continues to increase steadily, supported by mandates imposed by government laws and public pressure. Despite a growing understanding of the determinants of success, increasing maturity, and a stream of successful programs and projects, project failures continue at an alarming rate.

Project Management is a set of processes, tools, and templates used to effectively plan and manage project work. This section outlines the State of Hawai'i OIMT PMM. It is based upon the Project Management Institute's (PMI) *Project Management Body of Knowledge (PMBOK)*, and it has been enhanced to incorporate State of Hawai'i specific processes. The goal of the PMM is to institute a scalable framework of industry standard best practices to support and promote the successful delivery of projects. Although identified as distinct processes, in practice, the processes overlap and interrelate. Some processes are iterative, repeated, and revised throughout the life of a project. Seasoned project managers acknowledge there are many ways to manage a project. As organizations evolve in maturity level, PMs will be better equipped to determine which processes to utilize and how rigorously to apply these processes to deliver the project.

PMM is typically used in conjunction with a SDLC. The particular SDLC depends upon the standards and the type of project undertaken. Although terminology can differ, the PMM and SDLC methodologies can be easily integrated.

The advantages of establishing sound project management practices are:

- Improves overall project performance
- Increases projects delivered on-time and within budget
- Reduces project risk
- Enhances quality
- Improves inter- and intra-project communication
- Establishes a consistent standard that everyone can follow
- Complements standard System Development Life-Cycle Methodologies (SDLC)
- Promotes common project management terminology

This PMM document will share knowledge and support implementation of the methodology across the State of Hawai'i.

6.1 PURPOSE

The purpose of the PMM is to describe the approach that will be used by the State of Hawai'i to initiate, plan, execute, monitor/control, and close IT projects in alignment with the Program Management Methodology (PgM) and PfM Methodology established by the State of Hawai'i.

The PPM in this document is not intended to replace existing project management programs or processes within departments that have established processes designed for specific project types (e.g., construction). However, PMI's framework, concepts, tools, and techniques can be applied to virtually any project.

6.2 SCOPE

The scope of PMM is to establish a consolidated, consistent, and efficient project management processes that the State of Hawai'i will use to manage IT projects to ensure that projects are well planned and successfully deliver expected outcomes that are within funding, on time, and known risks; demonstrate effective communications, and are aligned with program and portfolio goals and objectives. The PMM defines the processes, tools, and techniques that support the efficient execution of projects from beginning to end and defines the roles and responsibilities of project participants and stakeholders.

The scope of the PPM initiative is to establish a project management process within OIMT that can adapt to non-technology projects and business process improvement initiatives. The project management process is a subordinate process to established programs and portfolios and should ensure alignment.

6.3 PROJECT MANAGEMENT GOALS AND OBJECTIVES

The goal of the PMM is to successfully deliver IT investments, products, services, or results according to a plan developed and executed through effective team planning and leadership.

Objectives for PMM include:

1. Establish a consolidated, consistent, and efficient project management processes to manage projects.
2. Define clear business objectives, understanding options via identifying their benefits, costs, and risks.
3. Increase process transparency and flexibility.
4. Effectively manage government funding.
5. Increase the probability that project outcomes meet user needs and expectations, resolve business problems, and reduce risk/variability.
6. Facilitate better decision making before project start and during project execution.
7. Reduce project risks of delays, cost overruns and failure.
8. Properly identify a project's expected outcomes.
9. Organize and develop a team capable of planning the work to achieve the expected outcomes.
10. Identify and manage risks to project success.
11. Identify expected key performance measures to ensure,

through planning, that the project outcomes will meet quality expectations.

12. Ensure timely and accurate communications to stakeholders and committees.
13. Ensure proper hand-off to operations or SS personnel.
14. Deliver project results to the established expectations.
15. Develop skilled project teams and encourage Project Management competencies.

6.4 PROJECT PERFORMANCE MEASURES

Every project will have performance measures related to the specific product, service, or result of the project and key performance indicators identified by the project sponsor and team. Performance measures may also apply from programs and portfolios. These measures will be planned, monitored, and controlled by the PM and team.

Standard performance measures for all projects shall be the following:

- Planned according to methodology
- Meet planned/re-baselined project end dates
- Meet planned/re-baselined project budget
- Meet strategic goals and performance measures established in the PgM and PFM

6.5 PMM PROCESS

The PMM provides project-planning information in a variety of ways and levels of detail to address the needs, knowledge, and work styles of the many interested parties across the State of Hawai'i. The PMM also sets forth a defined process, outlines required deliverables, and, in conjunction with the Enterprise Architecture and IT Investment Portfolio, provides a rigorous, detailed, and thorough process that should be adopted by the State of Hawai'i. By following the process outlined in the methodology, the departments should be able to take an initial concept to resolve a problem or gap and shepherd it successfully through the planning process. The roadmap that has been laid

out should give the departments the confidence that IT projects should meet all of the regulatory requirements because the guide establishes a comprehensive, consistent, measurable, and repeatable process for IT project planning and management. In other words, this process should improve the success of IT projects in terms of budget, schedule, and outcome.

The PPM establishes clear lines of responsibility, organization, authority, and approval. At each stage of the PPM, the business representatives and the OIMT counterparts complete certain tasks in concert. The partnership must pass through control gates that are established to ensure compliance with the process before proceeding to the next phase. The project team can only move on to the next phase in the process when the control gate has been met successfully and approvals have been received.

The PMM incorporates best practices from the international project management organization, Project Management Institute (PMI), which is recognized globally. The methodology is based on the Project Management Body of Knowledge (PMBOK) and framework. The implementation of the methodology will account for various needs and levels of rigor needed to successfully complete different types of projects in differing environments. The implementation plan will include key performance indicators, alignment with program and project portfolios, and enterprise architecture. One of the primary goals of this effort is to ensure that everyone responsible for project development and solution implementation is aligned, supported, and communicating throughout the process.

The PMI project management framework applies globally and across industry groups. This does not mean that the knowledge, skills, and processes described should always be applied uniformly on all projects. For any given project, the PM, in collaboration with the project team, is always responsible for determining which processes are appropriate and the appropriate degree of rigor for each process.⁹

The proposed PPM consists of five fundamental processes that are used to guide the overall project and individual phases. Applying the processes during the phases of a project life cycle is expected. For the purposes of this document, processes are discussed from the perspective of how they apply to an overall project. The five processes are: Initiation, Planning, Executing, Monitoring and Controlling, and Closing (Figure 17).



Figure 17: The Project Management Processes

⁹ A Guide to the Project Management Body of Knowledge, Fourth Edition

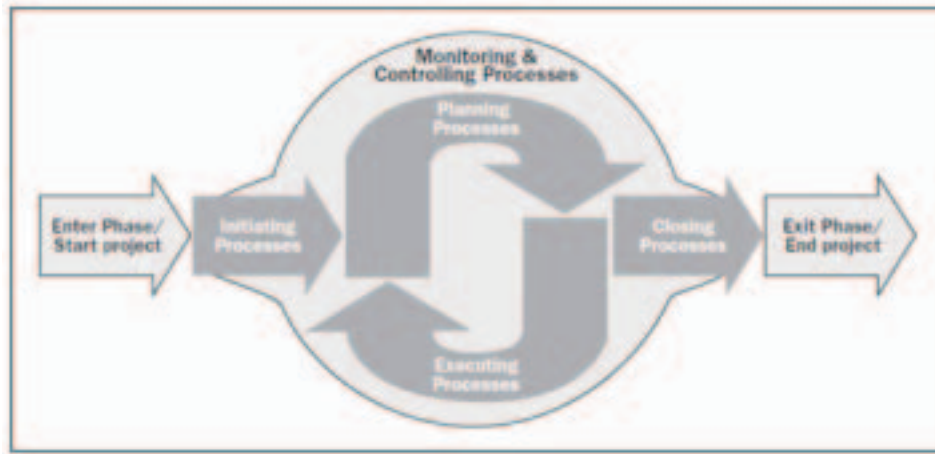


Figure 18: PMBOK Processes Iterative Diagram

The PM processes may be iterative (Figure 18) and apply to various phases of a project's life cycle (e.g., SDLC, ITIL) or may be applied as an overall life cycle as appropriate. Figure 19 illustrates the applicable project processes associated with IT Investment projects as well as the performance monitoring and development functions.

IT Investment Life Cycle ¹	OMB Performance Improvement Cycle ²	Project Management/ Methodology		System Development Life Cycle (SCLC)
(Pre-Select or Analyze)	Architect	Initiation		
		Planning & Design		
		Executing	Monitoring & Controlling	
		Closing		
Select	Invest			
Control	Implement	Initiation		Initiation
		Planning & Design		Concept
				Planning
				Requirements Analysis
		Executing		Design
				Development
Monitoring & Controlling	Test			
Closing		Implementation		
				Operations & Management
Evaluate	Measure, Assess and Improve			Disposition

Figure 19: Project Processes

6.6 OTHER PROJECT MANAGEMENT METHODOLOGIES

The State of Hawai'i will incorporate other project management methodologies, tools, or techniques as appropriate to specific projects, but the primary PMI processes of Initiating, Planning, Executing, Monitoring and Controlling, and Closing shall apply as an overarching Project Management Framework for the State of Hawai'i.

6.7 AGILE DEVELOPMENT

Agile development involves breaking a project into user-identifiable pieces of functionality that can be deployed and actually used, and then producing these pieces approximately every 30 days. Agile development requires that the project team, management, oversight, and governance approve the concept that the project will plan, design, build, test and deploy as it produces the 30-day deliverables. All of these functions need to be embedded with the project team—in real time.

It should also be made clear that Agile development is not ad-hoc, chaotic programming. Instead, it follows a rigorous process for refining and periodically reprioritizing requirements, and for developing and deploying user functionality at regular intervals.

6.8 PMM CHECKPOINTS/APPROVAL GATES

All IT Investment projects are part of the portfolio and subject to review and approval through the OIMT, CIOC, and ELC.

This PMM is designed to address the Information Technology Management Reform Act of 1996 (Clinger-Cohen). From the perspective of the PM, the Act means PMs must be able to manage and report project status in terms of mission, business, and enterprise, as well as the more traditional performance terms.

The three functions of the IT Investment Life Cycle process are to: Select, Control, and Evaluate projects. The initial Select function occurs at the beginning of the life cycle; the Control function is conducted through the project’s development phases, and the Evaluate function is performed after the project transitions to O&M.

- Projects with estimated budgets of less than \$100,000 dollars may be submitted using the T205 process.
- Projects with estimated budget within \$100,000 - \$1,000,000 shall be reviewed by the CIOC.
- Projects with estimated budgets above \$1,000,000 shall be reviewed by the CIOC and then the ELC.

Table 3: ITIL Reviews

Project Budget	Documentation	Select	Control	Evaluate
		Reviewed by	Status Updates	Performance Review
< \$100,000	T205	CIO	As needed	TBD
\$100,000 - \$1,000,000	Project Charter and/or Business Case	CIOC	Quarterly	TBD
>\$1,000,000	Project Charter and/or Business Case Project Plan	CIOC/ELC	Monthly	TBD

6.9 PROJECT STATUS REVIEWS

Once a project has been approved by the CIOC and/or ELC, regular interval updates to the councils shall be provided. These updates will include at minimum, a description of the project, list of top risks and issues, and an overall project status identifier as identified in Table 4.

Table 4: Project Status

Red	x>=10% behind in Scope, Cost, Schedule and Risk
Yellow	5>x>10% behind in Scope, Cost, Schedule and Risk
Green	0>x>5% behind in Scope, Cost, Schedule and Risk
Blue	Ahead of Scope, Cost, Schedule and Risk

Status updates will also include a Risk Register of the highest risks to the project.

Table 5 - Qualitative Risk Analysis

		Probability of Occurrence		
		Low	Medium	High
Severity	High	Yellow	Red	Red
	Med	Green	Yellow	Red
	Low	Green	Green	Yellow

6.10 PROPOSAL

Business case:

- Concept to address business problem
- Stakeholder analysis
- Research and Business Plan
- Alignment to objectives
- Rough Order of Magnitude (ROM) budget
- High-level timeline of project life cycle

6.11 APPROVED PROJECTS

Projects will be approved based on the following criteria:

- Alignment with EA
- Economies of scale
- Value of expected outcomes
- ROI or Service Value
- Risks
- Budget

6.12 COMPLETED PLANNING REVIEW

Projects will be approved based on the following criteria:

- Credibility of project plan
- Portfolio and program resource integration
- Available resources
- Identified risks and contingency plans
- Leadership support

6.13 PMM KNOWLEDGE AREAS

PMI outlines nine specific knowledge areas which are detailed below.

6.13.1 INTEGRATION MANAGEMENT

Project Integration Management includes the processes and activities needed to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups. In the project management context, integration includes characteristics of unification, consolidation, articulation, and integrative actions that are crucial to project completion, successfully managing stakeholder expectations, and meeting requirements. Project Integration Management entails making choices about resource allocation, making trade-offs among competing objectives and alternatives, and managing the interdependencies among the project management Knowledge Areas.¹⁰

Table 6: Integration Management Processes

Project Management Integration	Develop project charter	Develop Project Management Plan	Direct and manage project execution	Monitor and control project work Perform integrated change control	Close project or phase
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6.13.2 SCOPE MANAGEMENT

Project Scope Management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. Managing the project scope is primarily concerned with defining and controlling what is and is not included in the project.

Table 7: Scope Management Processes

Project Time Management	Collect requirements Define Scope Develop WBS	Verify scope Control scope
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¹⁰ A Guide to the Project Management Body of Knowledge, Fourth Edition

6.13.3 TIME MANAGEMENT

Project Time Management includes the processes required to manage timely completion of the project.

Table 8: Time Management Processes

Project Time Management	Define activities Sequence activities Estimate activity resources Develop schedule	Control schedule
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6.13.4 COST MANAGEMENT

Project Cost Management includes the processes involved in estimating, budgeting, and controlling costs so that the project can be completed within the approved budget.

Table 9: Cost Management Processes

Project Cost Management	Estimate costs Determine budget	Control cost
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6.13.5 QUALITY MANAGEMENT

Project Quality Management includes the processes and activities of the performing organization that determines quality policies, objectives, and responsibilities which enable the project to satisfy the needs for which it was undertaken. It implements the quality management system through policy and procedures with continuous process improvement activities conducted throughout as appropriate.

Table 10: Quality Management Processes

Project Quality Management	Plan Quality	Perform quality assurance	Perform quality control
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6.13.6 HUMAN RESOURCES MANAGEMENT

Project Human Resource Management includes the processes that organize, manage, and lead the project team. The project team is comprised of the people with assigned roles and responsibilities for completing the project. The type and number of project team members can change frequently as the project progresses. Project team members may also be referred to as the project's staff. While the specific roles and responsibilities for the project team members are assigned, the involvement of all team members in project planning and decision making can be beneficial. Early involvement and participation of team members adds their expertise during the planning process.

Table 11: Human Resources Management Processes

Project Human Resources Management	Develop HR plan	Acquire project team	Manage project team
		Develop project team	
		Manage project team	

6.13.7 COMMUNICATIONS MANAGEMENT

Project Communications Management includes the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of project information. Project managers spend the majority of their time communication with team members and other project stakeholders, whether they are internal (at all organizational levels) or external to the organization. Effective communication creates a bridge between diverse stakeholders involved in a project, connecting various cultural and organizational backgrounds, different levels of expertise, and various perspectives and interests in the project execution outcome.

Table 12: Communications Management Processes

Project Communications Management	Identify stakeholders	Plan Communications	Distribute information	Report performance
			Manage stakeholder expectations	

6.13.9 RISK MANAGEMENT

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, and monitoring and control on a project. The objectives of Project Risk Management are to increase the probability and impact of positive events, and decrease the probability and impact of negative events in the project.

Table 13: Risk Management Processes

Project Risk Management	Plan risk management	Monitor and control risks
	Identify risks	
	Perform qualitative risk analysis	
	Perform quantitative risk analysis	
	Plan risk responses	

6.13.10 PROCUREMENT MANAGEMENT

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team. The organization can be either the buyer or the seller of the products, services, or results of a project.

Project Procurement Management includes the contract management and the change control processes required to develop and administer contracts or purchase orders issued by authorized project team members.

Project Procurement Management also includes administering any contract issued by an outside organization (the buyer) that is acquiring the project from the performing organization (the seller), and administering contractual obligations placed on the project team by the contract.

Table 14: Procurement Management Processes

Project Procurement Management	Plan procurements	Conduct procurements	Administer procurements	Close procurements
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6.13.12 PROGRAM AND PROJECT ORGANIZATION CHARTS

Programs consist of a group of related projects, subprograms, and program activities that are managed in a coordinated way to obtain benefits not available from managing them individually. The basic organizational structure for OIMT programs is depicted in Figure 20.

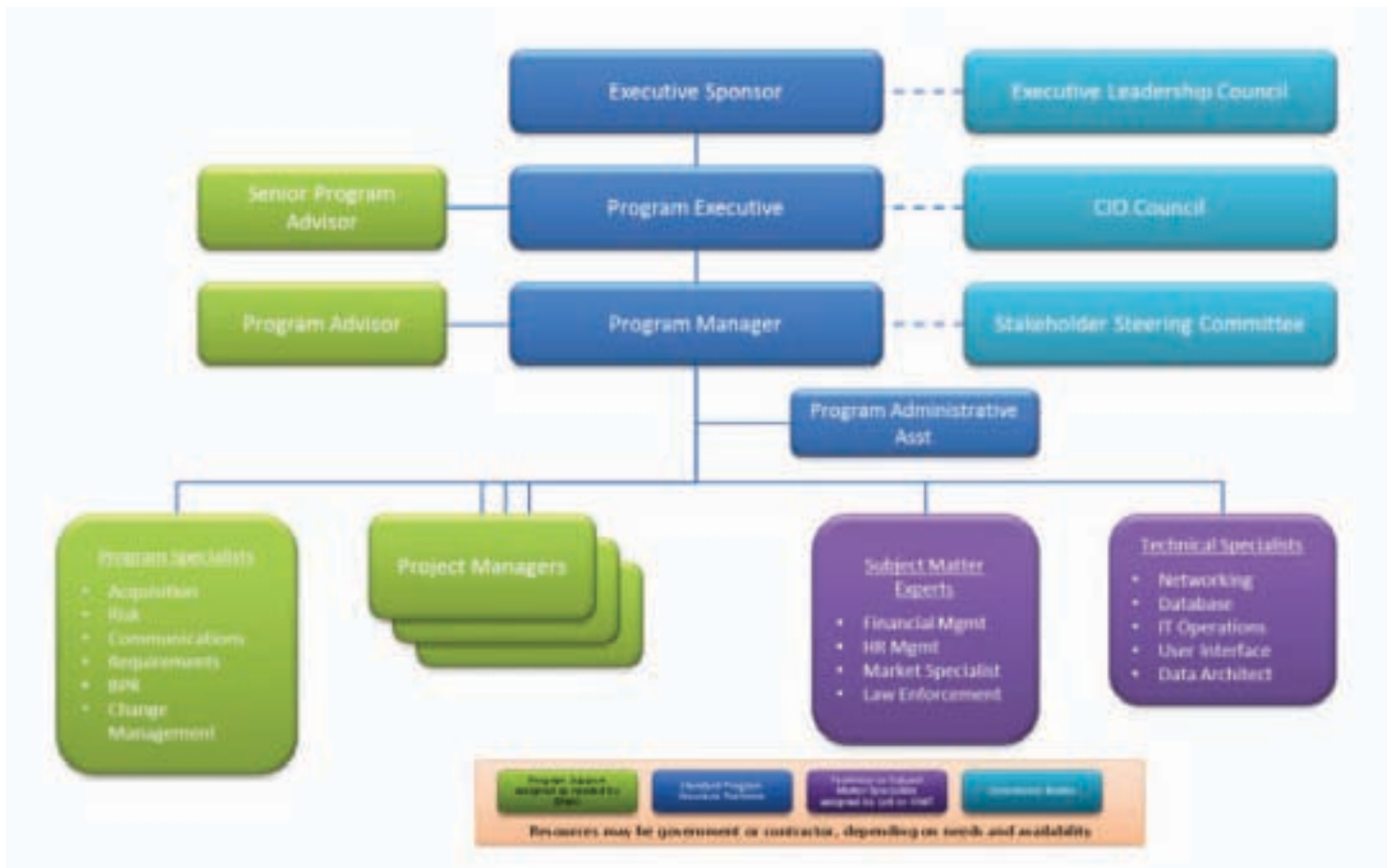


Figure 20: Basic OIMT Program Structure

The governance of a typical program is depicted in Figure 21.

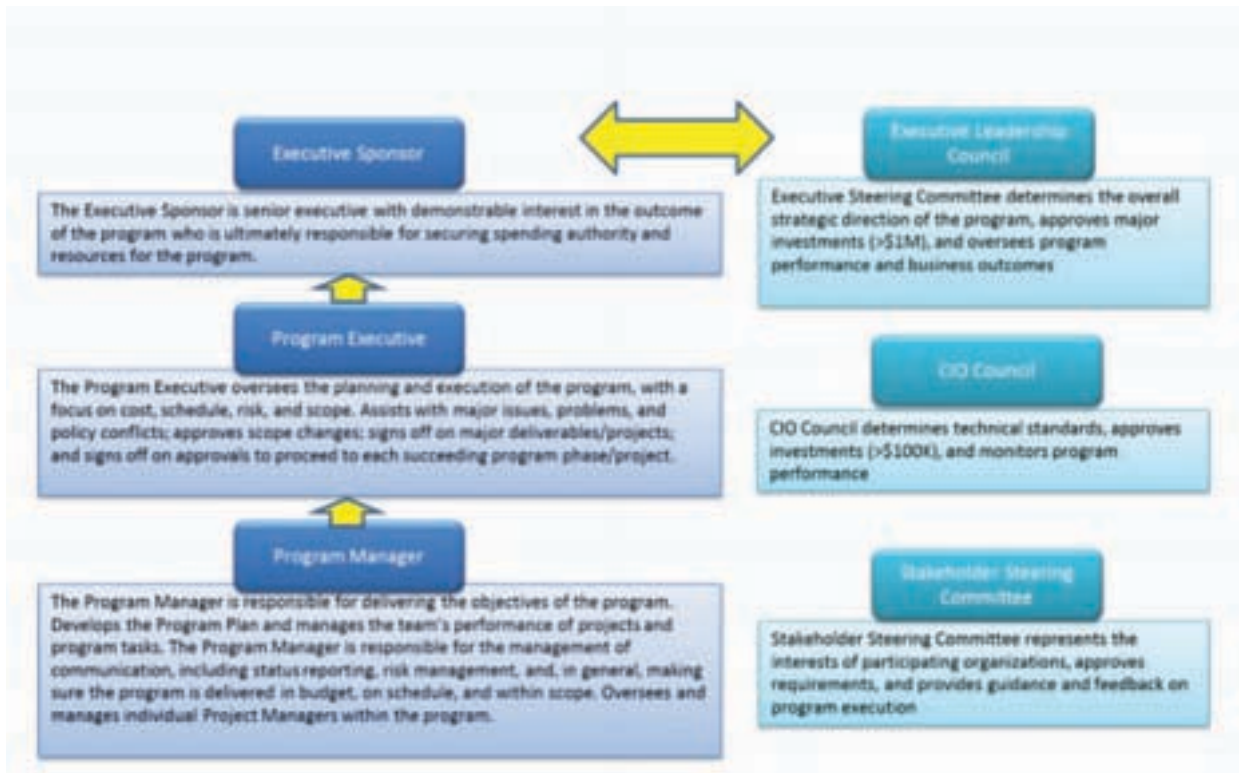


Figure 21: Program Governance

Programs are managed by the PgM, reporting to the Program Executive. Program performance information is captured in the Management Tool and reported via a dashboard. Meetings and presentations between the PgM and the governance structure are conducted on a by-exception basis to address specific shortcomings or risks (Figure 22).

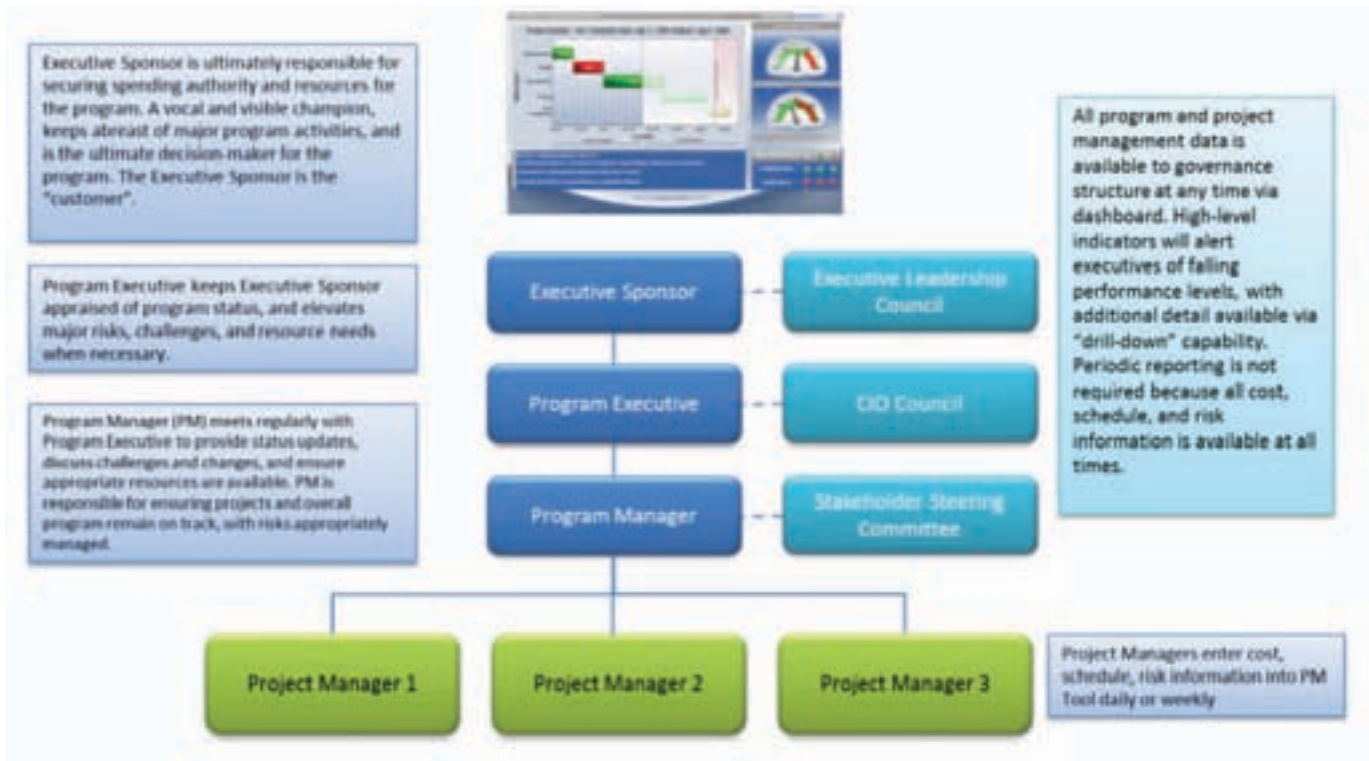


Figure 22: Program Management

As illustrated in Figure 23, project teams are hierarchical in authority and reporting.

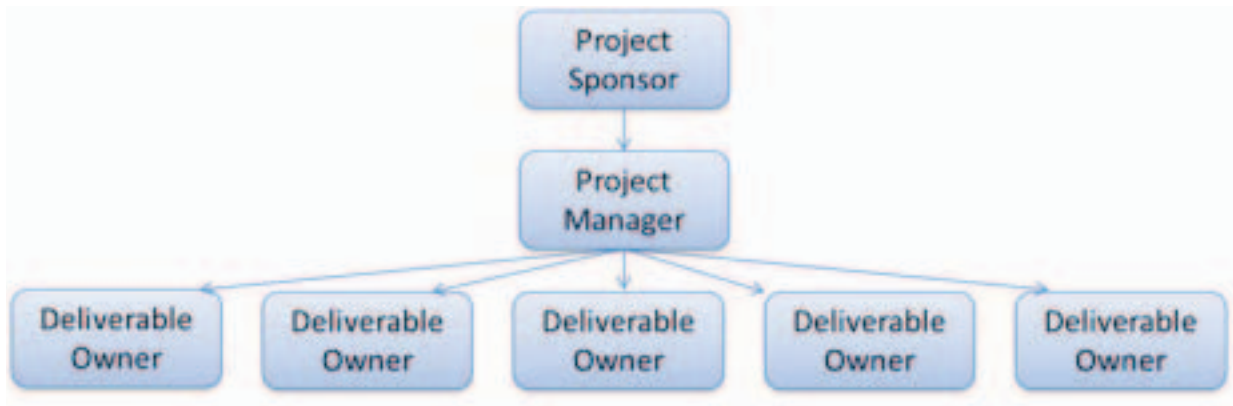


Figure 23: Project Team Organization Chart

Table 6: Integration Management Processes

Processes/ Knowledge Areas	Initiating Process	Planning Process	Executing Process	Monitoring and Controlling Process	Closing Process
Project Management Integration	Develop project charter	Develop Project Management Plan	Direct and manage project execution	Monitor and control project work Perform integrated change control.	Close project or phase
Project Scope Management		Collect requirements Define Scope Develop WBS		Verify scope Control scope	
Project Time Management		Define activities Sequence activities Estimate activity resources Develop schedule		Control schedule	
Project Cost Management		Estimate costs Determine budget		Control cost	
Project Quality Management		Plan Quality	Perform quality assurance	Perform quality control	
Project Human Resources Management		Develop HR plan	Acquire project team Develop project team Manage project team	Manage project team	
Project Communications Management	Identify stakeholders	Plan Communications	Distribute information Manage stakeholder expectations	Report performance	
Project Risk Management		Plan risk management Identify risks Perform qualitative risk analysis Perform quantitative risk analysis Plan risk responses		Monitor and control risks	
Project Procurement Management		Plan procurements	Conduct procurements	Administer procurements	Close procurements

6.14 PROJECT ROLES AND RESPONSIBILITIES

6.14.1 EXECUTIVE SPONSOR

The Executive Sponsor is typically a member of the Department's or organization's leadership and is responsible for:

- Ensuring the organization follows the dollar boundaries (<\$100K; \$100K-\$1M; >\$1M) for investment actions and documentation
- Ensuring new investment proposals are appropriately documented and justified in preparation for the Select phase of the investment management process with:
 - Accurate and current portfolio information
 - A business case
 - A risk assessment
- Ensuring the organization's existing projects (regardless of life cycle status) are complete within the OIMT investment portfolio
- Ensuring that portfolio components (i.e., projects, programs, applications, or systems) are evaluated on an annual basis and receive an appropriate level of funding to support its project life cycle stage (i.e., support SS or DME, or retirement)
- Addressing all recommendations issued by the CIOC and/or ELC relative to alternate approaches, denials, or delays and follow defined processes for the appeal/re-submission of any investment proposals, as appropriate
- Working collaboratively with the OIMT PFMgr
- Participating in progress reviews as part of the Control phase and address any CIOC or ELC recommended corrective actions
- Participating in reviews associated with the Evaluate phase and address any COIC or ELC recommendations and apply lessons learned, as appropriate
- Ensuring procurement requests contain CIOC or ELC approval documentation

6.14.2 PROJECT MANAGER (PM)

The PM is responsible for:

- Coordinating with the OIS and PFMgr on project information
- Supporting business case development or update for new investment proposals, as appropriate
- Updating newly approved investment information within the investment portfolio as it becomes available relative to subsequent projects
- Supporting evaluation and update of project components (i.e., projects, programs, applications, or systems) on an annual basis and recommending an appropriate level of funding for its life cycle stage (i.e., support SS or DME, or retirement)

- Ensuring project activities remain in alignment with the ELC approved investment
- Submitting CIOC and/or ELC investment approval documentation with any procurement request
- Manages the project integration, scope, time, cost, quality, human resources, communication, risk, and procurement

6.14.3 SUBJECT MATTER EXPERT (SME)

SMEs have the functional or technical expertise in a specific area that can provide guidance to project team members.

Responsibilities include:

- Providing technical or functional knowledge to guide project team in achieving project objectives and deliverables

6.14.4 FUNCTIONAL MANAGER

The Functional Manager has management authority over an organizational unit within a functional organization: the manager of any group that actually makes a product or performs a service.

Responsibilities include:

- Providing a project with qualified resources and checking resources work for accuracy, quality, and timely completion throughout project
- Prioritizing functional resource workloads according to Enterprise Portfolio and Group Portfolio priorities

6.14.5 DELIVERABLE OWNER

A Deliverable Owner is responsible for producing any unique and verifiable product, result, or capability to perform a service that must be produced to complete a process, phase, or project.

Responsibilities include:

- Leading the deliverable team to ensure timely creation, management, and completion of project work such as deliverables, sub-deliverables, and work packages

6.14.6 PROJECT RESOURCE

Project resources are skilled human resources (specific disciplines either individually, in crews, or teams), equipment, services, supplies, commodities, material, budgets, or funds.

Responsibilities include:

- Accomplishing deliverables by completing assigned deliverables, sub-deliverables, work packages, activities, and tasks

6.14.7 STAKEHOLDER

Stakeholders are persons or organizations (customer, sponsor, performing organization, the public) that are actively involved in the project, or whose interests may be positively or negatively affected by execution or completion of the project. A stakeholder may also exert influence over the project and its deliverables.

Responsibilities include:

- Ensuring prioritized needs and interests are met by attending selected meetings, staying current with project status reports, and providing feedback to project team throughout project life cycle.

6.14.9 PROJECT RISK MANAGER

In projects with high levels of risk, a team member may serve as a leader responsible to document identified risks, monitor, ensure prioritization, and provide communication. The risk manager keeps the team apprised of triggered risks, executes planned contingencies, or coordinates team contingency planning for unplanned events.

6.14.10 PROJECT COMMUNICATIONS MANAGER

In projects with high levels of risk in the area of communications, a team member may serve as a leader responsible to ensure a communications management plan is developed and executed during the project phases. The project communications manager keeps the team apprised of communications internal/external, inbound and outbound, and executes planned communications or coordinates team appropriately.

6.14.11 PROJECT ISSUE MANAGER

In projects with high levels of risk, a team member may serve as a leader responsible to document identified risks, monitor, ensure prioritization, and communication. The issue manager keeps the team apprised of triggered risks, and executes planned contingencies or coordinates team contingency planning for unplanned events.

6.14.12 PROJECT MANAGEMENT TRAINING

Project Management training sessions will be provided at least once per year.

- Team PM Training—a general overview of the project management processes, knowledge areas, and templates. This training will have emphasis on team roles and responsibilities. Overview of the knowledge areas with special attention to Risk Management and Communications Management.
- Introductory PM Training—a more in-depth training for those assigned to projects without formal training.
- Intermediate PM Training—for those who have completed the fundamentals and are assigned to larger projects.
- Advanced PM Training—for those who have completed the fundamentals and intermediate training and are assigned to large state-wide projects.

The Project Management Office will provide ongoing coaching and mentoring, as well as ongoing competency training.