

PHASE 3: PLANNING PHASE

The Planning Phase focuses principally on required project planning work. Proper comprehensive project planning is essential to a successful IT project, and incomplete project planning and analysis are frequently root causes of project failure. Most project planning is conducted as part of the *PMBOK* Integration Management work, which includes defining the processes necessary to identify, define, combine, unify, and coordinate all project activities for successful project deployment.

1.0 OBJECTIVES/GOALS

Objectives

Successful completion of the Planning Phase should comprise:

- Assessment and description of the procurement management strategy
- Elaboration and refinement of the project scope, schedule, risks, and costs
- Assessment and description of activities to coordinate all relevant subsidiary plans
- Definition of procedures for how the project will be executed, monitored, controlled, and closed
- Planning the future course of action
- Development of the Project Management Plan(s) (PMP)
- Performance of needed procurement activities
- Approval to progress to the Requirements Analysis Phase

Goals

The purpose of the Planning Phase is to plan all project processes and activities required to ensure project success and to create a comprehensive set of plans, known as the PMP, to manage the project from this phase until project termination. During the Requirements Analysis Phase, the agency will conduct any procurement needed for the project.

2.0 DELIVERABLES AND APPROVALS

SDLC deliverables help State agencies successfully plan, execute, and control agency IT projects by providing a framework to ensure that all aspects of the project are properly and consistently defined, planned, and communicated. The SDLC document templates provide a clear structure of required content along with boilerplate language agencies may utilize and customize. State agencies may use formats other than the templates, as long as the deliverables include all required content.

The development and distribution of SDLC deliverables:

- Ensure common understanding among Planning Team members and stakeholders,
- Serve as a reminder of specified plans as projects become increasingly complex,
- Provide agency senior management and other State officials insight into project risks and ongoing performance,
- Encourage the execution of repeatable and consistent processes,
- Facilitate the implementation of project management and agency IT best practices, and

- Result in a comprehensive record of project performance useful for many purposes (e.g. staff knowledge transfer, budgetary and other assessment activities, lessons learned).

During the development of documentation, the Planning Team should:

- Write comprehensive, easy to understand documents with no redundant information.
- Develop an organized document repository for critical project information, so Planning Team members can easily access, store, and reference project documents and other deliverables from all life cycle phases.
- Implement routine deliverable reviews to correct inaccuracy, incompleteness, and ambiguities.
- Recognize that sample templates for deliverables are available; agencies might accept deliverables in different formats as long as all required information is present. The length of deliverables may vary depending on the size, scope, and complexity of the project.
- Recycle or reference information from earlier documents where possible and beneficial.

The following is a listing of deliverables required of all projects for this phase of work.

Deliverable	Goals	Developed By	Approved By
Project Management Plan – <ul style="list-style-type: none"> • Scope Management Plan • Schedule Management Plan • Cost Management Plan • Quality Management Plan • Staffing Management Plan • Communication Management Plan • Risk Management Plan • Procurement Management Plan • Change Management Plan • Release Management Plan 	<ul style="list-style-type: none"> • Define how the project is executed, monitored, controlled, and closed • Document all actions necessary to execute, monitor, control, and close the project 	Project Manager	Agency CIO Project Sponsor
Procurement Documents – documents such as a Request For Proposal (RFP) or a Task Order Request For Proposal (TORFP) that elicit competitive and comprehensive offers from potential contractors for a product or service. The document should specify the scope of the desired procurement, define the evaluation process, and delineate the deliverables and requirements associated with the project.	<ul style="list-style-type: none"> • Elicit quality proposals from qualified contractors • Provide contractors with sufficient information to formulate an appropriate response including an accurate schedule and cost estimate 	Procurement Officer Project Manager	Agency CIO Agency CFO Project Sponsor Business Owner Project Manager

All deliverables other than those identified as Updates should be initially developed in this phase. Deliverables identified as Updates should be revisited and enhanced as necessary as prescribed in this phase.

Deliverables produced during this phase must be reviewed in detail and should follow the approval path as defined in the above table. A signature page or section should accompany each deliverable requiring approval. DoIT will periodically request copies of these documents as part of its oversight responsibilities.

3.0 ROLES

The following personnel participate in the work activities during this phase:

- Agency CIO
- Project Sponsor
- Executive Sponsor
- Project Manager
- Procurement Officer
- Project Stakeholders
- Secretary of DoIT

RACI Key

Responsible – Describes role that executes the activities to achieve the task.

Accountable – Describes roles that own the quality of the deliverable and sign off on work that Responsible provides.

Consulted – Describes roles that provide subject matter expertise.

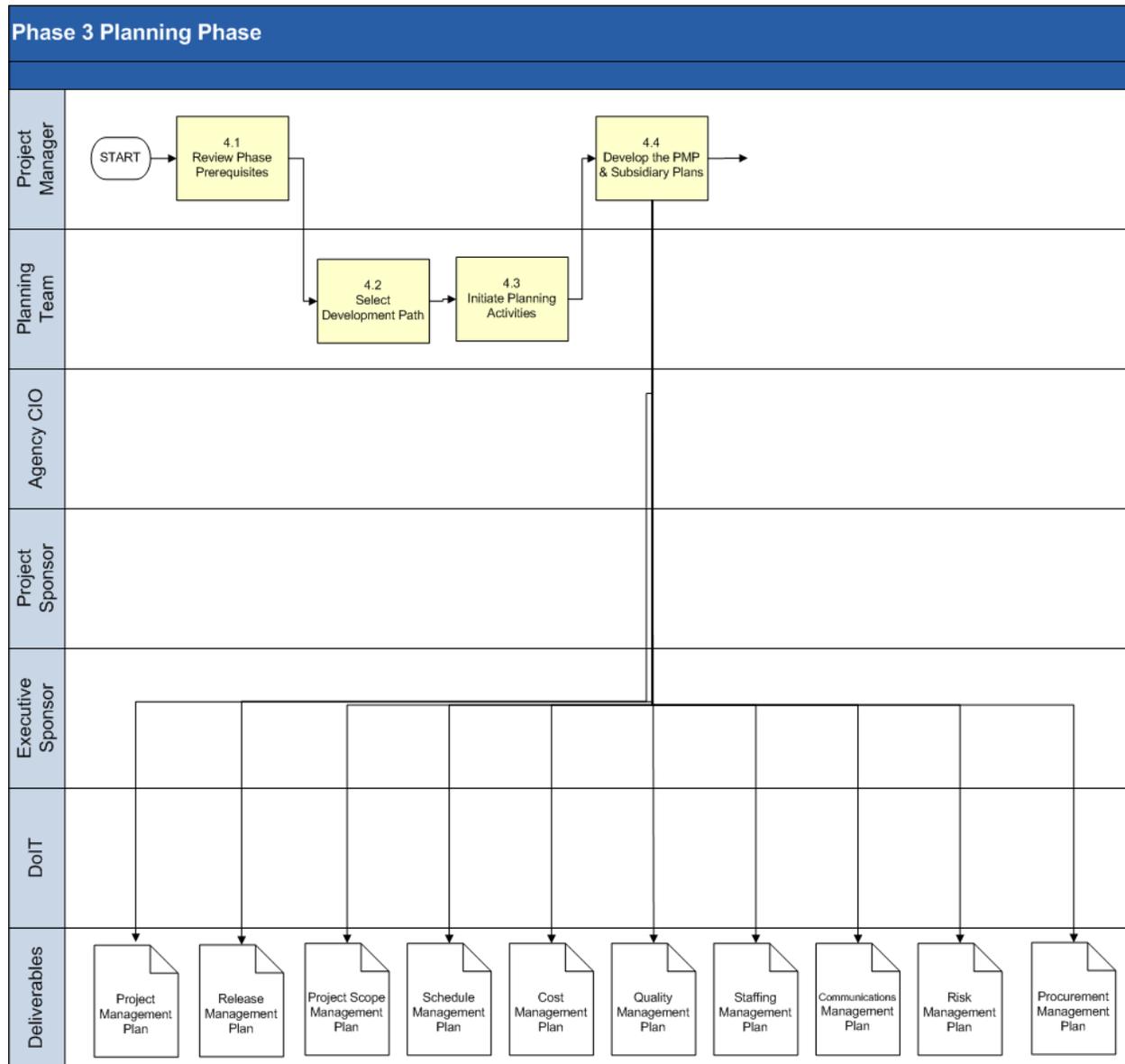
Informed – Describes roles that receive information about the task.

Deliverable	Executive Sponsor	Project Sponsor	Agency CIO	Project Manager	Procurement Officer	Project Stakeholders	DoIT
Project Management Plan	I	A	A	R	I	I	I
Procurement Documents	I	A	A	R	A	I	C

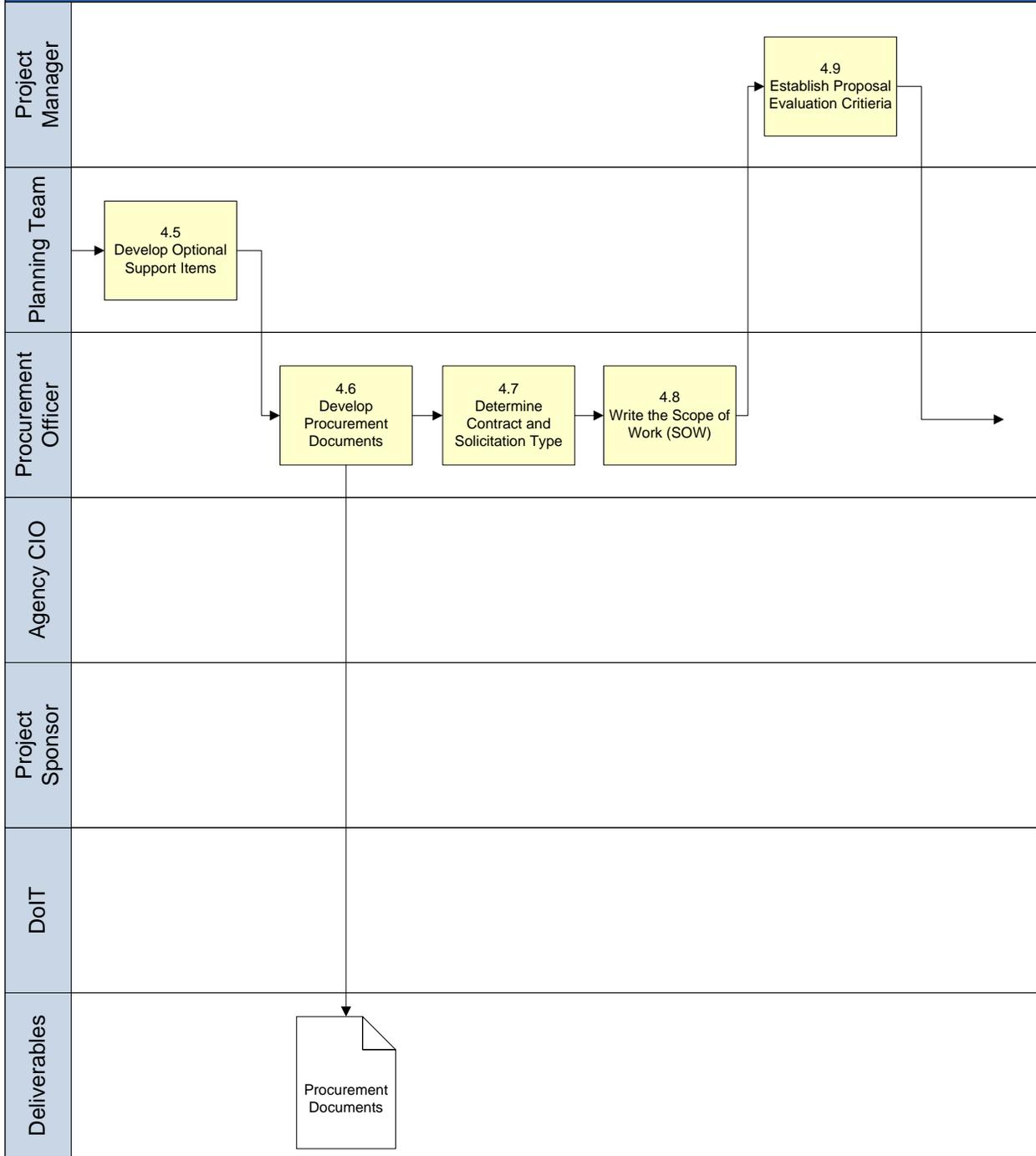
Possible RACI Matrix

The Roles and Responsibilities page has detailed descriptions of these roles and the associated responsibilities.

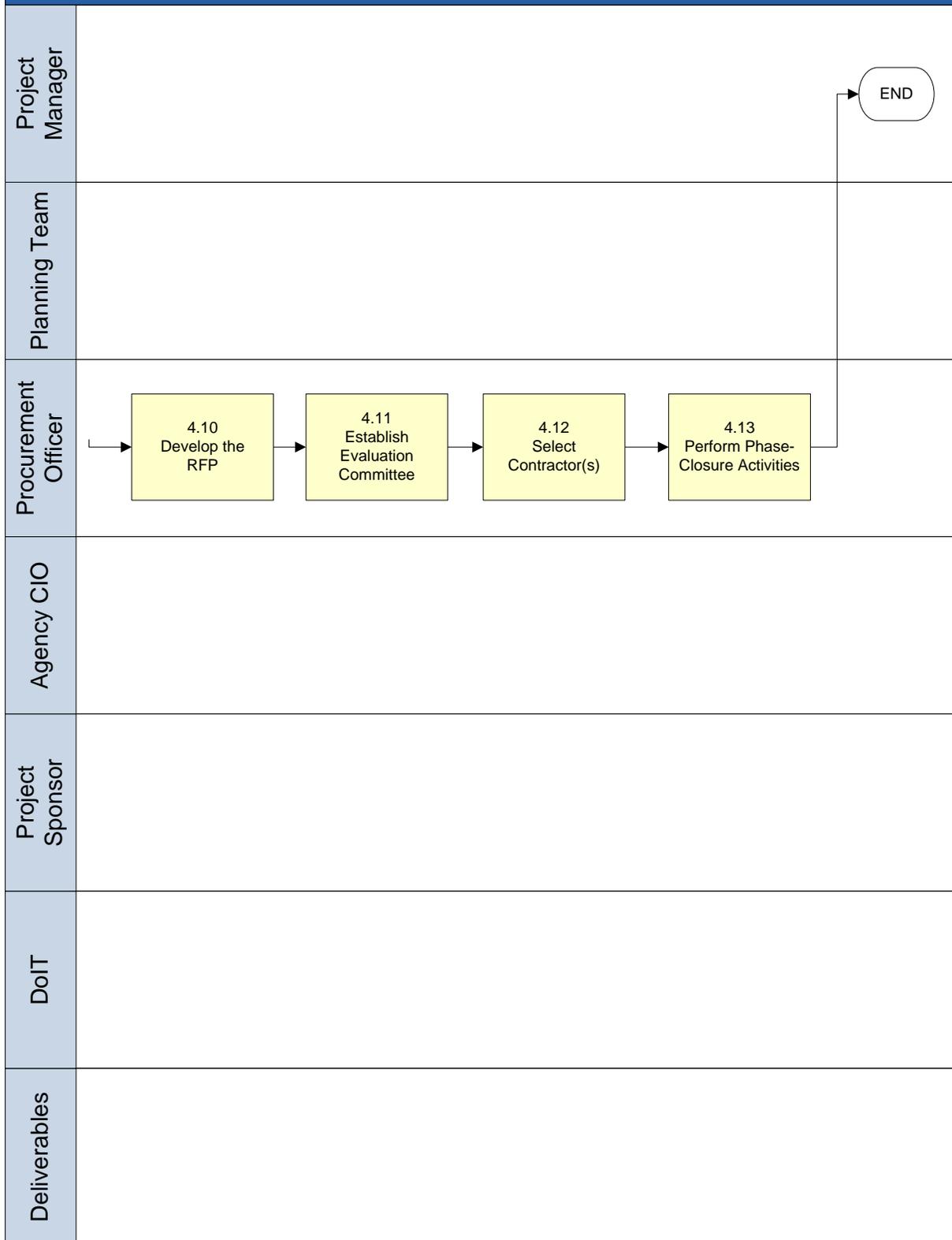
4.0 TASKS AND ACTIVITIES



Phase 3 Planning Phase



Phase 3 Planning Phase



4.1 Review Phase Prerequisites.

The Project Manager ensures the following prerequisites for this phase are complete:

- The business need for the project continues to be valid.
- An alternatives analysis was performed.
- The project scope is clearly defined and approved.
- The acquisition strategy is finalized.
- The ITPR is approved.
- The Agency CIO, Project Sponsor, and Executive Sponsor approved the Project Scope Statement.

4.2 Select Development Path.

After completing the first three phases of the SDLC, agencies can select from one of several development paths suited to the specific project. By selecting the appropriate development path, an agency can reduce documentation redundancy. These development paths are as follows:

- **Single-Release Projects** – smaller efforts that have one SDLC cycle. Single-release projects may involve custom development, commercial-off-the-shelf (COTS) implementations, or hardware/network implementations or upgrades.
- **Multiple-Release Projects** – larger efforts that have multiple releases, phases, or milestones. Multiple-release projects may also involve custom development, COTS implementations, or hardware/network implementations or upgrades.

4.3 Initiate Planning Activities.

The Planning Team begins planning with the following tasks:

- Review the Maryland Enterprise Architecture (EA) Repository and the technical requirements to ensure the project lies within the scope of the State's approved technologies
- Review other standards and methods that will affect the project. At minimum, the Planning Team should review *PMBOK* and SDLC guidance for all project phases, the State Information Technology Security Policy and Standards, and the statewide disaster recovery standards. For information regarding State security policies and disaster recovery standards, visit the DoIT website.

4.4 Develop the PMP and Subsidiary Plans.

The Project Manager conducts and/or supervises the analysis required to understand all the dimensions of the project and documents this analysis in the PMP and its subsidiary plans. The Project Manager may assign some investigation and analysis tasks to other agency staff or members of the Planning Team.

4.4.1 Document Description

The key elements of the PMP include:

- Details about the functional units involved, job tasks, cost and schedule performance measurements
- Milestones and review scheduling (indicate which milestones are contractually mandatory and which ones are optional)
- Definition of all project management processes

- Identification of tools and techniques to accomplish project management processes
- Dependencies and interactions among processes
- Timelines and metrics for success at each phase of work
- Methods for maintaining the integrity of the performance measurement baselines, resource calendar, schedule baseline, cost baseline, scope baseline, and quality baseline
- Further elaboration of the project scope, tasks, schedule, allocated resources, and interrelationships with other projects

4.4.2 **Typical Content**

The PMP must include the following subsidiary plans:

- Scope Management Plan
- Schedule Management Plan
- Cost Management Plan
- Quality Management Plan
- Staffing Management Plan
- Communication Management Plan
- Risk Management Plan
- Procurement Management Plan
- Change Management Plan
- Release Management Plan

All vendor-produced project plans must include the proper schedule and activity for creating, reviewing, revising, and accepting all required SDLC documentation.

4.4.3 **Guidance for Document Development**

Throughout the life cycle review all planning processes regularly and revise as needed to ensure continued applicability. Also, review and update the PMP and subsidiary plans at least quarterly.

4.4.4 **Dos and Don'ts**

- Do include in the plans all vendor, agency, and government tasks to identify and monitor dependencies. Without a holistic project plan, assessing a project's schedule becomes difficult, and the likelihood of missing scheduled deliverable dates increases.
- Ensure that each subsidiary plan addresses the processes associated with a multiple-release implementation.
- Consider internal and external factors that will affect the project throughout the life cycle.

4.4.5 **Develop the Scope Management Plan.**

The Project Manager with input from the key project stakeholders writes the Scope Management Plan and then creates the milestone list. The Scope Management Plan briefly reiterates the project scope, defines its verification and control procedures, and describes how requirements will be defined. The Scope Management Plan must address the following scope management processes: Collect Requirements, Verify Scope, and Control Scope.

Collect Requirements – a process identifying how requirements will be further defined. Identify the requirements definition methodology, tools, techniques, and documentation to be utilized and the planned processes to ensure that requirements are defined to be complete, concise, consistent, and unambiguous. This section should clearly demonstrate how the Planning Team will define and validate requirements for all requirement types specified in the Functional Requirements Document template.

Verify Scope – a process defining how various products/deliverables will be periodically verified and formally accepted. This section of the Scope Management Plan should describe:

- Process to obtain project stakeholders' formal acceptance of the completed project scope and associated deliverables. This process typically involves verifying that deliverables meet acceptance criteria.
- Processes to verify periodically the project scope. This includes reviewing deliverables to ensure that each is completed satisfactorily.
- Processes for inspecting, measuring, and testing the contractual deliverable to verify it meets the established acceptance criteria.

Control Scope – procedures for handling project change requests.

- Procedures to ensure all potential project scope changes are vetted properly through the established Change Control process. With the Procurement Officer, define procurement-related change control measures, i.e., change order processes.

4.4.6 **Refine WBS, Develop the Baseline Schedule and Develop the Schedule Management Plan.**

The Project Manager, with input from the key project stakeholders and the initial WBS, refines the WBS into further detail, develops the baseline schedule and defines the Schedule Management Plan. The initial WBS, developed during the Concept Development Phase, will be progressively elaborated to define specific work activities, activities sequence, estimate resources, and estimate duration that will need to complete the project. The refined WBS will be used to develop an initial, baseline schedule. The Schedule Management Plan establishes the specific procedures for how the project schedule will be managed and controlled and is as detailed as necessary to control the schedule through the life cycle based on the size, risk profile, and complexity of the project. If the Planning Team intends to implement the project through multiple releases, the Schedule Management Plan should address the processes to manage the schedule through multiple iterations of design, development, integration, testing, and implementation.

The Project Manager should consider the six schedule management processes described below in the development of the schedule baseline and the Schedule Management Plan. The development of the schedule baseline will involve activity definition, activity sequencing, activity resource estimation, and activity duration estimation. The Schedule Management Plan should be focused on the methods for controlling the schedule.

Define Activities – identification of the specific work activities that need to be performed to complete the project. Although preliminary activity definition begins in the Concept Development Phase, this definition is further refined during the Planning Phase to ensure that all

activities are defined in detail. The Planning Team creates a more detailed WBS, develop an initial, baseline project schedule and describes the proposed process for how the baseline schedule will be maintained and monitored in the Schedule Management Plan. For multiple-release projects, Planning Teams should progressively elaborate activity definition, using the results of one implementation to verify and update activity definition for remaining iterations.

The Project Manager includes IV&V processes as discrete WBS work tasks if the project is subject to IV&V review.

- DoIT can initiate independent IV&V reviews at any stage of the life cycle.
- Some projects have Legislative requirements for periodic IV&V reviews.
- Plan for the scheduling, scope, and cost of such activities in the PMP.

Other WBS Considerations:

- A PMP always includes a WBS that organizes and defines the total work necessary to complete the project objectives.
- The WBS subdivides the project work into incrementally smaller, manageable portions.
- Each subsequent WBS level represents increasingly detailed definitions of project work.
- The lowest-level WBS components are called “work packages.”

Sequence Activities – identification of WBS dependencies and order among activities. Identify and document the logical relationships among schedule activities.

Estimate Activity Resources – estimation of the type and quantities of resources required to complete identified activities.

Estimate Activity Durations – estimation of the approximate duration to complete work packages. Using the refined WBS, the team members most familiar with the identified work package should estimate the duration of scheduled activities.

Develop Schedule – develop the baseline project schedule after analyzing all defined WBS activities and work packages, sequence, resources, and duration. This section also includes identification of tools to use for managing the project schedule.

Control Schedule – methods for controlling changes to the schedule.

- Procedures and schedule performance indicators for reporting project progress and who will be accountable for reporting and maintaining the schedule
- Definition of the schedule change process, including approvals and notification
- Procedures and schedule for reviewing and updating the baseline plan
- Procedures for schedule performance corrective actions

The agency must manage the master project schedule, including both agency and contractor tasks. As such, it is critical that the Schedule Management Plan identify planned master schedule management activities to be executed throughout the project life cycle.

4.4.7 Develop the Cost Management Plan.

The Project Manager and the Procurement Officer create the cost baseline and the Cost Management Plan. Beginning with the preliminary cost estimates identified in the Concept Development Phase, the Project Manager develops updated cost estimates to perform the work included in the updated schedule. The Cost Management Plan establishes the activities and criteria for planning, structuring, and controlling project costs. Cost estimating and cost controls are the most important evaluation and control items in State projects. Costs and cost variances must be reported regularly to DoIT and other oversight organizations. Any cost change over five percent requires legislative approval.

The Project Manager should consider the three cost management processes described below in the development of the cost baseline and the Cost Management Plan. The development of the cost baseline will involve updated cost estimation and budget determination. The Cost Management Plan should be focused on the methods for controlling costs.

Estimate Costs – development of a complete estimate of the funding needed to complete project activities, including operations, maintenance, and support costs for the life of the project. See Section 4.5 of the Concept Development Phase for information on various cost estimating methods. Estimate costs by evaluating each WBS work package, and logically partition and report costs into incremental, manageable pieces, including:

- Internal and external labor – cost of work performed by State employees and external vendors
- Materials – cost of items (e.g. office supplies) consumed during business operations and service delivery
- Equipment – cost of hardware and any other kind of physical asset employed in business operations
- Services – cost of all services provided by external vendors
- Facilities – costs associated with providing physical locations for work to be performed
- Contractual requirements – cost of complying with all contractual requirements, such as SDLC requirements
- Inflation allowances – addresses the amount of expected price increases of business operations and service delivery
- Contingency reserves – planned funds allocated for cost uncertainty

For multiple-release projects, Planning Teams should progressively elaborate cost estimates, using the results of one implementation to verify and update cost estimates for remaining iterations.

Determine Budget – combination of work package costs to establish an overall budget. Aggregate the estimated costs of each scheduled activity or work package, and establish a total cost performance baseline for measuring project performance. When aggregating the estimated costs, add a budget line item for IV&V (see ITPR Guidelines and instructions for estimated IV&V costs). Not all projects are selected for IV&V reviews, but cost allocations for the activity are advisable for all MITDPs. Also consider:

- Reserve Analysis – Establish contingency reserves or allowances for unplanned but required changes. Management contingency reserves are budget line items allocated for unplanned changes.
- Funding Limit Reconciliation – Reconcile the expenditure of funds with the funding limits set by the performing organization on the disbursement of funds for the project.

Control Costs – establishment of procedures to manage the established cost baseline, so the project is completed on time and on budget. These procedures assist in assuring that cost expenditures do not exceed the authorized funding, by period, deliverable, or in total.

- Procedures for monitoring overall cost performance to detect and understand cost baseline variances
- Procedures for monitoring and reporting work performance against funds expended
- Description of how Project Managers will routinely monitor the status of the project to manage changes to the cost baseline
- Description of cost tracking and reporting procedures
- Plans for conducting periodic cost control reviews throughout the project life cycle
- Plans for quarterly ITPR reporting and periodic budget cost reviews

Planned cost control activities must address the following:

- Influencing the factors that create changes to the approved cost baseline
- Managing the actual changes as they occur
- Preventing any unapproved changes from being implemented
- Informing appropriate project stakeholders of all approved changes and associated costs
- Acting to bring cost overruns within budgetary limits

The Cost Management Plan should identify how the team will update other relevant project documents (e.g. PMP) when cost variances are identified.

When identifying cost performance monitoring plans, consider performance measurement techniques identified by *PMBOK*. For example, *PMBOK*, Chapter 7 describes earned value techniques which compare the budgeted cost of work performed to both the budgeted cost of work scheduled and the actual cost of work performed.

Ensure that planned financial reporting for MITDPs adheres to the DoIT quarterly reporting guidelines.

4.4.8 **Develop the Quality Management Plan.**

The Project Manager with input from key project stakeholders and the Procurement Officer creates the Quality Management Plan and the quality baseline, which identify the relevant quality standards and determine how those standards will be satisfied. The Quality Management Plan should address three quality management processes: plan quality, perform quality assurance, perform quality control.

Plan Quality – verification processes to ensure that the system is successful, that project stakeholders are satisfied, and that deliverables are accepted.

- Plan for how requirements traceability will be conducted throughout the project to ensure that system outcomes developed in later phases are tested to ensure they meet the system baseline requirements
- Plan what work the team will do to demonstrate adequately compliance to baseline requirements
- Assign the task of developing acceptance criteria for future traceability
- Include processes to develop test scripts and conduct acceptance testing
- For storage area network projects, identify the preliminary strategy for how the Planning Team envisions migrating the legacy data and how this strategy will ensure data is migrated completely and accurately
- Plan for how key project stakeholders and the Development Team will acquire the proper expertise to verify deliverables and develop and execute test scripts if this expertise is not already in place
- Link requirements of project deliverables to established acceptance criteria

Perform Quality Assurance – procedures for ensuring the effectiveness of quality management processes and quality standards. This section of the Quality Management Plan describes how and when the team will monitor and report effectiveness and how the team will implement corrective actions to ensure that quality management processes and standards are defined and implemented to ensure optimal project performance.

- Plan for a possible IV&V assessment at any phase of the SDLC or multiple times during the project life cycle. IV&V assessments are part of an overall quality plan as an independent check-up on the overall health of the project to date, pointing out its strengths and areas that need improvement to help the project be successful, on time, and within the allotted budget

Perform Quality Control – review activities focused on the quality of deliverables, including the system, to determine adherence to quality standards and criteria. This section of the Quality Management Plan describes the procedures for evaluating deliverable and project performance and for recommending necessary changes. Quality control procedures should address monitoring overall project performance, including cost and schedule performance, as well as the quality of all project activities and deliverables. Quality control activities for the system should identify the testing activities, tools, techniques, and desired outputs to ensure quality attributes are built into the design and tested throughout the life cycle. Quality control tools and techniques may include quality inspections, inspection schedules, and quality audits, and outputs may include bug fix logs of inspection errors referenced against a Requirements Traceability Matrix. Testing is an ongoing activity that can provide an early warning long before an application is released into production if it is not up to standard.

4.4.9 **Develop the Staffing Management Plan.**

The Project Manager with input from key project stakeholders creates the Staffing Management Plan and the Resource Calendar. Staffing Management Planning further determines:

- Project roles
- Responsibilities
- Reporting relationships

The Staffing Management Plan elaborates on staffing work completed in the Concept Development Phase – the preliminary organization chart, RAM, and preliminary staffing estimates – by describing how and when human resource requirements will be met.

The Staffing Management Plan will contain for each team member:

- Role – a description of each team member’s responsibility on the project
- Authority/Reporting – level of decision-making ability defined in terms of project resources, project schedule, formal approvals, and project reporting structure. Teams work most efficiently when individual responsibilities match individual authority levels.
- Responsibility – definition of what each team member must complete for the project
- Competency – the skill set necessary and the expected level of effort (capacity) for the project to be successful. Initiate proactive responses when realizing a team member lacks the proper skill set or capacity. Proactive responses include, but are not limited to, training, hiring additional staff, schedule changes, and/or project scope changes.

A Staffing Management Plan contains:

- Staff Acquisition Strategy – how staffing will be acquired to do the work.
 - Internal agency resources and estimates of external (contractor) needs.
 - Initial staffing logistics – where will the team work (on site, off site, or both)
 - Agencies are strongly encouraged to provide, at a minimum, a fully dedicated Project Manager for all MITDPs undertaken.
- Timetable – when each resource will join and exit the team based on the updated WBS. A resource histogram is an accepted tool in this area (refer to *PMBOK* Section 9.1.3).
- Training Needs – plan to develop a training plan as part of the project so that team members can acquire needed skills if they do not already have the required level of competency.

A Staffing Management Plan must consider resource needs for the full life of the system including operations and maintenance. Because internal agency resources assigned to the project will no longer be able to perform their operational duties, the Staffing Management Plan should identify the additional resources required to support agency operations without interruption.

Additional optional areas of the Staffing Management Plan include:

- Plans for staff recognition
- Safety policies

4.4.10 Develop the Communication Management Plan.

The Project Manager with input from key project stakeholders develops the Communication Management Plan. Communications planning is one of the most important subsidiary plans in the PMP. It describes the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval, and disposition of project information. For more information on communications planning, see *PMBOK*, Chapter 10, fourth edition.

The Communication Management Plan describes the detailed processes and techniques the team will use to collect, store, and report on project progress. It is often multi-dimensional; as there are multiple stakeholder groups that require information on the project, the Communication

Management Plan details who needs exactly what information, when they need it, how it will be delivered, and by whom.

The Communication Management Plan is an important first step in managing project stakeholders' expectations, which is an important factor in project success. The Project Manager is primarily responsible for ensuring that project communications is conducted appropriately throughout the project, but the work of disseminating information can be delegated to other team members.

Consider DoIT a key stakeholder when developing the Communication Management Plan. Align project status reports with the data needs of DoIT and the Clarity portfolio management application. For information on Clarity reporting requirements, contact DoIT.

Key elements of the Communication Management Plan include:

- Segregation of users into groups and determination of the type of information each group requires
- Description of tools, media, and format for project communications
- Description of the distribution channels for information
- Determination of the frequency of information delivery
- Assignment of Planning Team responsibility for information collection and distribution
- Format and information requirements needed from the team, including future contractor personnel
- Plan for reporting project performance

Project performance reporting involves collecting all project baseline data and distributing performance information to project stakeholders. Performance reporting (i.e. status reporting) generally provides information on scope, schedule, cost, quality, issues, and risks, completed activities within the reporting period, activities that have not been completed and why, upcoming activities, and a list of pending, approved and rejected project changes.

4.4.11 Develop the Risk Management Plan.

The Project Manager with input from key project stakeholders creates the Risk Management Plan (RMP) and the Risk Register, which detail how teams will identify, manage, and mitigate risk. For RMP template, visit the SDLC Templates page. Active management of project risks increases the probability of positive events and decreases the chances of negative events within the project life cycle. This subject is described in detail in Chapter 11.1 of the *PMBOK* guide.

Developing a Risk Management Plan during the Planning Phase reinforces the concept that risk identification and mitigation are highly important activities, which, if properly addressed, serve to reduce overall project risk. Whenever practical, involve the Executive Sponsor and the Project Sponsor in risk identification and mitigation activities throughout the project life cycle. Identify in the Risk Management Plan how the Project Manager will routinely provide the Executive Sponsor and the Project Sponsor with complete insight into all known risks.

Be sure to give special consideration to security risks and the processes for evaluating whether the system meets state security standards.

DoIT maintains a system of five risk categories and 12 to 15 sub-categories. These risk classification values are included in the Risk Management Plan template. When developing a Risk Management Plan, use this classification schema for easier project reporting throughout the life cycle.

Key elements of the Risk Management Plan include:

- Risk Planning – how to approach, plan, and execute risk management activities
- Risk Identification – determination of initial risks that might affect the project, identification of processes for flagging emerging risks, and descriptions of each risk characteristic. Risk identification is an iterative process because new risks will emerge as the project progresses through its life cycle.
- Risk Analysis – quantitative and/or qualitative analysis of each identified risk. Usually, qualitative risk management techniques are the most applicable for State projects. These types of risk analysis methods, as well as the conditions under which each method can be used, are described in detail in Chapter 11 of the *PMBOK*.
- Response Planning – mitigation, transfer, and/or avoidance strategies to reduce risk
- Monitoring and Control – procedures for tracking risks, monitoring residual risk, identifying new risks, executing response plans, and evaluating risk management effectiveness. Add new risks to the risk register as they are identified and response strategies are developed.

A Risk Management Plan typically contains the following sections:

- Methodology – the approach, tools, and information sources for risk management activities
- Roles and Responsibilities – lead, support, and other team members responsible for risk management activities and each team member's responsibilities
- Budget – the budget incorporated into cost estimating activities for risk mitigation (included in the overall project budget). Best practices suggest a risk mitigation budget of 5-15% of total project costs, budgeting on the higher end for projects with high-risk profiles.
- Timing – how often risk management processes will be performed
- Risk Management Activities – risk management activities to be included in the project work schedule
- Risk Categories – a comprehensive process of systematically classifying risk consistently
- Risk Probability and Impact – project-specific risk probability and impact measurement methods
- Reporting Formats – the content and format of the project Risk Register, which is typically a work tool or spreadsheet that documents and tracks risk information

An RMP also includes an issue management plan with an actively managed issues log that identifies, assigns responsibility, and tracks issues through to closure.

4.4.12 Develop the Procurement Management Plan.

The Project Manager and the Procurement Officer create the Procurement Management Plan to define the procedures to purchase or acquire all products and services needed from outside the team to perform project tasks. The Project Procurement Management processes include six key steps. For more detailed information, please refer to Chapter 12 in the *PMBOK*, fourth edition.

The Project Manager should update the schedule to include all procurement activities identified as part of procurement management planning. For an example procurement schedule, visit the DoIT website.

The Procurement Management Plan should identify plans for the following procurement management processes:

Plan Purchases and Acquisitions – development of solicitation documents to seek responses from multiple businesses that wish to provide a needed service for the agency. These documents must have sufficient detail and concrete measurable criteria to ensure consistent, comparable bidder responses but also be flexible enough to allow consideration of contractor suggestions for better ways to satisfy the requirements. If an agency elects to have contractors conduct some SDLC activities, the contractor must be explicitly instructed in procurement documents to describe the methods it will use to develop SDLC documents, supply all pertinent SDLC document samples with the bid packages, and supply a schedule for when these key documents would be received. It is also good policy to fix price deliverables and provide detailed acceptance criteria in advance in order to avoid later confusion and cost overruns.

Plan Contracting – development and preparation of documents needed to support the Request Vendor/Contractor responses process and the Select Vendor/Contractor process.

Request Vendor/Contractor Responses – release of a RFP or TORFP

Select Vendor/Contractors (proposal evaluation process) – receipt of bids, quotes, or proposals and application of pre-determined, published evaluation criteria to select qualified contractors or sellers. Evaluation criteria varies based on overall project needs. Key project stakeholders should be involved in evaluating all aspects of proposed solutions from a technical perspective.

Contract Administration – verification that the contractor meets contractual requirements and performs in accordance with the terms and conditions of the agreed contract. The five key areas of contract management include:

- Reading and understanding all deliverables and terms and conditions of the contract
- Actively managing the terms and conditions of the contract
- Inspection and verification of all deliverables before sign-off and payment
- Verification that any contractual changes have been subject to the change management process and have been properly assessed and approved
- Assurance that the Risk Management Plan is followed and that project risks are actively managed and mitigated
- Receipt of status reports based on the deliverable schedule; reviewing and providing feedback to the contractor in a timely fashion. (Contractor reports at a minimum must include an up-to-date project schedule, costs, performance, and status of deliverables.)

Contract Closure – establishment of procedures to verify and document project deliverables and formalize the Project Sponsor's acceptance of those deliverables. If the project is cancelled, the Project Manager documents the reasons and obtains sign-off from the Project Sponsor. Also,

determine processes for the contract and administrative close-out in this part of the PMP. Refer to *PMBOK*, section 4.6 for further direction.

Involve key project stakeholders in determining effective acceptance practices for project deliverables. Use a requirements traceability matrix to verify deliverables have met contractual standards. After the key project stakeholders verify the deliverable meets the requirement, the Project Manager executes formal acceptance.

4.4.13 Develop the Change Management Plan.

The Project Manager with input from the Procurement Officer creates the Change Management Plan, which documents how project changes will be monitored and controlled from project inception through completion. The Change Management Plan should address:

- Process for approving/rejecting project change requests
- Process for monitoring and managing the rate of implemented change requests
- Process for maintaining baseline integrity by releasing only approved changes for incorporation into project products
- Process for configuration identification – how configuration items will be selected and identified, how products and documents are labeled, changes are managed, and accountability is maintained
- Process for configuration status accounting – how information is recorded and reported regarding configuration item data, including a listing of approved configuration identification, status of proposed changes to the configuration, and the implementation status of approved changes
- Process for configuration verification and audit – how configuration items will be verified and audited to ensure that they are correct and that corresponding changes are registered, assessed, approved, tracked, and correctly implemented
- Documentation of the complete impact of requested changes

4.4.14 Develop the Release Management Plan.

The Project Manager creates the Release Management Plan, which describes the plans for controlling the flow of changes into a production environment. The focus of release management, according to the Information Technology Infrastructure Library (ITIL), is the protection of the live environment and its services through the use of formal procedures and checks. The development of a Release Management Plan helps to ensure that these procedures and checks are properly defined, documented, and communicated.

A Release Management Plan should address the following:

- Planned release management processes
- Release management roles and responsibilities
- Release numbering, naming, and identification scheme
- Frequency of releases
- Critical business times to avoid
- Planned deliverables for each release
- Planned release documentation

- Backout plans
- Backout plan testing
- Release management process controls
- Planned releases and the contents of each release

Reference other project documents, such as the Change Management Plan, Contingency Plan, Risk Management Plan, and Quality Management Plan, as necessary to minimize redundancy. For more information regarding release management best practices, see *Service Transition IT Infrastructure Library*, volume 3 of the ITIL Series.

4.5 **Develop Optional Support Items.**

When appropriate, agencies may develop other planning documents, such as:

- Resource Calendar – calendar that documents working days and resource availability and any known schedule limitations

4.6 **Develop Procurement Documents.**

The Procurement Officer with the assistance of the Project Manager develops all procurement documents. For hardware/network projects, agencies may choose to procure vendor support for planning and requirements definition activities. Procurements during the Planning Phase should not involve the acquisition of hardware because requirements have not yet been defined, and the system has not yet been designed. Depending on the scope of service solicited, procurement documents may be developed in other SDLC phases.

Procurement documents such as RFPs and TORFPs are distributed to elicit competitive and comprehensive offers from potential contractors for a product or service. RFPs and TORFPs specify the scope of the desired procurement, define the evaluation process, delineate the deliverables and requirements associated with the project, and establish a contractual agreement for the delivery of the good or service. Careful planning and development of procurement documents help avoid or mitigate project risks or transfer project risks to the contractor.

4.7 **Determine Contract and Solicitation Type.**

The Procurement Officer determines the type of contract and solicitation. The type of contract determines the level of risk shared between the State and a contractor. Fixed-price (FP) contracts generally reduce the risk to the State by ensuring that any cost increase due to adverse performance is the responsibility of the contractor, who is legally obligated to complete the project. FP agreements should tie contractor payments to the completion and agency acceptance of project deliverables. A FP contract is best used when the service or product to be developed is fully defined before the start of work. Time-and-materials (T&M) contract types are more appropriate for level of effort engagements or projects with significant unknowns. The *PMBOK*, fourth edition, section 12.1.2, further discusses FP, T&M, and other contract types.

The Procurement Officer also determines the type of solicitation:

- Invitation for Bid (IFB), which requires an award for lowest price by the Code of Maryland Regulations (COMAR)

- RFP, which allows additional flexibility for curing and a balanced weighting of evaluation criteria between price and technical solution

Agencies are encouraged but not required to use statewide contract vehicles such as Consulting and Technical Services (CATS).

4.8 Write the Scope of Work (SOW).

The Procurement Officer with the Project Manager writes the SOW, which defines the project boundaries. One of the most critical parts of a procurement document, the SOW describes in detail the project deliverables, deliverable requirements, and the work required to create those deliverables. Agencies should leverage the information in the Project Scope Statement to ensure consistency. The level of quality, specificity, and completeness of the SOW significantly impacts the quality and overall success of the project throughout its life cycle.

A well-written SOW:

- Enables offerors to clearly understand requirements and their relative importance
- Improves chances of receiving higher quality proposals
- Minimizes future needs for change orders, which lead to increased project cost and delayed project completion
- Allows both the State and the contractor to assess performance
- Reduces risk of future claims and disputes

For CATS TORFPs refer to the *CATS TORFP Master Template* on DoIT's website for instructions regarding requirements for SOW development.

4.9 Establish Proposal Evaluation Criteria.

The Business Owner and Project Manager with input from the Agency CIO develop the proposal evaluation criteria to rate proposals. The proposal evaluation criteria should be specific, objective, and repeatable and must be included in the RFP, so offerors know how the State will evaluate their proposals and under which criteria the winner will be awarded a contract or task order. Considerations for proposal evaluation criteria include:

- Proposals should be ranked rather than scored. Technical and financial proposals are evaluated and ranked separately. Technical proposal rankings are completed first and then financial rankings.
- Evaluation criteria must be clearly defined.
- All criteria must be aligned to the SOW.
- All criteria must be objective and not generic or ambiguous.
- References must be requested and must be verified as part of the due diligence in selecting the best value proposal.
- Evaluating and comparing financial proposals from different technical approaches can be difficult. In these situations, use a pricing model based on agency-provided assumptions.
- When using experience in evaluation criteria, identify clearly contractor experience or contractor personnel experience as the criteria because frequently people assigned to the project are instrumental in its success, not necessarily the contractor for whom they work.

The *PMBOK*, fourth edition, provides the following example evaluation criteria:

- Understanding of need
- Overall or life cycle cost
- Technical capability
- Risk
- Management approach
- Technical approach
- Warranty
- Financial capacity
- Production capacity and interest
- Business size and type
- Past performance
- References
- Intellectual property rights
- Proprietary rights

Additional guidance can be found on DoIT's website in these documents:

- CATS TORFP Preparation, Solicitation, and Award Process web page
- CATS I State Advance Purchasing and Inventory Control System (ADPICS) Processing Procedures
- Writing a Quality Task Order Request for Proposal
- TORFP Checklist

The *PMBOK*, fourth edition, section 12.1.3.5, provides further guidance regarding proposal evaluation and source selection criteria.

4.10 Develop the RFP.

The Procurement Officer with the assistance of the Planning Team develops the RFP after the SOW is finalized.

4.10.1 Document Description

The RFP is an invitation to contractors to submit a proposal to provide specific services, products, and deliverables.

4.10.2 Typical Content

The key elements of an RFP include at minimum:

- Administrative information
- SOW
- Technical requirements
- Contractor expertise required
- Invoicing
- Reporting requirements
- Proposal format and submission requirements
- Procedure for awarding contract or task order agreement

- Evaluation criteria
- Sample contract forms and agreements

4.10.3 Guidance for Document Development

RFPs and TORFPs should:

- Facilitate accurate, appropriate, and complete responses from prospective contractors
- Elicit multiple, competitive responses and allow for consideration of contractor suggestions for better ways to satisfy requirements
- Facilitate easy and consistent evaluation of responses
- Minimize cost, schedule, and quality risks to the State
- Comply with mandatory COMAR 21 requirements
- Document any known project risks so offerors can understand and respond with solutions that may mitigate these risks

All RFPs and TORFPs must explicitly require complete compliance with the State of Maryland SDLC and other policies and guidelines. Specifically, each TORFP must include the following language:

The TO Contractor(s) shall be required to comply with all applicable laws, regulations, policies, standards and guidelines affecting information technology projects, which may be created or changed periodically. The TO Contractor(s) shall adhere to and remain abreast of current, new, and revised laws, regulations, policies, standards and guidelines affecting project execution. The following policies, guidelines and methodologies can be found at www.doit.maryland.gov. Select “Contractor” and “IT Policies, Standards and Guidelines”.

These may include, but are not limited to:

- A. The nine project management knowledge areas in the Project Management Institute’s (PMI) Project Management Body of Knowledge (PMBOK). The TO Contractor(s) shall follow the project management methodologies that are consistent with the most recent edition of the PMBOK Guide. TO Contractor’s staff and subcontractors are to follow a consistent methodology for all TO activities.*
- B. The State’s SDLC methodology at: www.DoIT.maryland.gov - keyword: SDLC.*
- C. The State’s IT Security Policy and Standards at: www.DoIT.maryland.gov - keyword: Security Policy.*
- D. The State’s IT Project Oversight at: www.DoIT.maryland.gov - keyword: IT Project Oversight.*
- E. The State’s of Maryland Enterprise Architecture at www.DoIT.maryland.gov - keyword: MTAF (Maryland Technical Architecture Framework).*
- F. Nonvisual Access Clause for Information Technology Procurements at www.DoIT.maryland.gov – keyword: Nonvisual Access.*

All RFPs and TORFPs must explicitly require contractors who propose alternative methodologies to include an SDLC compliance approach, which describes in detail how they will comply with all SDLC requirements, in their proposals.

Additional guidance can be found on DoIT's website in:

- CATS TORFP Preparation, Solicitation, and Award Process web page
- CATS I State ADPICS Processing Procedures
- Writing a Quality Task Order Request for Proposal
- TORFP Checklist

4.10.4 **Dos and Don'ts**

- Do write concise and clear RFPs.
- Do include deliverable acceptance criteria.
- Do identify when deliverables are required.
- Do identify contractor performance metrics.
- Do require contractors to include a proposed approach for multiple-release implementation, as well as associated risks, in their proposals.
- Do include deliverables specifically relevant to the type of project.
- Don't confuse the RFP with a planning document. Planning must be completed before the RFP and documented in the RFP.

4.11 **Establish Evaluation Committee.**

The Procurement Officer and Project Manager solicit input from the Agency CIO and Business Sponsor and designate agency personnel and end users for the Agency Evaluation Committee (AEC). AEC staff should include:

- Business and technical subject matter experts (SMEs) who are knowledgeable about their respective domains and can evaluate responses
- Enough members to cover all select seller activities
- Members who have sufficient time to participate in the evaluation

4.12 **Select Contractor(s).**

The AEC follows a formal evaluation process to review and select the contractor using the evaluation method and evaluation criteria defined earlier. Under the guidance of the Procurement Officer, the AEC evaluates each proposal according to all applicable State laws and regulations. The AEC determines technical ratings based on the evaluation criteria outlined in the RFP/TORFP. After the technical rankings, the Procurement Officer forwards financial proposals for each qualified proposal to the AEC. The AEC establishes the financial rankings and determines the combined technical and financial ranking of each qualified proposal. Based on these rankings, the AEC recommends an awardee based on best value.

Specific procedures for CATS Task Order contractor selection and award are included on the CATS TORFP Preparation, Solicitation, and Award Process web page and the CATS I State ADPICS Processing Procedures document. Refer to these documents and others on DoIT's website.

4.13 Perform Phase-Closure Activities.

The Project Manager and the Planning Team prepare and present a project status review for the Agency CIO, Project Sponsor, Executive Sponsor, and other project stakeholders after completing all Planning Phase tasks. This review addresses the following:

- Status on Planning Phase activities
- Planning status for the Requirements Analysis Phase
- Status on resource availability
- Final assessment of project feasibility
- “Go-No Go” decision made to proceed to next phase, based on Planning Phase information

The Project Manager must obtain deliverable approval signatures before proceeding to the Requirements Analysis Phase.

Update the project documentation repository upon completion of the phase-closure activities.

5.0 CONCLUSIONS

The approval of the Project Management Plan, the execution of the Planning project status review, and the approval to proceed to the next phase signify the end of the Planning Phase.