

Commonwealth of Virginia



Information Technology Resource Management

PROJECT MANAGEMENT STANDARD

Virginia Information Technologies Agency

Preface

Publication Designation

Commonwealth of Virginia (COV) Information Technology Resource Management (ITRM) Standard CPM 112-02

Subject

Project Management Standard

Effective Date

10/26/2007

Supersedes

COV ITRM Standard GOV2004 - 02.3.2

Scheduled VITA Review

One (1) year from the effective date, then every two years thereafter.

Authority

Code of Virginia, §2.2-2007

(Powers and duties of the CIO)

Code of Virginia, §2.2-2010

(Additional powers of VITA)

Code of Virginia, §2.2-2017

(Powers and duties of the VITA Division of Project Management)

Code of Virginia, §2.2-2014

(Submission of information technology plans by state Agencies and public institutions of higher education; designation of technology resource.)

Code of Virginia, §2.2-2015

(Authority of CIO to modify or suspend major information technology projects; project termination)

Code of Virginia, §2.2-2018; §2.2-2019; §2.2-2020; §2.2-2021

(Project Planning approval; Project Development Approval; Procurement approval for major information technology projects; Project oversight)

Code of Virginia, §2.2-2457; §2.2-2458

(Information Technology Investment Board; membership; terms; quorum; compensation; staff; Powers and duties of the Board)

Code of Virginia § 2.2-2651

(Council on Technology Services; purpose; membership; chairman)

Scope

This Standard is applicable to all Executive Branch state Agencies and institutions of higher education (hereinafter collectively referred to as "Agencies") that are responsible for the management, development, purchase and use of information technology investments in the Commonwealth of Virginia. This Standard does not apply to research projects, research initiatives or instructional programs at public institutions of higher education. Local government entities are encouraged to consider the implications of this standard for their work.

Purpose

To establish standards for the management of information technology projects with total cost greater than or equal to \$100,000 in the Commonwealth of Virginia (COV).

General Responsibilities

(Italics indicate Code of Virginia requirements)

The Information Technology Investment Board (Board)

The Information Technology Investment Board is assigned the following general technology management responsibilities:

- Approve or disapprove the development of all major information technology projects as defined in § 2.2-2006. The Board may terminate any major information technology project recommended for termination by the Chief Information Officer pursuant to § 2.2-2015;
- Approve strategies, standards, and priorities recommended by the Chief Information Officer for the use of information technology for state Agencies in the executive branch of state government;
- Approve the four-year plan for information technology projects;
- Approve criteria for the review and approval of the planning, scheduling and tracking of major information technology projects as defined in § 2.2-2006;
- Appoint the Chief Information Officer as the chief administrative officer of the Board to oversee the operation of VITA pursuant to § 2.2-2005;
- Approve statewide technical and data standards for information technology and related systems;
- Approve statewide information technology architecture and related set of system standards;
- Adopt resolutions or regulations conferring upon the Chief Information Officer all such powers, authorities and duties as the Board deems necessary or proper to carry out the purposes of Chapter 20 of Title 2.2; and
- Submit by September 1 of each year a list of recommended technology investment projects and priorities for funding such projects to the Governor and the General Assembly.

Chief Information Officer (CIO)

The Chief Information Officer is assigned the following general technology management responsibilities:

- Monitor trends and advances in information technology; develop a comprehensive, statewide, four-year strategic plan for information technology to include specific projects that implement the plan; and plan for the acquisition, management, and use of information technology by state Agencies. The statewide plan shall be updated annually and submitted to the Board for approval. In developing and updating the plan, the CIO shall consider the advice and recommendations of the Council on Technology Services created pursuant to § 2.2-2651;
- Direct the formulation and promulgation of policies, guidelines, standards, and specifications for the purchase, development, and maintenance of information technology for state Agencies, including, but not limited to, those (i) required to support state and local government exchange, acquisition, storage, use, sharing, and distribution of geographic or base map data and related technologies, (ii) concerned with the development of electronic transactions including the use of electronic signatures as provided in § 59.1-496, and (iii) necessary to support a unified approach to information technology across the totality of state government, thereby assuring that the citizens and businesses of the Commonwealth receive the greatest possible security, value, and convenience from investments made in technology;
- Direct the development of policies and procedures, in consultation with the Department of Planning and Budget, that are integrated into the Commonwealth's strategic planning and performance budgeting processes, and that state Agencies and public institutions of higher education shall follow in developing information technology plans and technology-related budget requests. Such policies and procedures shall require consideration of the contribution of current and proposed technology expenditures to the support of Agency and institution priority functional activities, as well as current and future operating expenses, and shall be utilized by all state Agencies and public institutions of higher education in preparing budget requests;
- Direct the development of policies and procedures for the effective management of information technology investments throughout their entire life-cycles, including, but not limited to, project definition, procurement, development,

implementation, operation, performance evaluation, and enhancement or retirement. Such policies and procedures shall include, at a minimum, the periodic review by the CIO of Agency and public institution of higher education information technology projects estimated to cost \$1 million or more or deemed to be mission-critical or of statewide application by the CIO;

- *Direct the development of policies and procedures that require VITA to review information technology projects proposed by state Agencies and institutions exceeding \$100,000, and recommend whether such projects be approved or disapproved. The CIO shall disapprove projects between \$100,000 and \$1 million that do not conform to the statewide information plan or to the individual plans of state Agencies or institutions of higher education;*
- *Review budget requests for information technology from state Agencies and public institutions of higher education and recommend budget priorities to the Information Technology Investment Board;*
- *This review shall include, but not be limited to, all data processing or other related projects for amounts exceeding \$100,000 in which the Agency or institution has entered into or plans to enter into a contract, agreement or other financing agreement or such other arrangement that requires that the Commonwealth either pay for the contract by foregoing revenue collections, or allows or assigns to another party the collection on behalf of or for the Commonwealth any fees, charges, or other assessments or revenues to pay for the project. For each project, the Agency or institution shall provide the CIO (i) a summary of the terms, (ii) the anticipated duration, and (iii) the cost or charges to any user, whether a state Agency or institution or other party not directly a party to the project arrangements. The description shall also include any terms or conditions that bind the Commonwealth or restrict the Commonwealth's operations and the methods of procurement employed to reach such terms;*
- *Direct the development of policies and procedures for the effective management of information technology investments throughout their entire life-cycles, including, but not limited to, project definition, procurement, development,*

implementation, operation, performance evaluation, and enhancement or retirement. Such policies and procedures shall include, at a minimum, the periodic review by the CIO of Agency and public institution of higher education information technology projects estimated to cost \$1 million or more or deemed to be mission-critical or of statewide application by the CIO;

- *Report annually to the Governor and the Joint Commission on Technology and Science created pursuant to § 30-85 on the use and application of information technology by state Agencies and public institutions of higher education to increase economic efficiency, citizen convenience, and public access to state government; and*
- *Approve Contracts and Statements of Work for Independent Verification and Validation (IV&V) of Major IT Projects.*

Virginia Information Technologies Agency (VITA)

The Virginia Information Technologies Agency is assigned the following general technology management responsibilities:

- *Prescribe regulations necessary or incidental to the performance of duties or execution of powers conferred under the Code of Virginia, §2.2-2010;*
- *Develop and adopt policies, standards, and guidelines for managing information technology by state Agencies and institutions;*
- *Develop and adopt policies, standards, and guidelines for the procurement of information technology and telecommunications goods and services of every description for state Agencies;*
- *Direct the establishment of statewide standards for the efficient exchange of electronic information and technology, including infrastructure, between the public and private sectors in the Commonwealth; and*
- *Develop statewide technical and data standards for information technology and related systems to promote efficiency and uniformity.*

The Project Management Division (PMD) of VITA

The Division of Project Management is assigned the following general technology management responsibilities:

- *Implement the approval process for information technology projects developed in accordance with § 2.2-2008;*
- *Assist the CIO in the development and implementation of a project management methodology to be used in the development of and implementation of information technology projects in accordance with this article;*
- *Provide ongoing assistance and support to state Agencies and public institutions of higher education in the development of information technology projects;*
- *Assign Project Management Specialists to review and recommend information technology proposals based on criteria developed by the Division based on the (i) degree to which the project is consistent with the Commonwealth's overall strategic plan; (ii) technical feasibility of the project; (iii) benefits to the Commonwealth of the project, including customer service improvements; (iv) risks associated with the project; (v) continued funding requirements; and (vi) past performance by the Agency on other projects;*
- *Provide oversight for state Agency information technology projects;*
- *Review information management and information technology plans submitted by Agencies and public institutions of higher education and recommend to the CIO the approval of such plans and any amendments thereto; and*
- *Monitor the implementation of information management and information technology plans and periodically report its findings to the CIO.*

Executive Branch (Cabinet) Secretaries

Executive Branch (Cabinet) Secretaries are assigned the following general technology management responsibilities:

- *Make appropriate recommendations to the CIO regarding COV enterprise technology programs and projects, throughout the program or project life-cycle, which includes program or project initiation, planning, execution, closeout, and operations and support; and*
- *Review Agency Major IT Projects and make appropriate recommendations to the CIO,*

throughout the project lifecycle, which includes the project initiation, planning, execution, closeout, and operations and support phases.

Executive Branch State Agencies

State Agencies are assigned the following general technology management responsibilities:

- *The head of each state Agency shall designate an existing employee to be the Agency's information technology resource who shall be responsible for compliance with the procedures, policies, and guidelines established by the CIO;*
- *Prior to proceeding with any major information technology project, an Agency shall submit to the Division (PMD) a project proposal, outlining the business need for the project, the proposed technology solution, if known, and an explanation of how the project would support the Agency's business objectives and the Commonwealth's information technology plan. The Project Management Specialist may require the submission of additional information if needed to adequately review any such proposal;*
- *Upon approval of the CIO of the project plan, an Agency shall submit to the Division (PMD) a project development proposal containing (i) a detailed business case including a cost-benefit analysis; (ii) a business process analysis, if applicable; (iii) system requirements, if known; (iv) a proposed development plan and project management structure; and (v) a proposed resource or funding plan. The Project Management Specialist may require the submission of additional information necessary to meet the criteria developed by the Division (PMD);*
- *Upon approval of the Board of the project development proposal involving a major information technology project that requires the procurement of goods or services, the Agency shall submit a copy of any Invitation for Bid (IFB) or Request for Proposal (RFP) to the Division (PMD). The Project Management Specialist shall review the IFB or RFP and recommend its approval or rejection to the CIO. The CIO shall have the final authority to approve the IFB or RFP prior to its release and shall*

- approve the proposed contract for the award of the project;*

 - *Whenever an Agency has received approval from the Board to proceed with the development and acquisition of a major information technology project, the CIO shall establish an internal Agency oversight committee. The internal Agency oversight committee shall provide ongoing oversight for the project and have the authority to approve or reject any changes in the project's scope, schedule, or budget. The CIO shall ensure that the project has in place adequate project management and oversight structures for addressing major issues that could affect the project's scope, schedule, or budget and shall address issues that cannot be resolved by the internal Agency oversight committee;*
 - *Whenever a statewide or multi-Agency project has received approval from the Board, the primary project oversight shall be conducted by a committee composed of representatives from Agencies impacted by the project, which shall be established by the CIO;*
 - *On an annual basis, each Agency must report to the CIO and the director of Planning and Budget performance measurement information for technology projects. The information shall include, but not be limited to, the degree to which projects were completed on time and within budget. The performance reporting will be based on guidance issued by the CIO and the Department of Planning and Budget;*
 - *All state Agencies and public institutions of higher education shall prepare and submit information technology plans to the CIO for review and approval. All state Agencies and public institutions of higher education shall maintain current information technology plans that have been approved by the CIO;*
 - *Comply with the policies and standards, and consider guidelines for the management of information technology resources in the Commonwealth;*
 - *Plan and manage Agency IT Projects, throughout the project lifecycle, which includes the project initiation, planning, execution, closeout, and operations and support phases;*
 - *Propose the initiation of Major IT Projects to the CIO. Manage approved Major IT Projects, throughout the project lifecycle,*

which includes project initiation, planning, execution, closeout, and operations and support phases; and

- As part of the Agency IT Strategic Planning process, each Agency will develop, manage, and maintain an Agency Technology Portfolio. Agencies will use the Agency Technology Portfolio to support technology investment decisions, including the identification of all major technology procurements and projects to be incorporated in the Agency IT Strategic Plan. Agencies are required to utilize Information Technology Investment Management (ITIM) based practices in their IT strategic planning efforts. Agency Technology Portfolios will be updated at least annually, and as needed, to ensure the portfolio accurately reflects current and planned Agency technology investments.

Related COV ITRM Policies, Standards, and Guidelines

- Project Manager Selection and Training Standard (COV ITRM Standard 2003-02.3);
- Technology Management Glossary (COV ITRM Standard GOV2003-02.1); and
- Project Management Guideline (ITRM Guideline CPM 110-01).

ITRM Publication Version Control

It is the user's responsibility to ensure they have the latest version of this ITRM publication. Questions should be directed to the Supervisor of the Management Support Office in VITA's Project Management Division (PMD). When revisions of this publication have been approved by the Information Technology Investment Board (ITIB), PMD will notify the Agency Information Technology Resources (AITRs) at all state Agencies and institutions as well as other parties PMD considers to be interested in the change.

This table contains a history of this ITRM publication's revisions.

Version	Date	Purpose of Revision
Original	10/28/2004	Base Document (COV ITRM Standard GOV2004 - 02.3.2)
Revision 1	04/04/2006	Updates requirements concerning project oversight committees, project cost benefit analysis, and Independent Verification and Validation (IV&V). (ITRM Standard CPM 112-01)
Revision 2	10/03/2007	Updates requirements concerning Commonwealth IT portfolio management tool, usage of terms, and removes Appendices to separately managed documents. (ITRM Standard CPM 112-02)
Administrative	07/28/2008	Correction of typographical error.

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Section 1. Introduction

1.1 Purpose of the Commonwealth of Project Management Standard

The Commonwealth of Virginia Project Management Standard (COV ITRM Standard CPM 112-01) (PM Standard) establishes the required Agency processes and documentation for all information technology projects (IT Projects) in the Commonwealth of Virginia having a total cost greater than or equal to \$100,000. The expected outcomes or results of implementing this standard are increased IT Project success through sound investment decisions, management commitment and oversight, implementation of a best practice based project management methodology, and the establishment of defined processes that measure and evaluate project progress throughout the project lifecycle. Implementation of this standard will ultimately achieve a higher return on the Commonwealth's IT investments by promoting the use of sound management practices appropriately scaled to fit each project. This standard uses complexity to determine the degree of management and documentation required in detailed planning, execution, and closeout. The goal is to apply just the right amount of management control and documentation needed for a specific project to succeed. In summary, by using complexity to determine what documentation and controls to apply, the Commonwealth will neither over manage nor under manage an IT Project.

1.2 Authority

This standard is promulgated under the authority of the Commonwealth of Virginia Chief Information Officer (CIO) with the approval of the Information Technology Investment Board (ITIB.)

1.3 Applicability

The PM Standard is applicable to all state Agencies and institutions of higher education that are responsible for the management, development, purchase, and use of information technology investments in the Commonwealth; however, this standard does not apply to research projects, research initiatives, or instructional programs at public institutions of higher education.

Implementation of the PM Standard is effective based on the lifecycle phase of the project on November 1, 2004. All projects that were not approved for development before November 1, 2004 must implement all sections of the PM Standard. Projects approved for development before November 1, 2004 must implement oversight as directed in *Section 5. Project Oversight*.

1.4 Project Management in the Commonwealth of Virginia

The methodology and governance structure for IT Projects are derived from the *Code of Virginia*. The Commonwealth Technology Management Policy (COV ITRM Policy GOV2002-02.1), the Commonwealth Project Management Guideline (ITRM Guideline CPM 110-01), and the Project Manager Selection and Training Standard (COV ITRM Standard GOV2003 - 02.3) directly affect project management practices and activities.

The Commonwealth Technology Management Policy establishes a comprehensive and uniform policy for the management and oversight of technology investments in the Commonwealth of Virginia. The policy defines the Commonwealth of Virginia's IT Investment Management (ITIM) approach for managing information technology investments throughout their lifecycle.

The Commonwealth Project Management Guideline defines a methodology for the management of projects by executive branch Agencies in the Commonwealth of Virginia. The guideline is aligned with the Project Management Body of Knowledge (PMBOK®) published by the Project Management Institute and industry best practices. Information provided in the guideline serves as a common reference point and language for the discussion and implementation of project management in the Commonwealth.

The Project Manager Selection and Training Standard establishes the minimum qualifications and training standards for Project Managers of IT Projects. The standard has five components that accomplish this requirement. The components are:

- Project Manager Testing and Training;
- Project Manager Qualifications;
- Project Manager Mentoring;
- Project Manager Qualification and Selection Process; and
- Project Manager Qualification and Selection Process Implementation Schedule.

1.5 What is a Project?

A project can be defined in terms of its distinctive characteristics. A project is a temporary endeavor undertaken (by an organization) to develop a unique product or service. Temporary means that every project has a definite beginning and a definite end. Unique means that the product or service is different in some distinguishing way from all other products or services provided by the subject organization.

Operations and maintenance activities, supporting an existing product or service within an organization, are not projects so long as the focus of the activity is the continued use of the current product or service. Significant cost for a procurement or operational activity does not make the procurement or activity a project. For example, routine upgrades and network component replacements, conducted as a matter of course in the maintenance and operation of IT assets, are not necessarily projects. However, an activity is a project if that activity leads to modification of an existing product or service, resulting in a new unique capability within the operational or organizational environment. Utilization of project management principles and techniques in the management of operations and maintenance activities is encouraged.

The PM Standard establishes the required Agency processes and documentation for the management of all IT Projects in the Commonwealth of Virginia. The applicability of the standard is first determined by the classification of an initiative as an IT Project, based on the definition established in the *Code of Virginia* and the Commonwealth Technology Management Glossary. The Commonwealth Technology Management Glossary is available on the Virginia Information Technologies Agency (VITA) Project Management Division (PMD) website. The PMD website homepage is at <http://www.vita.virginia.gov/oversight/projects/>.

Programs and procurements are closely related to projects, and their definitions can also be found in the Commonwealth Technology Management Glossary. The PM Standard does not require specific processes or documentation for the management of programs or procurements; however, the project management best practices, presented in the PM Standard, may be applied as sound business practices for their management.

1.6 Program Management

A program is 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. A program can be established in a variety of ways:

- by an Agency to manage a group of projects collectively;
- by a Secretariat to manage a collection of projects that require collaboration across Agency boundaries;
- by the Governor to facilitate enterprise-wide (i.e. state government-wide) productivity and technology improvements, or collaboration across Secretariat boundaries; or
- by the General Assembly.

The structure, budget, scope, schedule, performance, oversight and other aspects of a program are usually defined by the entity that establishes the program. This includes the designation of a Program Manager and establishment of a Program Management Office with staff and logistical support for the program. Depending on the circumstances, the ITIB may have oversight responsibilities relating to the program. The establishment of a Program Charter, which documents the responsibilities of the Program Manager, and describes the program's staffing, funding, logistics, schedule, and relationships with other organizations, is strongly recommended.

The Program Manager and the program staff follow the procedures established in this standard for the initiation and execution of IT Projects under the program's purview. The Program Manager may perform the role of Project Sponsor, or a lead Agency may be designated to perform that role. When acting as Project Sponsor, the Program Manager will be responsible for the preparation of all project documentation, including Planning Approval and Development Approval. In addition, the Program Manager will propose an appropriate Oversight Structure in the Project Charter, including the equivalent of an Internal Agency Oversight Committee (IAOC) and Proponent Secretariat Oversight Committee (PSOC) for Major IT Projects. If a lead Agency is designated, the Agency Head will designate a Project Sponsor, retain responsibility for the documentation, (including Planning Approval and Development Approval), and the oversight structure will follow the normal Agency and Secretariat lines.

Where the ITIB has an interest or oversight responsibilities for a program, PMD will designate a Project Management Specialist to provide oversight on behalf of the ITIB and serve as liaison between the ITIB and the Program Management Office. A Project Management Specialist can also be made available to assist a Program Manager with the requirements of this Standard as they relate to the program's projects, and other

program-level planning and details, where ITIB oversight of the program is not mandated or required.

1.7 Procurement Management

In general, IT procurements are governed by policies and procedures established by VITA Supply Chain Management and documented on their website at <http://www.vita.virginia.gov/scm/>. However, the *Code of Virginia* establishes two requirements for procurements associated with Major IT Projects:

1. The Agency must submit a copy of any Invitation for Bid or Request for Proposal for review and approval by the CIO *prior* to release; and
2. Any contract resulting from an Invitation for Bid or Request for Proposal must be reviewed and approved by the CIO *prior* to award of the contract.

For Major IT Projects, CIO approval to award a contract *will not* be granted until the IT Project has received Development Approval. Where the IT Project's success is significantly dependent on a major procurement, the Project Charter must identify either the manager of the procurement or the VITA SCM point of contact as part of the project team or IAOC.

1.8 Grant Notification

The *Code of Virginia* authorizes the CIO to approve or disapprove Agency IT Strategic Plans (Agency ITSP). Agencies are required to identify in their Agency ITSP grant applications that may result in technology investments, including IT Projects, whose estimated value exceed \$100,000. The Agency must submit the Agency ITSP entry, through the Commonwealth IT portfolio management tool, and obtain Planning Approval for the technology investment *prior* to submitting any grant containing a proposed technology investment. The entry in the Commonwealth IT portfolio management tool must include a copy of the grant application. Should the grant be awarded, the Agency must update the investment entry in the Commonwealth IT portfolio management tool.

Section 2. Commonwealth IT Project Management Lifecycle

2.1 Overview

Project Management activities begin at the Initiation Phase, when the CIO approves an Agency ITSP then grants Planning Approval to an IT Project in the Agency ITSP, and proceeds through the phases of Planning, Execution and Control, and Closeout. Activities relating to strategic planning and the Pre-select and Select phases of the ITIM lifecycle are out-of-scope to the PM Standard. Once a project is completed or closed out, the resulting product or service (asset) undergoes a Post-Implementation Review (PIR) six to twelve months beyond the completion of the Execution Phase. Beyond that, the asset is managed as a part of normal Agency operations and maintenance, and its performance is monitored throughout the rest of its lifecycle as part of the ITIM process.

The *Code of Virginia* requires express approvals at specific points in the project management lifecycle, including requirements for Planning Approval and Development Approval. Project Planning, as described in the *Code of Virginia* §2.2-2018, is equivalent to the project lifecycle Initiation phase identified in the Commonwealth Technology Management Policy and the Commonwealth Project Management Guideline. Project Development, as described in the *Code of Virginia* § 2.2-2019, continues the project management lifecycle and includes the lifecycle phases of Planning, Execution and Control, and Closeout.

The PM Standard addresses the governance and management of any IT Project and is not synonymous with a specific System Development Lifecycle (SDLC.) There are several SDLC models applicable to IT Projects. The selection of an appropriate model is made based on the nature of the project and the environment in which the project tasks are performed. Agencies must establish specific model standards and selection criteria for determining which model is appropriate for a given project. The activities and tasks of a selected SDLC model are reflected in the project Work Breakdown Structure (WBS) and project schedule.

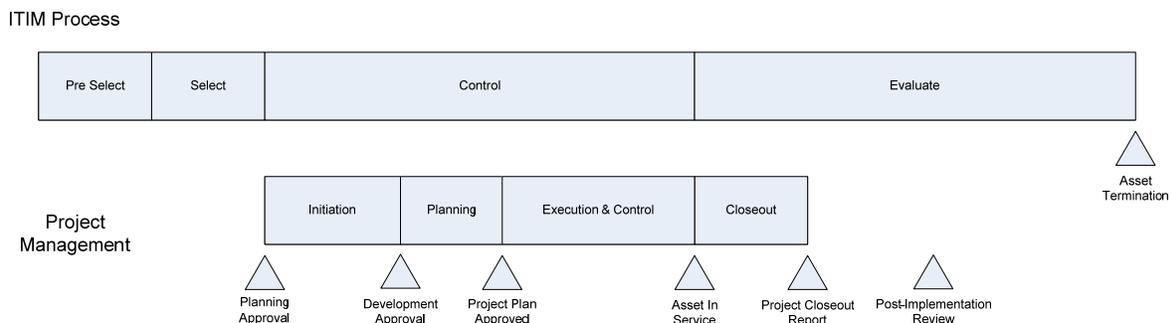
2.2 Project Categories

Technology projects are categorized as Major or Non-major. Major IT Projects are defined in the *Code of Virginia* (§ 2.2-2006) as “information technology projects that (i) are mission critical, (ii) have statewide application; or (iii) have a total estimated cost of more than \$1 million.” For the purposes of this standard, Non-major IT Projects are

those technology projects with a total estimated cost greater than or equal to \$100,000 and less than or equal to \$1 million, that are not mission critical, and do not have statewide application. Non-major IT Projects with a total estimated cost less than \$100,000 are managed at the Agency level, and use of the best practices contained in the PM Standard and the Commonwealth IT portfolio management tool is strongly encouraged, but not required.

2.3 Overlap Between ITIM and Project Management

The Commonwealth Technology Management Policy (COV ITRM Policy GOV 2002 - 02.1) defines the phases in the ITIM lifecycle of a technology investment. IT Project Management commences in the Control phase of the ITIM lifecycle, after the CIO of the Commonwealth grants Planning Approval to a proposed IT Project contained in the Agency ITSP, and continues through the Evaluate phase to the completion of a project's Post-Implementation Review (PIR).



2.3.1 Exhibit: Overlap of ITIM and Project Management

2.4 Project Complexity Classification

Project complexity drives both the amount of oversight required and the extent of project documentation necessary to adequately manage a given project. The IT Project Complexity Model, which is available on the PMD website, provides a scoring mechanism to determine the level of complexity associated with a project. The PMD website homepage is at <http://www.vita.virginia.gov/oversight/projects/>. The IT Project Complexity Model scoring elements include the level or degree of risk, the technical requirements, the number of members on the project team, total project cost, and the percent of the Agency IT budget the project represents. Each question in the model has four potential responses. Each response has a numerical value. The values from the

responses selected are summed, resulting in a numerical score that correspond to a level of project complexity: High, Medium, or Low.

High complexity projects are typically high risk and/or high dollar value projects, requiring extensive integration and stringent control processes. The nature of high complexity projects drives the requirement for extensive planning, documentation, and strictly enforced change and configuration management processes. Although Medium complexity projects require thorough planning, typically less documentation and control processes are needed to deliver the project product or service as specified in the project scope. Low complexity projects also require complete planning but less documentation and fewer control processes are needed to deliver the project product or service as specified in the project scope.

The project controls, documentation, and required information for IT Projects of High, Medium, or Low Complexity are identified in the IT Project Documentation Summary, which is available on the PMD website. The PMD website homepage is at <http://www.vita.virginia.gov/oversight/projects/>.

2.5 Commonwealth IT Project Management Governance Structure

Clearly defined governance roles and responsibilities facilitate successful accomplishment of project activities. A graphical depiction of the Commonwealth IT Project Management Governance Structure is available on the PMD website. The PMD website homepage is at <http://www.vita.virginia.gov/oversight/projects/>.

2.5.1 Commonwealth Information Technology Investment Board

Commonwealth Technology Management is governed by the ITIB, which is comprised of members appointed by the Governor and the Joint Rules Committee of the General Assembly, plus the Secretary of Technology, who serves in an ex officio role with voting privileges and the Auditor of Public Accounts, who is a non-voting member. The ITIB is charged with setting technology strategy and with reviewing and prioritizing major technology investments, including project development and associated procurements proposed by Commonwealth executive branch Agencies and institutions of higher education. The ITIB also approves Major IT Project development, associated procurements, the termination of Major IT Projects, and the four-year statewide plan for technology. Decisions regarding termination of Major IT Projects at institutions of higher education will be made in consultation with the institution's board of visitors.

The ITIB may authorize the CIO to approve or disapprove Major IT Projects and procurements within specific guidelines.

2.5.2 Commonwealth Chief Information Officer

The CIO serves as the chief administrative officer of VITA. Other responsibilities of the CIO include developing policies, standards and procedures for technology and project management, granting Planning Approval for all IT Projects with a value that equals or exceeds \$100,000, approving IT procurements exceeding \$100,000, and approving Invitations for Bids, Requests for Proposals, and contracts. In addition, the CIO may be authorized to approve or disapprove Major IT Projects for development by the ITIB, subject to a specific resolution of the ITIB. The CIO may also direct the modification or suspension of any Major IT Project that has not met the performance measures agreed to by the CIO and the sponsoring Agency or public institution of higher education or if such action is appropriate and consistent with the terms of any affected contracts. A decision regarding suspension of a Major IT Project at an institution of higher education will be made in consultation with the institution board of visitors.

2.5.3 Cabinet Secretaries and Agency Heads

Cabinet secretaries and Agency heads may designate secretariat and Agency enterprise technology programs in support of secretariat or Agency initiatives, with the approval of the CIO. Secretariat or Agency enterprise technology programs and projects will be defined, funded, developed, approved, and managed utilizing guidance established within the Commonwealth Technology Management Policy.

2.5.4 Proponent Secretariat Oversight Committees

Proponent Secretariat Oversight Committees (PSOC) established by the CIO provide oversight for Major IT Projects as prescribed by this Standard. The PSOC represents the business or functional owners and will have the following membership at a minimum:

- Proponent Secretary (Chair ex officio);
- Proponent Deputy Secretary (Chair);
- CIO Representative (VITA – Associate Director for Project Management);
- Secretary of Finance Representative – (Department of Planning and Budget – DPB Analyst);
- Proponent Agency Head or designated substitute; and
- Others, as appointed by the Chair and CIO.

The PSOC will validate proposed project business cases and make recommendations to the CIO on Major IT Projects proposed for development. The Committee will also review Independent Verification and Validation (IV&V) reports for Major IT Projects and may recommend corrective actions. The Committee will accept escalated issues from the IAOC to consider and resolve, or forward their recommendations to the CIO for final resolution.

2.5.5 Internal Agency Oversight Committees

The IAOC is appointed on a project by project basis, by the CIO upon recommendation of the Agency. The membership is specified in the Project Charter. Generally, all stakeholders identified in the charter are represented on the IAOC. A Project Management Specialist from PMD will participate as a non-voting member. The IAOC will have the following membership at minimum:

- Proponent Agency Head (Chair) or designated substitute;
- Project Sponsor;
- Project Manager;
- Stakeholder representative(s) as appropriate for the project; and
- PMD (non-voting).

The IAOC provides oversight and direction to the Major IT Project for which they were chartered. The IAOC will review and approve the schedule baseline and all project documentation before forwarding those documents to the CIO. In addition, the IAOC will attempt to resolve all project issues at their level of authority.

When there are proposed project baseline changes (i.e. project budget, scope, schedule, or performance) that exceed 10% of the original or most recently approved baseline(s), or when the Agency oversight committee cannot resolve issues, the committee chair will escalate the proposed baseline changes or issues for resolution to the PSOC.

Meetings by the IAOC will occur, at a minimum, on a monthly basis to effectively provide the oversight and direction necessary for Major IT Projects. The IAOC will have a prepared agenda that will address recent and expected changes to the standard project baselines – project budget, scope, schedule, and performance. Relevant questions from which an agenda can be derived include:

- Is the project on track to meet planned business goals and the associated measures of success?

- Are the costs within the planned budget?
- Is the project on schedule?
- Does the project remain within the approved scope? and
- How is the project being managed to minimize or mitigate identified risks?

The IAOC should be familiar with the project's Risk Management Plan and associated contingency plans to know how to act accordingly should critical risks become reality. Meeting minutes are essential for the project record, and will be formally approved by the committee from the previous meeting, and taken for the current meeting.

2.5.6 Project Management Division

PMD is established in the *Code of Virginia* and serves as the Commonwealth Enterprise Program Management Office. Roles and responsibilities are established in the Commonwealth Technology Management Policy. On behalf of the CIO and the ITIB, PMD implements an integrated approach to the management of information technology investments.

Project Management Specialists within PMD consult with Agencies and assist them with the analysis and documentation of projects. In addition, they review project documentation and prepare recommendations for the CIO and ITIB as appropriate. Project Management Specialists review monthly status reports and prepare independent analyses of the project's progress, including recommendations for the CIO's assessments. At the direction of the Joint Legislative Review and Audit Commission (JLARC) project oversight services provided by Project Management Specialists may be billed to the Agencies receiving those services.

2.5.7 Project Sponsor

The Project Sponsor is the individual, usually part of the Agency management team, who makes the business case for the project. A Program Director can also serve as a Project Sponsor. This individual usually has the authority and responsibility to define project goals, secure resources, establish project priorities, and resolve intra- and inter-organizational issues and conflicts. In addition, the Project Sponsor and Project Manager work closely to ensure that project objectives are met, resources, especially functional subject matter experts are made available to the project and issues are resolved as expeditiously as possible. Project Sponsors should be prepared to dedicate a portion of their time on a weekly, if not daily basis, to attend to project in detail. The Project Sponsor should be a member of the IAOC. Additional information on the

Project Sponsor's specific responsibilities as they apply to Major and Non-major IT Projects are incorporated into the discussions of those topics.

2.5.8 Program Manager

Where appointed, the Program Manager provides oversight and coordination of assigned projects; guides and supports the development and enhancement of project management capabilities within an enterprise program office or operational organization(s); ensures appropriate project management processes and procedures are in place; and enforces adherence to established standards and guidelines in the delivery of IT Projects. Not all projects are part of programs, so there may be no Program Manager in the chain of responsibility.

2.5.9 Project Manager

Every IT Project must have a designated Project Manager. The Project Manager is responsible for the management of the project from planning through closeout. Project Sponsors will qualify and approve Project Managers of Non-major IT Projects. The CIO will consider the Non-major IT Project Manager's qualification status as part of the criteria for Non-major IT Project Development Approval. Project Managers for Major IT Projects are responsible for reporting project status.

2.6 Project Selection and Planning Approval

Project Selection and Planning Approval occur under the auspices of the ITIM process and are outside the scope of the PM Standard. The Agency ITSP is incorporated within the Agency Strategic Plan which is submitted to the Department of Planning and Budget (DPB). If a proposed project is not part of the Agency ITSP, the Agency will develop a Project Business Alignment and an Investment Business Case in the Commonwealth IT portfolio management tool, and submit those documents for CIO approval.

Agencies must derive benefits from the selection and implementation of technology projects. Those benefits frequently involve improvements to the Agency's business processes. Rather than selecting targets for operational improvements based on current performance, Agencies are encouraged to seek out top performers across government and industry sectors and learn from their experiences. One approach to applying the lessons learned by recognized best-in-class performers is Benchmarking.

Benchmarking is the process of improving performance by continuously identifying, understanding and adapting an organization's practices and processes to recognized best practices and processes (American Productivity and Quality Center. 1995. *Benchmarking: Leveraging Best-Practice Strategies*). Benchmarking involves the selection of a business process to study, identification of one or more organizations acclaimed for best practices in the performance of that process, analysis of their processes, establishment of metrics that demonstrate successful implementation of the best practices and reengineering the organization's processes to those best practices.

The ultimate goal of Benchmarking is the superior performance of the selected business function (Robert Camp. 2006. *Benchmarking: The Search for Industry Best Practices That Lead to Superior Performance*). Benchmarking a business function against recognized best-in-class performers supports ITIM Project Selection by providing objective metrics for measuring the benefits of a proposed IT Project.

Section 3. Major IT Projects

3.1 Major IT Project Initiation

Major IT Project Initiation begins after the CIO approves an Agency ITSP, then either grants Planning Approval to an IT Project in the Agency ITSP, or approves the submission of an individual Project Business Alignment and Investment Business Case for an IT Project not in the Agency ITSP. Project Initiation is a business decision and business owners must take action to insure the success of the project. The Project Sponsor is responsible for management of the Initiation Phase of the project lifecycle. The Investment Business Case, Project Business Alignment, and other documents are stored in the Commonwealth IT portfolio management tool. Information from those documents is used to populate project management documents going forward. The objectives of the Initiation Phase are to complete the analysis of solution alternatives, to document the selected solution and the business case for pursuing that alternative, and to gain Development Approval from the CIO and ITIB. Please refer to *2.3.1 Exhibit: Overlap of ITIM and Project Management* for a graphic depiction of how Planning Approval and the Initiation Phase relate to the IT Project Management lifecycle.

3.1.1 Project Manager Qualification and Selection

Although the Project Sponsor is responsible for management of the Project Initiation Phase, a Project Manager designee may be appointed to assist the Project Sponsor at this time. Qualification and selection of a Project Manager is required *prior* to the submission of the Project Charter and Project Proposal seeking Development Approval.

The Project Manager for a Major IT Project must be either an employee of the Commonwealth or a consultant appointed and selected (qualified) by the Project Sponsor, and approved by the CIO in accordance with the Project Manager Selection and Training Standard (COV ITRM Standard GOV2003 - 02.3).

3.1.2 Project Analysis

The Agency will conduct an analysis of potential technology solutions and the costs, benefits, and risks associated with each alternative. The Commonwealth IT portfolio management tool and the Commonwealth Project Management Guideline (ITRM

Guideline CPM 110-01) provide templates, tools, and detailed guidance on project analysis and solution selection.

3.1.3 Cost-Benefit Analysis

An economic feasibility study or Cost-Benefit Analysis (CBA) is required for all Major IT Projects to assist in solution selection. The Commonwealth IT portfolio management tool includes a link to the CBA worksheet. When completed, the CBA worksheet should be uploaded to the Commonwealth IT portfolio management tool. The Commonwealth Project Management Guideline (ITRM Guideline CPM 110-01) also provides detailed guidance on the performance of a CBA.

A CBA provides the information needed to make an informed decision about the cost and benefits, or value, of various potential solutions. The CBA defines project objectives and alternative solutions in terms of costs and benefits. It also documents important assumptions used to derive the project costs and benefits. The final product is a consistent document that provides an understanding of the economic feasibility of the solutions being considered. The completed CBA is a major supporting document for Development Approval consideration.

3.1.4 Preliminary Risk Assessment

Using the Commonwealth IT portfolio management tool, the Project Sponsor or Project Manager designee makes a preliminary assessment of the potential project risks associated with budget, external dependencies, management support, criticality, potential for failure, impact of failure, and complexity. The Commonwealth IT portfolio management tool calculates a preliminary risk score, which is used in the analysis of the Development Approval request. This information also feeds the project's risk management planning and management throughout the life of the project.

3.1.5 Project Proposal Preparation

Using the Commonwealth IT portfolio management tool, the Project Sponsor/Project Manager designee prepares the Project Proposal. The Project Proposal sets forth the specific solution that the Agency intends to undertake and the business case for pursuing that specific solution. The Project Proposal template is fed from the analyses and assessments performed during the Initiation Phase. All sections of the Project Proposal templates must be completed before submission to PMD.

3.1.6 Project Charter Preparation

The Project Charter formally communicates the existence of the project, serves as the basis for project planning, appoints the Project Manager, and authorizes the expenditure of resources. In the Project Charter, the Agency will propose the membership of an IAOC for CIO approval (Code of Virginia, § 2.2-2021 – Project Oversight). Minimum membership requirements for the IAOC are defined in *Section 2.5.6 Internal Agency Oversight Committees*. Other key stakeholders will sign the Project Charter as appropriate.

3.1.7 Agency Approval

When the Project Proposal, Project Charter, Project Manager Qualification, and other documents are completed, the Project Manager submits them to the Project Sponsor and Agency Head, in turn, for approval. Electronic copies of the signed approvals are loaded into the Commonwealth IT portfolio management tool.

3.1.8 Proponent Secretariat Approval

The Project Manager will notify PMD when Agency approval has been accomplished. PMD will perform an initial review of the documents and provide feedback to the Agency. PMD will also coordinate a PSOC meeting to review the Project Proposal and Project Charter. The PSOC will recommend approval or rejection of the project to the CIO, and may also recommend conditions or contingencies for approval. If the PSOC recommends approval, the Proponent Secretary or Deputy Secretary will sign the Project Charter. PMD will note the approval and load an electronic copy of the signed charter into the Commonwealth IT portfolio management tool.

3.1.9 PMD Review and Recommendations

The final review by PMD will include an analysis of the Project Proposal and Project Charter using balanced scorecard criteria approved by the ITIB. PMD uses a modified Delphi methodology to validate and quantify the subjective analysis of independent reviewers. The modified approach requires independent review by at least two Project Management Specialists. The results are consolidated and reviewed by the PMD Project Management Office Supervisor. The PMD Associate Director will approve the final evaluation to be presented to the CIO and ITIB. PMD will recommend approval or rejection of the project to the CIO.

3.1.10 CIO Review and Approval

The CIO reviews the balanced scorecard recommendation, Project Proposal, and Project Charter. If the CIO approves the project, he will forward the balanced scorecard recommendation, Project Proposal, and Project Charter to the ITIB.

3.1.11 ITIB Review and Approval

The ITIB has delegated authority to the CIO for approval or disapproval of Major IT Projects and procurements so long as the CIO provides notice to the ITIB members. If no member of the ITIB requests a review of the project within a five business day comment period, the CIO will issue a letter formally approving the project for development.

If any member of the ITIB requests a review of the project, the CIO will develop and issue a recommendation, and will direct PMD to coordinate (with the Agency or institution) the presentation of the proposal and charter to the ITIB. PMD and the Agency or institution will present the project to the ITIB. Upon approval of the ITIB, the Chair of the ITIB will issue a letter formally approving the project for development and, subject to CIO review and approval, may authorize procurements greater than or equal to \$100,000. Contract awards and procurements for Major IT Project development activities will not be authorized before Development Approval has been secured.

CIO Development Approval expires if the project has not started within 90 calendar days after the project start date identified in the Project Charter. The PMD Project Management Specialist assigned to the project will determine if the project has been started by the expiration date. If Development Approval expires, the Project Manager must update the appropriate project documentation and resubmit the project to PMD for a new Development Approval.

Final approval will be noted in the Commonwealth IT portfolio management tool by PMD and electronic copies of signed documents will be uploaded to the repository. When approved, the Project Proposal and Project Charter constitute the initial baseline for the project.

3.1.12 Timeline

Agencies may submit IT Projects for Development Approval at any time. Normally, ITIB procedures allow Board Members to independently review the CIO

recommendation for Development Approval. Board Members may request that projects be presented for discussion at the next board meeting. There is a 30 work day processing time associated with projects that may require review at a scheduled board meeting. The 30 work days includes review by the PSOC, PMD, CIO, and ITIB. Project Proposals and Project Charters received within 30 work days of a scheduled board meeting risk being deferred to the next board meeting. Specific meeting dates are posted on the ITIB website at <http://www.vita.virginia.gov/itib/itib.cfm>.

3.2 Major IT Project Planning

Once Development Approval has been granted, the Project Manager initiates the Planning Phase. In this phase, all necessary planning documents are developed and approved. The objective of this phase is CIO approval of the detailed Project Plan. The Commonwealth IT portfolio management tool includes templates for the Planning Phase, and shall be the repository for all Planning Phase documents. Much of the information required for the completion of these documents is carried forward from the Initiation Phase.

Project Planning is the process of defining and organizing activities and resources to deliver a unique product or service. The Project Plan is the primary document developed during the planning phase of the project lifecycle and communicates project activities in terms of:

- what tasks will be performed;
- who will perform the tasks;
- when will the tasks be performed;
- what resources will be applied to accomplish the tasks; and
- how the tasks will be sequenced.

The Project Plan must be approved by the IAOC, the Project Sponsor, and the Agency Head, then submitted with a recommendation for CIO approval. The CIO authorizes PMD to review and approve the Project Plans if the project baselines accurately reflect the Project Charter. Project Plans are revised as needed to reflect changes approved by the Agency Project Management Organization and the IAOC.

A fundamental component of Project Planning is the development of metrics to gauge and evaluate project progress. The primary tool used in performance measurement is Earned Value Analysis (EVA). The application of EVA is documented in the Project

Performance Plan and the monthly Project Status Report in the Commonwealth IT portfolio management tool.

3.2.1 Project Status Reporting

Once Development Approval has been granted, the Project Manager will begin reporting against the project's budget, scope, schedule, and performance using the Commonwealth IT portfolio management tool. The Project Manager will initiate a monthly Project Status Report at the beginning of each month, based on the previous month's activity. The Project Manager must update:

- Key Status Indicators;
- Project Status Assessment;
- Measures of Success;
- Actual Expenses;
- Project Baseline; and
- Project Milestones.

Measures of success are defined for the project and reported throughout the project's life. Measures of success are metrics that measure the progress of the project and ultimately, its success or failure. The measures of success are based on the Project Scope and Project Objectives in the Project Charter. While cost, schedule, and scope control are traditional measures of project activity, Project Managers are encouraged to identify and monitor measure of success unique to their IT Project's deliverables.

Approval of the monthly Project Status Report is obtained according to the following schedule:

- By the 5th business day of the month, the Project Manager's draft report must be completed;
- By the 8th business day of the month, the Agency Sponsor approves the draft status report . Beyond this date, the Project Manager should not attempt any further edits of that month's report;
- By the 10th business day of the month, the Proponent Secretary evaluates the approved status report; and
- On the 11th business day of the month, the reports are available to the Project Management Division and CIO.

An extract from the status report will be taken by PMD and published on the Commonwealth Major IT Project Status Dashboard. Monthly project status reporting continues through the Planning, Execution and Control, and Closeout phases, until the Project Closeout Report has been submitted.

3.2.2 Complexity Analysis

The Project Manager must complete a Complexity Analysis of the project in the Commonwealth IT portfolio management tool. This analysis drives the requirements for the components of the Detailed Project Plan that the Project Manager must prepare. See *Section 2.4 Project Complexity Classification* for additional details.

3.2.3 Detailed Project Plan Preparation

At minimum, all Major IT Projects are required to complete a Project Schedule and selected sections of the:

- Project Management Plan Executive Summary;
- Project Performance Plan;
- Budget Plan;
- Risk Management Plan; and
- Quality Management and IV&V Plan.

Based on the results of the Complexity Analysis, additional documents may be required, such as a:

- Work Breakdown Structure;
- Resource Plan;
- Procurement Plan;
- Communications Plan; and
- Change and Configuration Management Plan.

These documents will be completed using the templates and guidance provided in the Commonwealth IT portfolio management tool.

3.2.4 Internal Agency Oversight Committee Approval

When the required Project Plan documents have been completed, the Project Manager will present them to the IAOC for review and approval. The Project Manager will note

IAOC approval in the Commonwealth IT portfolio management tool, upload electronic copies of signed documents into the repository, and notify PMD that the IAOC has approved them.

3.2.5 PMD Review and CIO Approval

The Project Management Specialist will review the Project Plan documents for completeness and quality. The CIO has delegated approval of these documents to PMD if the project baselines accurately reflect the Project Charter.

3.3 Major IT Project Execution and Control

Approval of the Project Plan establishes the project baselines and signals that the Project Manager may proceed to assemble project resources and execute the project.

EVA is the preferred method of performance measurement, or control, and is employed during the Execution and Control Phase of the project lifecycle. EVA integrates project budget, scope, and schedule measures to assess project performance. Results from an EVA may indicate potential deviation from the Project Plan baseline. EVA processes are incorporated into the project through performance planning.

The IAOC will conduct regular reviews of Major IT Project execution. IAOC meeting agendas, minutes, presentations and other documents should be uploaded into the Commonwealth IT portfolio management tool.

3.3.1 Baseline Adjustments

Project Managers for Major IT Projects must submit baseline changes resulting in changes to project budget, scope, schedule, and performance for approval through the Change Control Request documents in the Commonwealth IT portfolio management tool. Aggregate changes to the approved project budget, scope, and schedule that are less than 10% of the approved Project Charter, or changes that are less than 10% of the latest approved baseline, must be approved by the project's IAOC and reported to PMD.

If there are aggregate changes to the approved project budget, scope, and schedule that are equal to or greater than 10% of the approved Project Charter, or changes that are equal to or greater than 10% of the latest approved baseline, the Project Manager (after IAOC approval) submits a Change Control Request to PMD. PMD coordinates a review

of the proposed change by the PSOC. That PSOC reviews and recommends approval or disapproval to the CIO. The CIO approves or disapproves changes to the baseline. Additionally, the CIO reports the approved changes in baseline of Major IT Projects to the ITIB.

3.3.2 User Acceptance

User Acceptance criteria are established in the Project's Performance Plan (developed during Project Initiation.) The Execution and Control Phase ends when the Project Sponsor has agreed to accept the deliverable(s) in the state that they exist. The Project Manager and Project Sponsor must document acceptance of each deliverable. They will also identify any issues that remain outstanding, and the agreed upon plan for resolution of the outstanding issues. A template for a User Acceptance Report is provided in the Commonwealth IT portfolio management tool.

3.4 Major IT Project Closeout

Closeout is the last phase in the Commonwealth project lifecycle. The Closeout Phase begins when the user accepts the project deliverables, establishing operational products or services, and the project oversight authority concludes that the project has satisfied the project purpose described in the Project Charter. The major focus of the Closeout Phase is administrative closure, logistics, and documentation of lessons learned or best practices.

3.4.1 Project Closeout Report

Using the Commonwealth IT portfolio management tool, the Project Manager must complete a Project Closeout Report. The Project Closeout Report is the Project Manager's final report of the project's accomplishments against its project budget, scope, schedule, and performance baselines. It also presents a plan for the operation and maintenance of the project's deliverables and the disposition of the project's documentation. The Project Closeout Report is usually submitted between 60 and 120 days after project execution has been completed, depending on the receipt, payment and reporting on final project expenses and resolution of any final issues. The Project Closeout Report must be approved by the Project Sponsor, Agency Head, and IAOC before submission to PMD.

3.4.2 Lessons Learned and Best Practices

Using the Commonwealth IT portfolio management tool, the Project Manager must report lessons learned and best practices to the Project Manager Development Program (PMDP) Information Clearinghouse. PMD will review and approve additions to the PMDP Information Clearinghouse before publishing them on the PMD website. The PMD website homepage is at <http://www.vita.virginia.gov/oversight/projects/>.

3.5 Major IT Project Post-Implementation Review

The Project Sponsor will convene a PIR of Major IT Project-delivered products or services between six and twelve months after the submission of the Project Closeout Report. The PIR should include the project stakeholders identified in the Project Charter and Proposal and a representative from PMD. The PIR evaluates whether the products or services are delivering the expected results and is focused, therefore on validating the project CBA and return on investment analysis projected in the Project Proposal.

From an ITIM perspective, the PIR should also be used to validate the product's or service's performance criteria and data collection, and establish the "control limits" for the selected criteria. The PIR results will be documented and saved in the Commonwealth IT portfolio management tool.

Section 4. Non-major IT Projects

4.1 Non-major IT Project Initiation

Non-major IT Projects are technology projects with a total estimated cost less than or equal to \$1 million, that are not mission critical, and do not have statewide application. Based on the recommendation of the PMD, the CIO approves or disapproves planning and development of Non-major projects that have a cost greater than or equal to \$100,000 and less than \$1,000,000. Selected institutions of higher education (Virginia Community College System, and members of the Virginia Association of State Colleges and University Purchasing Professionals) have delegated authority from the CIO to make the decision on Planning Approval and Development Approval of Non-major IT Projects from \$100,000 to \$1 million. An institution of higher education with delegated authority will provide regular status reports on Non-major IT Projects as required by the CIO. Delegated authority does not exempt the institutions of higher education from implementation of or adherence to Commonwealth policies and standards for the management of Non-major IT Projects. The following procedures apply to all Non-major IT Projects.

4.1.1 Agency-level Activities

The Initiation Phase for Non-major IT Projects proceeds in much the same manner as Initiation Phase for Major IT Projects and must be documented in the Commonwealth IT portfolio management tool. Having made the business decision to pursue a technology solution to a business problem, the Project Sponsor conducts a Project Analysis, CBA, and Preliminary Risk Analysis of the potential project, documenting those activities in the Commonwealth IT portfolio management tool. Prior to the submission of the Project Proposal and Project Charter, a qualified Project Manager is appointed and qualified by the Project Sponsor. The CIO will approve the Project Manager appointment as part of Development Approval.

4.1.2 PMD Review and Recommendation

The Agency will submit the completed Project Proposal and Project Charter to PMD for review. The assigned Project Management Specialist will conduct a balanced scorecard review of the Project Proposal and Project Charter and prepare a recommendation to

the CIO. After review and approval by the Project Management Office Supervisor, the recommendation will be forwarded to the CIO for approval. Agencies should allow 15 work days for review and approval of the Project Proposal and Project Charter by PMD and the CIO.

4.1.3 CIO Review and Approval

The CIO reviews the balanced scorecard recommendation, Project Proposal, and Project Charter. If the CIO grants Development Approval, the Agency may proceed to the Project Planning Phase. After the CIO approves the Project Proposal and Project Charter, the AITR will upload these documents into the Commonwealth IT portfolio management tool.

4.2 Non-major IT Project Planning and Execution and Control

When a Non-major Project receives Development Approval, the Project Manager proceeds to plan and execute the project. The Project Manager must complete a Complexity Analysis of the project. This analysis drives the requirements for the components of the detailed Project Plan that the Project Manager must prepare. Those documents shall be submitted to the Project Sponsor for review and approval. The Agency will conduct regular reviews of the project execution and establish procedures for regularly reporting project status to the Agency Head and other key stakeholders.

4.3 Non-major IT Project Closeout

As is the case for Major IT Projects, when the Project Sponsor has accepted the Non-major IT Project's deliverables, the Project Manager initiates action to finalize the project's expense accounting, to ensure that an archive of the project's documents is adequately stored, and to close the project management office. In addition to submitting the Project Closeout Report to PMD, the AITR will upload this document into the Commonwealth IT portfolio management tool.

Section 5. Project Oversight

5.1 Enterprise IT Project Oversight

Enterprise projects (multi-Agency, statewide application projects) are Major IT Projects. The CIO will establish a multi-Agency oversight committee for enterprise projects composed of representatives from all Agencies or institutions of higher education impacted by the project. The multi-Agency oversight committee will exercise primary project oversight, in the same manner and with the same limitations, as an IAOC.

5.2 Major IT Project Oversight

Major IT Projects are subject to periodic oversight review by the CIO. For Major IT Projects, the CIO is required by the *Code of Virginia* to establish IAOCs, multi-Agency oversight committees for statewide application projects, and oversight structures for addressing issues that cannot be resolved by an IAOC. The PMD Project Management Specialist will develop an Oversight Strategy for each new Major IT Project, and an Oversight Plan that details how the project will be monitored for progress, tracked on issues, and evaluated for deliverables. The Oversight Plan is shared with the Project Sponsor, Project Manager, and significant project stakeholders to accurately communicate the expectations and requirements related to the oversight of their Major IT Project.

The IAOC structure and designated committee members are identified in the Project Charter. When the IAOC cannot resolve an issue, PMD will assist the Agency in coordination with the Chair of the PSOC to convene a meeting of that committee. The PSOC will review and resolve the issue or make recommendations to the CIO for issue resolution beyond the scope of the secretariat. The CIO will review the recommendations of the PSOC. The CIO may approve or disapprove an issue resolution strategy, or may recommend to the ITIB suspension or termination of the project.

The baseline for project budget, scope, schedule, and performance established in the Project Charter is the initial baseline for the project. Oversight for changes to the project baseline are described in *Section 3.3.1 Baseline Adjustments*.

The CIO may suspend a project or recommend termination of a project to the ITIB. In addition, Agencies may request suspension or cancellation of active projects, or reactivation of suspended projects. The CIO will approve all suspension, cancellation, and reactivation requests made by Agencies. To reactivate a project, Agencies will submit a written request and revised charter and proposal through PMD and the PSOC. Based on PMD and PSOC recommendations, the CIO may approve suspension, cancellation, and reactivation or require review and approval of the project by the ITIB.

5.3 Non-major IT Project Oversight

Oversight of Non-major IT Projects is exercised directly by the Agency through the Project Sponsor. Sponsors for Non-major IT Projects are encouraged but are not required to establish an oversight committee. The Project Sponsor approves the Project Plan and establishes the project baselines. The Project Sponsor also approves changes to project baselines. When a change to the project baseline results in a revised cost or schedule estimate which exceeds 20% of the cost or schedule estimate documented in the Project Charter, the Project Sponsor must notify PMD of the baseline change. In addition, the Project Sponsor must notify PMD of any changes to project performance or scope documented in the Project Charter. PMD will review and make recommendations to the CIO. The CIO must approve or disapprove changes to project budget, scope, schedule, or performance resulting in variances exceeding 20% of the estimates established by the approved Project Charter or last approved baseline.

Section 6. Independent Verification and Validation

6.1 IV&V Overview

IV&V is a highly successful quality assurance process carried out by an independent third party. IV&V grew out of a best practice developed in the National Aeronautics and Space Administration. The Technology Management Policy (COV ITRM Policy GOV 2002 - 02.1) requires all Major IT Projects to develop and implement an IV&V strategy. The policy states: *“As a supplement to regular project review and oversight, Project Managers for all Major IT Projects must implement an independent verification and validation (IV&V) strategy. IV&V should be performed by an organization that is technically, managerially, and financially independent of the development organization. The IV&V strategy for Major IT Projects will be reviewed and approved as part of the Major IT Project oversight process. IV&V of Non-major IT Projects is encouraged.”*

Verification and Validation are processes that seek to:

- Verify, objectively, that the results of project activities fulfill their requirements; and
- Validate, objectively, that the project products and services satisfy user needs under defined operating conditions.

IV&V adds value to project management and oversight by:

- Increasing the probability that project products and services meet their requirements;
- Improving product and service performance;
- Supporting a sponsor's decision to accept a product or service;
- Reducing development cost;
- Shortening the project schedule;
- Reducing risk; and
- Improving project management and oversight review and decision making.

Generally, Project Managers design their IV&V Plans to fit the size, scope, and complexity of the project. During detailed Project Planning, the comprehensive IV&V Plan is completed as part of the Quality Management Plan. An electronic copy of all

final IV&V reports will be uploaded into the Commonwealth IT portfolio management tool.

The IV&V best practice is to acquire the services of a qualified and independent service provider.

6.2 Requirements for IV&V Plans by Complexity

IV&V Plans for high complexity Major IT Projects will include the review of the technical, financial, and management aspects of the project and will establish scheduled IV&V reviews and reports as follows:

- At completion of the detailed Project Plan and before project execution begins;
- At a minimum, one in-progress review during project execution and quarterly reviews for all projects with schedules greater than 9 months duration;
- At the testing phase (if testing is a component of the project), validate the test plan and testing; and
- At project closeout to validate the success of the project.

IV&V Plans for medium complexity Major IT Project will include the review of the technical, financial, and management aspects of the project and will establish scheduled IV&V reviews and reports as follows:

- At completion of the detailed Project Plan and before execution begins;
- At a minimum, one in-progress review during project execution and semi-annual reviews for all projects with schedules greater than 18 months duration; and
- At project closeout to validate the success of the project.

IV&V Plans for low complexity Major IT Project will include the review of the technical, financial, and management aspects of the project and will establish scheduled IV&V reviews and reports as follows:

- At completion of the detailed Project Plan and before execution begins.
- At project closeout to validate the success of the project.

6.3 IV&V Roles and Responsibilities

6.3.1 Chief Information Officer

The CIO is required by the *Code of Virginia* to oversee Major IT Projects so that the ITIB, the Governor, and the General Assembly can be assured that IT investments are well managed and will deliver the expected outcomes and return on investment. The CIO directs the PMD to develop, implement, and manage an ongoing centralized program for IV&V of Major IT Projects.

6.3.2 Proponent Secretariat Oversight Committee

As needed, PMD provides copies of IV&V reports to the members of the PSOC, who may review the reports and any analysis provided by PMD. When appropriate, the PSOC directs actions or makes recommendations to the CIO.

6.3.3 Project Management Division

PMD will qualify IV&V Service Providers, maintain a list of qualified IV&V Service Providers, approve selection of IV&V Service Providers for Major IT Projects, and coordinate IV&V Service Provider activities among Major IT Projects. PMD will also analyze vendor reports for trends and issues. As necessary, PMD will prepare formal reports on the analysis of Major IT Projects.

6.3.4 Internal Agency Oversight Committee

The IAOC will review and approve the IV&V Plan as a component of the Project Plan. After the IAOC approves the IV&V Plan the Project Manager submits the approved plan to PMD for review by the CIO.

6.3.5 Project Sponsor

The Project Sponsor is the individual, usually part of the Agency management team, who makes the business case for the project. This individual usually has the authority to define project goals, secure resources, and resolve organizational and priority conflicts.

When Agencies request Development Approval for a Major IT Project, the sponsor is responsible for the project's proposal and charter. The Project Sponsor must identify the proposed IV&V milestones and describe the IV&V strategy for the project in the

Project Proposal (Project Milestones) and Project Charter (Project Organization) respectively. The sponsor must allocate funding in the proposal for IV&V. The Project Sponsor will also work with the Project Manager to develop the comprehensive IV&V Plan and will issue an IV&V Statement of Work (SOW) to the service provider(s). When multiple providers respond to the issued IV&V SOW, the sponsor will select a provider for the IV&V. PMD will assist the Project Sponsor in development of the IV&V SOW and selection of the provider. The Project Sponsor is responsible for acceptance of IV&V report deliverables.

6.3.6 Project Manager

The Project Manager will assist the Project Sponsor in developing milestones and budgets as necessary. Following project Development Approval, Project Managers for all Major IT Projects must develop a comprehensive plan for the project and will incorporate the IV&V schedule in the plan. Project Managers will have direct interface with the IV&V providers and will utilize the findings and recommendations in managing the project. The Project Manager will coordinate contracted vendor review and responses to IV&V findings as appropriate. The Project Manager will also ensure that all final IV&V reports relating to the IT Project are loaded into the Commonwealth IT portfolio management tool.

6.3.7 IV&V Service Provider

Qualified IV&V Service Providers will have experience and training in verification and validation audits commensurate with the scope and nature of the project. In any IV&V effort, the IV&V Service Providers must be completely independent and have a separate budget and line of responsibility from that of the Project Manager. IV&V Service Providers will not be part of the Agency responsible for the project. All IV&V Service Providers must be free of any conflict of interest in a project where they provide IV&V contracted support. Conflict of interest may include contracting, sub-contracting, or actively bidding on the project. IV&V Service Providers are disqualified from providing additional consulting resources (outside of IV&V) on a project for which they are contracted to provide IV&V services.

6.4 IV&V Process Steps

6.4.1 Project Initiation

The process to implement IV&V begins with initial planning for a Major IT Project during the Initiation Phase of the project lifecycle. The Project Sponsor reviews the Commonwealth Technology Policy and PM Standard for required IV&V activities. The Project Sponsor insures that adequate funding is allocated for IV&V in the project proposal and that the required IV&V reviews are scheduled as milestones in the Project Proposal and Project Charter. The sponsor will also describe the IV&V strategy for the project in the organization section of the Project Charter.

6.4.2 Project Detailed Planning

After the project has received Development Approval, a detailed Project Plan is developed. The IV&V component of the Project Plan is developed as part of the quality management planning during detailed Project Planning. An IV&V Plan is scaled to fit the size, scope, and complexity of the project. The complexity of a project is determined using the IT Project Complexity Model described in *Section 2.4 Project Complexity Classification*. IV&V Plans for Major IT Projects will include as a task the review of technical, financial, and management aspects of the project and a schedule of the required IV&V reviews and reports.

The IAOC will review and approve the IV&V Plan as a component of the Project Plan. After the IAOC approves the IV&V Plan, the Project Manager submits the approved plan to PMD for review by the CIO.

6.4.3 Procure IV&V Provider Services

The IV&V SOW template, which is available on the PMD website, can be used to procure IV&V services from any qualified provider. The PMD website homepage is at <http://www.vita.virginia.gov/oversight/projects/>. Adequate time should be allowed for potential providers to respond to the IV&V SOW. If a meeting with the project team is necessary to facilitate responses, all providers solicited with the IV&V SOW will be provided an opportunity to meet with the project team prior to submitting a response. The IV&V SOW should identify when and where the meeting will occur.

Multiple Agencies may collaborate on a single IV&V SOW for multiple projects in order to acquire better prices or improved services. When collaborative efforts occur, a

memorandum of agreement will be developed by the participating Agencies and signed by all participating Agency heads. A single Agency will be designated as the lead Agency responsible for the financial and contract management associated with the effort. Each participating Agency is responsible for acceptance of deliverables as outlined in paragraphs that follow. The IV&V SOW will clearly outline the agreement and attachments will be modified to reflect the requirements of each project.

After approval by the Project Sponsor, the IV&V SOW is submitted electronically to PMD IV&V Supervisor via email. The IV&V SOW is sent to PMD@vita.virginia.gov, with a subject line of Project X SOW for IV&V – (date).

PMD will review the IV&V SOW within 3 working days and approve or request modifications as needed. PMD sends the approved IV&V SOW and a list of qualified providers to the Project Sponsor and Project Manager. The Project Sponsor and Project Manager will screen the qualified providers for potential conflicts due to an existing project relationship, and then send the SOW to the screened providers. The SOW may be sent to one or more providers. SOW responses are reviewed by the Project Sponsor and Project Manager. Recommendations are sent, in priority order by email to PMD@VITA.Virginia.Gov, with a subject line of Project X SOW Responses for IV&V – (date). PMD will review and approve the provider selection within 3 working days.

The Qualification Standard for IV&V Providers is available on the PMD website. The PMD homepage is at <http://www.vita.virginia.gov/oversight/projects/>.

The Project Sponsor and Project Manager will submit an Agency Procurement Request (APR) for any IV&V SOW exceeding \$100,000. APRs are submitted to PMD using the following e-mail address: PIR@VITA.Virginia.Gov.

6.4.4 IV&V Execution

The Project Sponsor or Project Manager will notify the selected provider and coordinate the start of the IV&V effort. The Project Manager and IV&V Service Provider will develop a detailed schedule of the project's IV&V reviews. The Project Manager will provide this detailed schedule to PMD. PMD will maintain and track a comprehensive IV&V schedule for all Major IT Projects.

During the IV&V reviews, the IV&V provider will rely on existing project documentation unless doing so compromises their effectiveness or limits their ability to draw accurate conclusions. The project team will not be required to develop new

documentation to feed the review process where existing documentation already includes the needed information. The IV&V Service Provider should adapt to the documentation and tracking mechanisms already in place as a source of information rather than expecting new documentation to be developed to facilitate the review. The IV&V provider should operate in a manner that is unobtrusive as possible while still completing their review by the required process.

The IV&V provider will provide draft reports and presentations to the Project Sponsor and Project Manager for review and correction prior to acceptance and release of the final report. The Project Sponsor and Project Manager cannot approve, modify, or reject the content of a report but may provide comments and feedback on drafts within five (5) business days of receipt of a draft. Project Managers will coordinate reviews and responses to IV&V reports by the project team including contractors and service providers. The IV&V provider will submit final draft reports to the Project Sponsor for final deliverable acceptance. The Project Sponsor will accept or reject the individual IV&V reports. The Project Sponsor will review and return comments within five (5) business days of receipt of each final draft report. The IV&V provider will then submit final reports within two (2) business days.

The IV&V provider will produce a final report with detailed findings (both positive and negative) that include – best practices identified and employed; identified lessons learned; and recommendations for improvement. The final report will be provided to the Project Sponsor, Project Manager, Agency PMO, and PMD. The Project Sponsor or PMO will distribute copies of the report to the IAOC and the Project Manager may distribute copies to the project team. The Project Manager will load an electronic copy of the report into the Commonwealth IT portfolio management tool. PMD will distribute copies as necessary to the PSOC, the CIO, and the ITIB. In addition, the IV&V provider will make presentations to the Project Sponsor, project team, and IAOC as requested.

PMD will analyze all reports submitted by IV&V providers. PMD will identify trends and issues, and prepare formal recommendations for decisions by the CIO and ITIB as necessary.

To ensure IV&V process improvement, PMD will maintain a knowledge base repository where received findings and recommendations are held for analysis and identification of new processes or change to existing IV&V processes.

6.5 IV&V Issue Resolution

If contract or performance issues arise with the IV&V provider during the IV&V process, the Project Sponsor must immediately notify the PMD IV&V Supervisor of the issue. The Project Sponsor may also request a meeting of the IAOC to address the issue.

When the IAOC cannot resolve an issue, PMD will assist the Agency in coordination with the Chair of the PSOC to convene a meeting of the PSOC. The PSOC will review and resolve the issue or make recommendations to the CIO for issue resolution beyond the scope of the secretariat.

6.6 IV&V Supplemental Information

Supplemental IV&V information can be found on the PMD website. The PMD website homepage is at <http://www.vita.virginia.gov/oversight/projects/>.