

COMMONWEALTH OF VIRGINIA



Information Technology Resource Management (ITRM)

PROGRAM MANAGEMENT GUIDELINE

Virginia Information Technologies Agency (VITA)

Reviews

- This publication was reviewed and approved by the Director of the Policy, Practice and Architecture Division.
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Questions related to this publication should be directed to the Director of VITA's Policy, Practice, and Architecture (PPA) Division. PPA notifies Agency Information Technology Resources (AITRs) at all state agencies, institutions and other interested parties of proposed revisions to this document.

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Preface

Publication Designation

COV ITRM Program Management Guideline CPM 302-00

Subject

Management, governance, and oversight of Information Technology Programs

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This guideline shall be reviewed on an annual basis.

Authority

Code of Virginia, §2.2-225 (Powers and duties of the Secretary of Technology (SoTech))

Code of Virginia, §2.2-2007 (Powers of the CIO)

Code of Virginia, § 2.2-2010 (Additional powers of VITA)

Scope

This guideline is recommended 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 resources in the Commonwealth of Virginia.

Purpose

This guideline recommends direction and technical requirements which govern the acquisition, use and management of information technology resources by executive branch agencies.

General Responsibilities

Secretary of Technology (SoTech)

Reviews and approves statewide technical and data policies, standards and guidelines for information technology and related systems recommended by the CIO.

Chief Information Officer of the Commonwealth (CIO)

Develops and recommends to the Secretary of Technology statewide technical and data policies, standards and guidelines for information technology and related systems.

Virginia Information Technologies Agency (VITA)

At the direction of the CIO, VITA leads efforts that draft, review and update technical and data policies, standards, and guidelines for information technology and related systems. VITA uses requirements in IT technical and data related policies and standards

when establishing contracts; reviewing procurement requests, agency IT programs, budget requests and strategic plans; and when developing and managing IT related services

Information Technology Advisory Council (ITAC)

Advises the CIO and Secretary of Technology on the development, adoption and update of statewide technical and data policies, standards and guidelines for information technology and related systems.

Executive Branch Agencies

Provide input and review during the development, adoption and update of statewide technical and data policies, standards and guidelines for information technology and related systems.

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Section 1. Introduction

1.1 Objective of the Commonwealth Program Management Guideline

The primary objective of the Commonwealth Program Management Guideline (PgM Guideline) is to assist agencies and other organizations in formulating and operating successful IT programs. The guideline is broadly consistent with “best practices” established by the Project Management Institute (PMI) and documented in the Project Management Body of Knowledge (PMBOK) and the PMI Standard for Program Management. Information provided in the guideline also serves as a common reference point and language for the discussion and implementation of program management in the Commonwealth.

1.2 Applicability to State Agencies

The PgM Guideline is recommended to all state Agencies that are responsible for the management, development, purchase, and use of information technology investments in the Commonwealth.

1.3 Applicability to Institutions of Higher Education

The PgM Guideline is recommended to all state institutions of higher education that are responsible for the management, development, purchase, and use of information technology investments in the Commonwealth; however, this guideline may not be applicable to research programs, research initiatives, or instructional programs at public institutions of higher education.

Institutions of higher education that have executed Management Agreements with the Commonwealth are permitted to implement their own Program Management Standards and Guidelines and should provide copies of those documents to the Secretary of Technology in accordance with the Program Management Standard.

1.4 Glossary

As appropriate, terms and definitions used in this document can be found in the COV ITRM IT Glossary. The COV ITRM IT Glossary may be referenced on the ITRM Policies, Standards and Guidelines web page.

1.5 Authority

This guideline is promulgated under the authority of the Commonwealth of Virginia Secretary of Technology.

1.6 The Iterative Process of Program Management

Commonwealth Program Management is comprised of a program lifecycle and general management activities. PgM Standard describes the Program Management Lifecycle which consists of six Phases:

- Program Strategic Planning
- Program Initiation
- Program Management Planning
- Program Execution
- Program Closeout
- Program Evaluation

This guideline applies the knowledge and practices to tasks performed in the lifecycle of a program.

Program management is an iterative process because each phase in a program lifecycle builds on the previous phase. An example of the iterative nature of program management is that the Program Management Planning phase is, in part, a refinement of the Program Initiation phase. There may be overlap between phases and in some cases, a phase may be repeated due to changes within a program. During each phase, program managers perform three important general management activities. The activities are planning, execution, and control. The activities are repetitive and may occur in order or in some instances simultaneously.

1.7 Tailoring the Guideline to Your Program

Program managers may tailor the implementation of this guideline to meet the unique requirements for management of a given program within their organization. Because the guideline is largely based on commonly accepted program management best practices, agencies should approach tailoring of the guideline through a deliberate decision-making process that clearly establishes the necessity and value of the contemplated changes or tailoring decisions. Program managers must assess individual program characteristics and determine how best to apply the guideline and implement associated processes.

1.8 Concepts Used in the Program Management Guideline

1.8.1 Program Lifecycle

The COV ITRM Glossary defines a program as the coordinated planning, management, and execution of a group of related IT Projects organized within a common management structure to achieve specific organizational goals and benefits not attainable by managing by IT Projects individually. Programs may include elements of related work outside the scope of the Component Projects. Typically, Program Initiation begins when an agency decides to move forward with a program identified in the Agency Strategic Plan that has been granted Planning Approval by the CIO. The lifecycle of a program begins when a person or organization recognizes a business need or problem requiring a solution. Programs are not just a set of tasks to perform. A program is a process that whereby a

group of related projects produce one or more unique products or services, which allows the organization to achieve a desired business goal.

1.8.2 Temporary Endeavor

An IT program is a temporary endeavor, with a defined beginning and end date, to produce a set of desired products, services or results. The program is normally constrained by date, but can be constrained by funding or deliverable. A successful program is closed once all of the component projects have been delivered and accepted by the business owner. There are other reasons for program closure but the goal is to complete the program, as defined by the program charter. A program can be closed or canceled for other reasons as voted on by the POC (Program Oversight Committee). The basic question for defining success is, "What is the business reason for this program?" Criteria for program success must be quantifiable, measurable, and expressed in terms of business value.

1.8.3 Delivery of a Unique Product or Service

Programs deliver tangible and unique products and/or services. To deliver value, programs must be based on defined business objectives. The products or services delivered must satisfy a critical need that supports the agency's operations. Without well-defined business objectives, as well as clearly identified needs, a program will fail because it lacks purpose and focus.

A business critical need is derived by identifying a change in current capability that is necessary for an agency to attain a specific business objective. Defining the need requires considerable care. A thorough analysis of business need, making the "business case," initiates the program lifecycle by focusing on the "right product or service" that best meets the business need.

1.8.4 Program Management Environment

Successful program management is predicated on an environment where sound management practices are in place. The principles, concepts, techniques, tools, and skills of general management are the foundation for successful program management. Critical among these are basic people skills and financial management skills, established processes for organizational planning and communication, availability of tools that support management processes and a culture that values cooperation and teamwork.

1.8.5 Commonwealth Program Management

Commonwealth Program Management (CPM) differs from generic program management because of Commonwealth laws, executive orders, policies, standards, and guidelines, which establish the program management environment. In the Commonwealth of Virginia, Commonwealth Program Management is defined as: The application of knowledge, skills, tools, and techniques to meet or exceed stakeholder needs and expectations from a Commonwealth Program.

Section 2. Program Management Lifecycle

2.1 Phase 1: Program Strategic Planning Phase

The purpose of the Strategic Planning phase is to explore the desirability and viability of establishing an IT Program as a means of achieving organizational business objectives. The preliminary vision and business justification of a proposed program is documented in the Program Investment Business Case (IBC) and other supporting documents. The proposed program must have an approved IBC to move into the next phase: Program Initiation.

Component projects should be considered to become part of an IT program based on:

- Interdependencies
- Outputs to another project
- Augmented of benefits realization

Follow the Program Strategic Planning Documentation Requirements outlined in the Commonwealth of Virginia Information Technology Program Management Standard (COV ITRM Program Management Standard CPM 301-01).

Note that for this stage of the Program Management Lifecycle, all of the required documentation is based on the existing forms/templates in the Commonwealth Technology Portfolio (CTP). The CTP templates were originally designed for individual projects – not programs – however they may be used effectively to capture the same sort of questions and answers for IT programs. These questions and answers center around the central premise of the proposed program: the potential of delivering benefit to the organization by investing in related component IT projects. Further elaboration and documentation may be drafted as needed and stored in a suitable repository, such as SharePoint or CTP itself.

It is always a best practice to identify a Program Manager as early as possible in the Program's development to ensure on boarding is well accomplished. The Program has a higher likelihood of success with a higher level of planning. The Program Manager can also be of service to the Program Sponsor in the early stages of the Program.

2.2 Phase 2: Program Initiation Phase

The Program Initiation phase is a set of activities and deliverables which is designed to build the business case which will justify the creation of a new IT program. Building upon the Program Investment Business Case approval, this phase elaborates on the scope, schedule, budget and content of the IT program in order to clarify both the costs and the potential benefits of the proposed program. The most important document produced in this phase is the Program Charter, which contains the clearest understanding to date on the objectives of the program – and what it will take to achieve the objectives (people, technology, money, time, etc.). The Program Charter also is the vehicle which captures the sponsoring organizations commitment to the Program, in the form of signatures by the hierarchy of approvers. A properly authorized Program Charter (along with certain supporting documents) is awarded Program Initiation Approval (PIA). The proposed program must have PIA to move into the next phase: Program Management Planning.

The main purpose of the Program Initiation Phase is to further define the Program's structure to deliver strategic benefits on a more operational and tactical level. All the strategic planning work will be used to generate a Program Charter.

2.2.1 Introduction

The Program Charter is the Program's primary document for establishing a Program. The Program Charter will document the expected outcomes, benefits, assumptions and constraints, high-level schedule, known risks and issues, key Program stakeholders, and high-level governance structure.

When the Program Charter is approved, it signals commitment to the Program objectives and the commencement of the next phase in the Program Lifecycle: Program Management Planning. If a Program Management Office (PMO) has not yet been commissioned, the Program Charter also serves that purpose. Follow-on Program Charter sections reflect policies and guidance from the Commonwealth of Virginia (COV) Information Technology Resource Management (ITRM) Program Management (PgM) and Project Management (PM) Standards, Commonwealth Technology Portfolio (CTP) requirements, Project Management Institute (PMI) Program Management Standard, and industry best practices.

The Program Charter template outline was developed to assist the Program Manager with ensuring all areas are considered when structuring the Program. The following subsections go into more detail of what is expected to be addressed within the Program Charter.

2.2.2 Justification

The Justification Program Charter section defends the Program's establishment and existence. Typically, a Program exists in order to (a) solve a business problem, and/or (b) take advantage/leverage an opportunity. Answer the questions:

- Why is the Program important?
- What does it need to achieve?
- When did this idea materialize/became important?
- Where, if significant, did this idea occur to clarify the justification?

2.2.3 Vision

This Vision Program Charter section documents the Program's vision statement. Answer the questions:

- What will the end state look like?
- How will it benefit the organization?

This is a future-looking statement as the Program would not be created if the solution already was in place and working. This is a statement of vision of the intended outcome or results of the Program and description of how the Program will improve upon the current situations or methods.

2.2.4 Strategic Fit

This Program Charter section documents the Program's strategic fit. Describe the historical, legislative, regulatory, and business context behind the Program. Reference the mandate or business strategy plan authorizing the Program. Answer the question: "How will the Program's goals align with the Commonwealth IT Strategic Plan?"

2.2.5 Measures of Success

This Program Charter section documents the Program's Measures of Success. Measures of success are necessary to determine if performance goals were met. They should be quantifiable and linked to the Strategic Alignment and Objective in the Strategic Plan.

2.2.6 Scope

This section identifies the Program boundaries, including what it will and will not accomplish. It will define the products, services and deliverables covered by the Program and outside the scope of the Program.

Other Programs may be external dependencies and their success may impact the overall well-being of this Program; when such cases arise, identify those external dependent Programs in the Program Charter.

2.2.6.1 In-Scope

The In-Scope Program Charter subsection describes accomplishments in terms of the business impact and IT deliverables supporting the methods to accomplish the business goals, and what those methods will be. Be as specific as possible for what work is considered in-scope so that the Program, Sub-Program(s), and Component Projects know what is expected. As the Program moves through subsequent lifecycle phases, any significant changes to the overall Program scope baseline will be documented in the appropriate change control logs.

2.2.6.2 Out-of-Scope

This Program Charter subsection describes the products, services, initiatives and deliverables outside the scope of the Program. Be as specific as possible as to what is not included in the Program scope. Clearly defined out-of-scope work will enable the entire Program Team to identify areas in need of further investigation as they arise for consideration as in-scope work or continue as out-of-scope work; regardless of the outcome, the results of these types of decisions should be documented in a Decision Log and appropriate Change Control policies and procedures followed.

2.2.7 Component Projects within the Program

The Component Projects within the Program subsection includes defining characteristics to logically group separate Project initiatives. List the known Projects within the Program. As the Program moves through subsequent lifecycle phases, there may be opportunities and/or

requirements to add more component projects to the Program. Any additions will be documented in the appropriate change control logs.

2.2.8 Project Characteristics within this Program

This subsection describes the characteristics common to the Projects within this Program. This section describes the common characteristics or criteria which may help in determining if new Projects will be included in the Program. Some helpful ideas include if the Projects fall under the same policies, provisions, regulations or reform initiatives, for example.

2.2.8.1 Component Project List

The Component Project List identifies all known Component Projects within the Program along with a brief description of each Project. Where Sub-programs are included, indent the associated Projects within the Sub-program. The expectation is this list will change over time; these changes should be highlighted in the appropriate change control logs.

2.2.8.2 Program System Structure

This section identifies the Program in graphical view at the three highest levels: 1) Program, 2) Project, and 3) Systems. Where Sub-programs are included, add them to Level 2 and the Projects at Level 3.

2.2.9 Schedule

The Schedule section includes the Program begin and end dates, based on all the known Projects within the Program. It will identify the Program's critical path for accomplishing the Program goals. Acknowledge that some or all of the Program's Component Projects may not have completed project plans or individual timelines at the time of the Program Charter's creation. Also document the method for determining milestone dates when no project plans exist.

If timelines are presented in graphic form include a legend in that section for determining the significance of specific graphic indicators.

The schedule like many areas in Program Management progressively mature over time as better information becomes known.

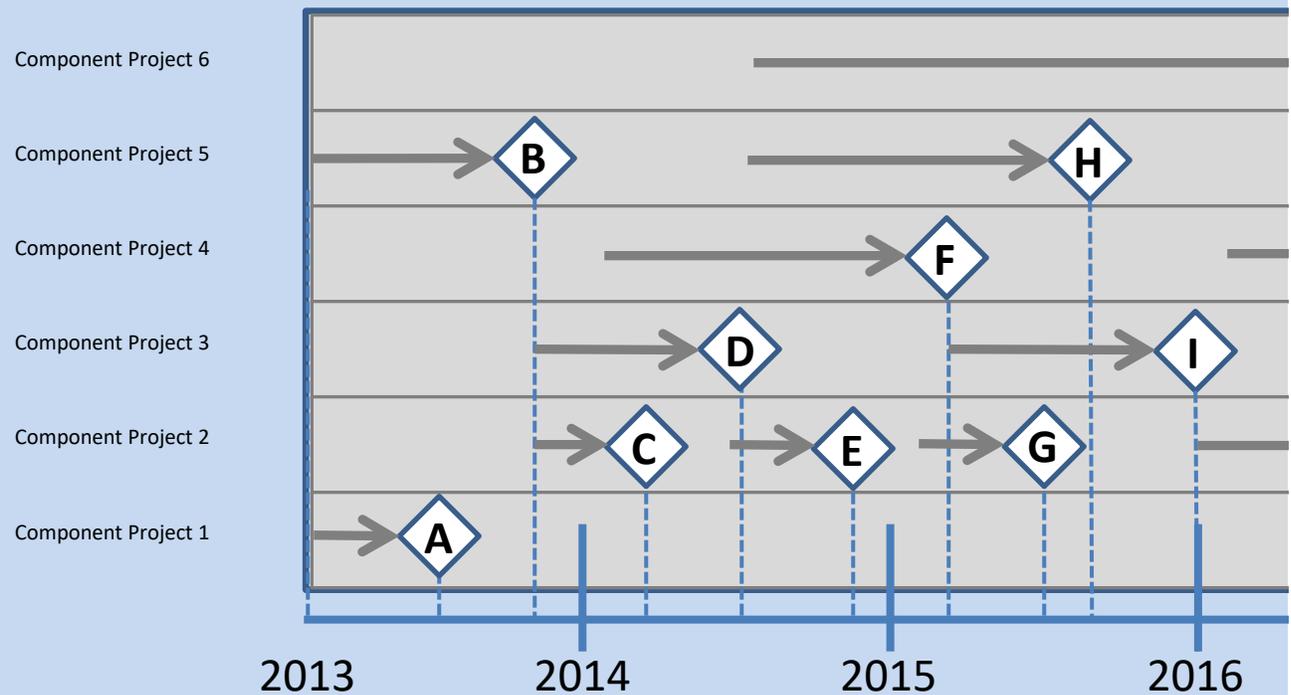
2.2.10 Program Road Map

The Program Road Map subsection represents at a very high level the Program chronological critical milestones in graphical presentation. Construct a significant milestones and dependencies list for all known Projects within the Program in a table format. See below examples. Tools, such as the picture template, can be found in the VITA website.

Key dependencies can include business processes, legislative, and IT, based on all the known Projects affecting the success of the Program. Program dependencies are Project activities or deliverables within the Program that depend on key milestone activities or deliverables of another Project. All of these Projects may or may not be included in the Program.

Example High-Level Road Map Graphic, Details of Early Milestones, Summary of Future Milestones, and Dependencies Table

Use the below example high-level Road Map graphic to generate ideas for building a similar graphic for the newly created Program. Each Component Project depicted in this graphic portrays the start date with the arrow begin style as “no arrow.” The end date with the Project Closure milestone event (before Project Evaluation) is represented with an arrow end style of “open arrow” pointing to the milestone diamond shape. For each early (known) alphabetic lettered Component Project milestone, explain in more detail in a table like the one that follows providing details, descriptions, and assumptions made in determining the milestones. Then summarize any “distant” milestones, depicted here as milestones D through L by discussing in general terms future milestone descriptions and assumptions. Detailed information of future milestones is not required. This graphic will need to be revisited as the Program matures. This concept involves “progressive elaboration” as with all other aspects of the Program requiring monitoring and controlling.



As part of the milestone roadmap, you may use the sample table below to identify the early milestones in detail and future milestones in summary format.

Milestone ID	Milestone Details/Descriptions	Assumptions
A		
B		
C		

D - L		
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The following table may be used to develop Component Project milestone dependencies within the Program. This list identifies the critical path in table format.

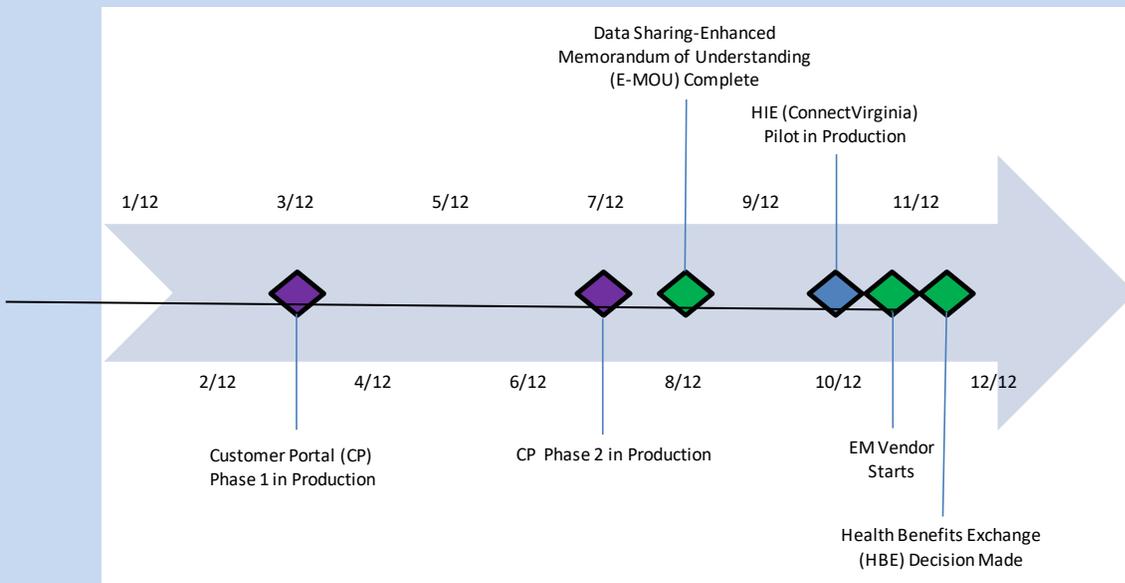
Milestone ID	Dependency Title	Dependencies	Dependency Description	Owner
A				
B		A		
C		A, B		
D		A		
E		C, D		

2.2.11 Timelines

As needed, consider including various Program timelines in this section of the Program Charter in graphic form. Change the definition of the milestone colors to represent the Program. See the eHHR Program Charter for an example Timelines Section and update it to suit the Program’s needs. You may also wish to copy the timeline to denote each year, so if you have a five-year Program, you may have five timelines, for example.

Example Timeline Graphic

Use the below example high-level Timeline graphic to generate ideas for building a similar graphic for the Program. These graphics are designed to guide you through the process of creating Program-specific graphics; they are not meant as a “must use” criteria.



2.2.12 Benefit Realization Strategy

The Benefit Realization Strategy Program Charter section includes a brief overview of the cost-benefit analysis. The Program Sponsor and/or Program Manager needs to document the key benefits and how they will be realized. Ideally, the Program should return a positive Return on Investment (ROI) over six years. That is, the total cost of ownership (TCO) of (a) implementing the Program, plus (b) the cost of operating and maintaining (O&M) the systems and processes of the Program for six years after implementation, should, ideally, be less expensive than any other alternative action – including not undertaking a new Program at all. Federal funding of the Program and/or O&M should not be considered a cost to Virginia.

2.2.12.1 Costs

The Cost section documents the Program's costs based on all known Projects within the Program, additional Program costs, and funds set aside for contingencies / risks. The Program Charter template is organized with two main types of costs: (1) Program; and (2) Operations and Maintenance.

Program Costs

This Program Charter section summarizes all Program costs, based on all known Projects within the Program, additional Program costs, and funds set aside for contingencies / risks. It will also describe the costs' funding source(s), the cost estimation accuracy confidence level, and the cost monitoring mechanism(s) throughout the Program. Consider constructing a table of Project costs. Expand the below table to fit the number of Projects related to the Program. Provide a total for each of the four funding categories (funding approved, funding conditionally approved, funding to be approved, funding to be requested) and a total baseline cost for all Projects.

Each Project within the Program will closely manage costs at the Project level. The Program will monitor costs monthly via reports submitted by each Project factored into the Earned Value Analysis and Management System. The costs included in this document are considered baseline costs. Budget revisions at the Project level will follow the COV ITRM PM Standard.

As the Program moves through subsequent lifecycle phases, any significant changes to the overall Program cost baseline will be documented in the appropriate change control logs and applicable associated program management plans such as the budget.

Operations and Maintenance (O&M) Lifecycle Costs

Operations and Maintenance (O&M) lifecycle costs based on all known assumptions about future needs follows a six-year cycle past the Program’s lifecycle. It includes what funding was approved, conditionally approved, to be approved, and requested.

2.2.12.2 Benefits

The Benefits Section of the Program Charter summarizes the financial benefits of the Program in terms of cost avoidance, cost savings, or increased revenue, for example. It will also include tangible and intangible benefits in terms of customer service, deliverable quality, and other factors pertaining to the overall business strategy goals used as Program justification. Consider including a visual representation of the Program’s Cost/Benefit Analysis (CBA) as Program and Component Projects justification.

Include the mathematical calculations which support the claimed benefits, even if it is high-level and speculative. As necessary, use an appendix. Note: Refer to the COV ITRM Project Management (PM) Standard, Appendix B, for an explanation of Cost/Benefit Analysis.

Example Generic Benefits

This example list of generic benefits is not all-inclusive. You may discover after reviewing this list that the Program has different benefits than those listed here or you may find additional benefits and those listed below apply to the Program. This list is designed to trigger thoughts regarding the Program benefits. Create a list of benefits as a first step towards building a summary of the cost/benefit analysis.

- Enable Better Communications
- Quicker Processing Time
- Standardize Operations
- Better Storage of Information
- Reduce Rework
- Promote Working Remotely
- Stronger Protection of Data
- Reduce Lifecycle Time
- Eliminate Data Errors
- Reduce Downtime/Increase Reliability
- Eliminate Redundant Data
- Stronger Internal Controls
- Enable Personnel Transformation
- Reduce Data Errors
- Automate Manual Process
- Reduce Operations and Maintenance Costs
- Reduce Negative Risk
- Reduce Redundant Data

- Reduce Procurement Technology Costs
- Better Customer Service
- Easier Data Sharing

2.2.13 Program Organizational Structure

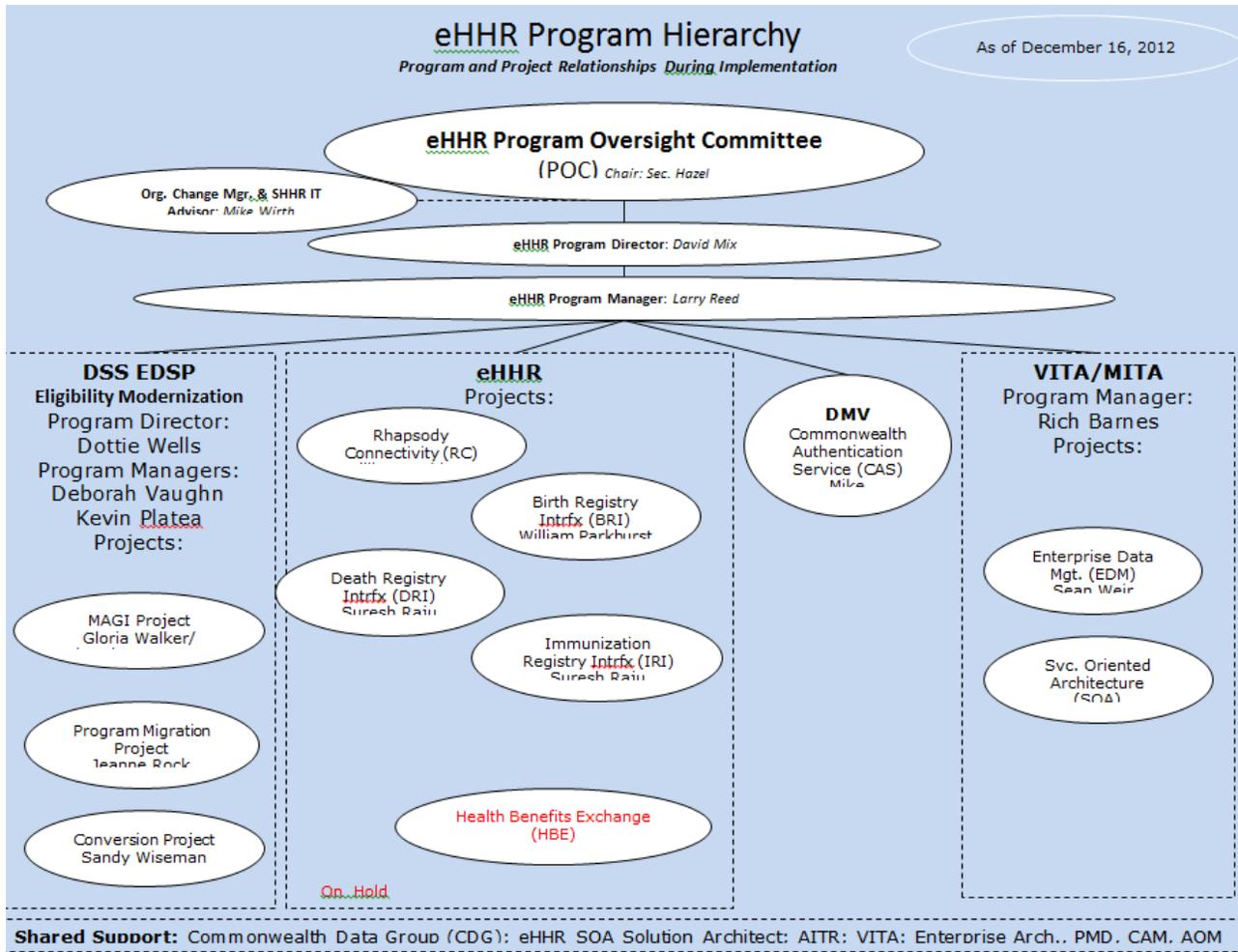
This section describes the Program Organizational Chart, Program Key Resource Needs, Stakeholder Requirements, Governance and Oversight, Roles and Responsibilities, and Program Points of Contact. This is a people-centric section. Be as detailed as possible regarding these areas.

2.2.14 Program Organizational Chart

Consider displaying the Program organization in a diagram. The diagram should show, at a minimum, the hierarchical reporting structure starting with any oversight committee structure. Include change management. If a Program Director is involved, include this person, and then itemize per Sub-program or Component Project level what the titles are and who is the main accountable resource for each area. If no one has been identified yet, put "TBD" in the chart for "To Be Determined." Use proper Change Control policies and procedures to update the organizational chart.

Example Stakeholder Definitions

The eHHR Program provided an excellent example of what an initial Program encompasses. It will change over time as new Component Projects are identified or existing Component Projects are removed, if necessary. The Program Organizational Chart should align with the expected benefits derived from establishing the Program.
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2.2.15 Program Key Resource Needs

Effective Program control can be negatively impacted by not having the right resources dedicated to the Program at the right time. Based on an evaluation using all Component Project inputs identify the needed key human resources in table form. Identify the role, why they are needed to include accommodations, and any training requirements. Only document the baseline for what is known at the Charter’s creation point for initial signature approval. The key resource plan may change over time and should be maintained. Changes in needed resources could come about because of approved increases in scope or key resource departures.

A proper Program and Component Project staffing plan is equally as important as all other Program / Project plans. The lead time required to select staff before any project begins must be considered to avoid delays.

2.2.16 Stakeholder Requirements

Stakeholder management is critical to the success of any Program. In this section, document the definition of “stakeholder” and identify the roles by lifecycle phase.

Stakeholder Definition

Define a Program Stakeholder in this Program's context. The definition can be different from Program to Program depending on the circumstances. The stakeholder concept, although appearing obvious, may be, in reality, unclear and different depending on whom you ask. The Program Communications Management Plan (COMM) should tie to this section of the charter.

Example Stakeholder Definitions

Use these example definitions to assist you or use the definition provided in the COV ITRM PM Standard:

- A stakeholder is anyone involved in the Program with decision-making authority.
- A stakeholder is anyone involved in the Program who is a voting member.
- A stakeholder is anyone involved in the Program who is a voting or non-voting member.
- A stakeholder is anyone involved in the Program with decision-making authority and a person in a need-to-know position (meaning all team members).
- A stakeholder is a person or entity impacted by the results of this Program.
- A stakeholder is a member "of the project team as well as all interested entities that are internal or external to the organization" (per *Project Management Institute Project Management Body of Knowledge*, Fifth Edition)

Program Points of Contact List

In the Program Points of Contact List Program Charter subsection identify the key Program- and Sub-program-level points of contact, including their names, titles, and organization name. Use this list to configure standard distribution lists and routine meeting invitations. Review this list periodically to ensure relevancy and accuracy. The names on this list are those where frequent communication is necessary. Include any standard committee groups where the PMO is involved. It is not necessary to record telephone numbers and email addresses unless the cell phone numbers are alternative ones and used only in emergency situations. If the Program has an Administrative Assistant, it should be his/her responsibility to maintain this list.

2.2.17 Governance and Oversight Structure

Governance comes from senior leadership who steer the Program and make key decisions. Oversight is the act of responsibly supervising and leading a Program or a function within a Program. Every Program will require a Governance and Oversight Structure. The strategic benefits and complexity of the Program will determine whether a stronger or weaker version of governance and oversight shall preside.

Phase Gate Reviews

A distinct, formal event or “Phase Gate Review” is necessary for a Program to transition from one phase to another. The path, sequence, and who is involved is explained in the COV ITRM PgM Standard. In this section enter the Phase Gate Review Milestone Schedule. If schedule rebaselining occurs, this part of the Program Charter will need to be reviewed and revised. It may be more appropriate to consider this section as part of the Appendix.

Executive Program Sponsor Appointment

This section defines the Executive Sponsor role and the person appointed to the position. Ensure to identify the Secretary’s name and title.

The PMI PgM Standard defines an Executive Sponsor as someone who is “a senior executive in the agency, organization, or corporation responsible for the success of an authorized program activity.” All VITA formal correspondence will be addressed to the Sponsor.

Program Director Appointment

This section defines the Program Director role and the person appointed to the position. Ensure to include the Director’s name and their unique qualifications for the position. If no Director exists for the Program, delete this section.

The Program Director is responsible for participating in governance and oversight of this Program. As the Program Director, he or she will assist the Executive Program Sponsor with ensuring the Program is aligned with the strategy and portfolio direction.

Program Manager Appointment

This section defines the Program Manager role and the person appointed to the position. A future iteration of this section should include a reference to the Program Manager Selection Criteria that will be contained in the COV ITRM Selection and Training Standard. Identify the Program Manager by name and highlight their qualifications for the position.

The PMI PgM Standard indicates that a Program Manager coordinates a group of related projects rather than manage individual projects. Instead of managing projects vertically throughout the project’s lifecycle, the Program Manager manages horizontally across all projects ensuring business strategic objectives are met so return on investment is realized.

2.2.18 Assumptions and Constraints

This section documents the Program assumptions (not what is known as fact, but what is believed to be true) and constraints (factors that act as hindrances or barriers that might restrict the Program from achieving its potential with regard to its goal). Provide a bulleted list of Program assumptions and constraints. Assumptions can remain “true” today, no longer be “true” tomorrow and need to be retired, new ones added, or existing ones modified. The point is that assumptions and constraints, much like action items, risks, and issues, must be monitored and controlled through periodic reviews throughout the Program’s lifecycle.

Assumptions and constraints are best maintained in either MS Excel spreadsheets or via a SharePoint list specifically designed for the Program. Remember that these assumptions and constraints involve the strategic outcomes of the Program; it is not the PMO's intent to micromanage the Component Projects, but when a Component Project identifies a strategic assumption or constraint, it needs to be brought to the attention of the PMO.

2.2.18.1 Assumptions

Document the Program-level assumptions in this section. Assumptions are used to drive effort, resources, costs, and schedule estimates. Assumptions are educated guesses in uncertain situations. Assumptions drive bases of estimates. As new facts materialize, assumptions should be revisited and revised accordingly. This constant monitoring could trigger changes in scope, schedule, and budget for the Program.

2.2.18.2 Constraints

Document the Program-level constraints in this section. Constraints bind the Program and the Component Projects. There may be need to develop workarounds to allow the Program and the Component Projects to keep moving forward. As the Program executes, new constraints will be discovered and initial constraints may either need revising or deleting; the PMO must be able to react to these changing dynamics. Note: You may build periodic reviews into the Program to align assumptions and constraints to current facts and beliefs.

2.2.19 Risks and Issues

This section describes the Program risks and issues known to date. Risks are future possible events having positive or negative implications. Issues are existing known problems where resources are needed to resolve them. Program-level risks and issues relate to the Program's schedule, cost, scope, and performance.

A separate Risk Log and Issue Log will be maintained which will capture information at the Program level (as well as an opportunity for Component Projects to also use the logs). At the Program level, identify those risks and issues requiring direction from governance and oversight functions.

2.2.19.1 Risks

Identify those risks requiring direction from governance and oversight functions. Risk areas include the high-level topics such as security, hardware, software, infrastructure, human resources, etc. Describe the risk in narrative form. Identify the Risk Owner and the Risk Owner's agency. Identify the customers (internal and external) that this risk, if realized, would affect. These risks are identified at the initial Program creation. The expectation is that all Program-related risks will be tracked in a log appropriate for that purpose. These and future risks will be managed in a separate document as identified in the Program Management Plan and the supporting Program Risks and Issues Management Plan.

2.2.19.2 Issues

Identify those issues requiring direction from governance and oversight functions. Issue areas include the overall Program schedule, cost, scope, and performance. Describe the issue in narrative form. Identify this Issue Owner and the Issue Owner's agency. Identify the customers (internal and external) needed to collaboratively resolve this issue. These are issues identified at Program creation. The expectation is that all Program-related issues will be tracked in a log appropriate for that purpose.

2.2.20 Program Charter Change Control

A Program Charter Change Control Process will be implemented to record significant changes for the Program Charter. Risks and issues will be managed in a separate supporting plan and logs while additional or changed assumptions and/or constraints should be added as changes to the Program Charter.

The updated Program Charter Change Control Log will be routed to the signatories for acknowledgement and approval. If all signatories attend an oversight committee forum, Program Charter Log update approvals can occur there, and recorded in the minutes. Significant changes are those that will change the course of the Program and have an impact on the Program's documented plans and approach.

The changes will be recorded in the Program Charter Change Control Log in the Appendix and a summary line will be added to Publication Version Control table in the front of this document.

2.3 Phase 3: Program Management Planning Phase

This phase builds upon the vision of the Program Charter, and it produces several plans with which the Program Management Office (PMO) will operate the Program. Also during this phase, individual component projects, which comprise the IT program, are beginning their individual ITIM lifecycle in accordance with the Project Management Standard. Planning can be quite extensive, but it is often constrained by time, resources and funds, so it makes sense to create planning documents commensurate with the needs of the program. The Program Management Plan is comprised of nearly a dozen plans, which together lay the foundation for how the PMO will run the program. The Program Oversight Committee should review and approve the plans, and Program Management Planning Approval is the gateway to the following phase: Execution.

The Program Planning Phase contains an extensive collection of artifacts covering every aspect of the Program – from benefits realization planning (via the Program Post Implementation Review Plan) to governance, and quality management planning. The approval of the Planning Phase documentation serves as the gateway to Program Execution.

The overarching purpose of the Program Management Planning documents is to refine and elaborate on the Program direction and processes to ensure Program benefits will ultimately be realized. Key aspects of the Program plan will be monitored and controlled at the Program level.

Each of the Program planning artifacts, or documents, is designed to foster a successful Program, and should be given appropriate consideration. Although the Program Charter was created and approved in the previous (Program Initiation) phase, there remains numerous and significant unknowns going into the Planning phase. Consequently, as new information becomes known during the Planning and subsequent Execution phase, the Planning documents should be revisited and updated to incorporate the updated information, refinements and lessons learned; this is known as “progressive elaboration.”

Each chapter in this Program Management Planning Guideline is dedicated to one of the key management areas within a Program. Refer to the Program Management Standard to specify the required and optional documentation. The content of each plan should be tailored to meet the particular need of the Program.

The Program Management Plan (PMP) is the introductory overview, in a single document, of a set twelve plans listed below which comprise the totality of Planning phase documentation. The PMP is essentially a summary of the other eleven sub-plans; it can be useful for an executive summary and overview of how the program will be managed. Each chapter that follows this section introduces a specific topic of the PMP. The chapters, in order, cover the:

1. Program Management Plan
2. Program Post Implementation Review Plan
3. Program Governance and Quality Management Plan
4. Program Change and Configuration Management Plan
5. Program Communications Management Plan
6. Program Risks and Issues Management Plan
7. Program Architecture Plan
8. Program Resource Management Plan
9. Program Procurement Management Plan
10. Program Implementation and Transition to Operations Management Plan
11. Organizational Change Management Plan
12. Program Financial Management Plan

A template is offered on the VITA website for each of the chapters listed.

2.3.1 Program Management Plan

2.3.1.1 Document Change Control

This is the standard Document Change Control paragraph to be used in Program planning documentation:

After this document is accepted by the Program Management Office (PMO), the approved version is the baseline. All baseline version document changes will be managed and documented with an approved change control procedure, as outlined in the Program Change and Configuration Management Plan.

A Change Control Process will be utilized to record significant changes within this document.

The updated Change Control Log will be routed to the signatories for acknowledgement and approval. If all signatories attend an oversight committee forum, Program Management Plan Change Log approvals can occur there, and recorded in the minutes.

Once approved, the changes will be recorded in the Program Management Plan Change Control Log in the Appendix and a summary line will be added to the Publication Version Control table in the front of this plan.

2.3.1.2 Related Documentation

Related documents include Program-specific documentation, Commonwealth of Virginia (COV) standards, policies, guidelines, strategic plans, and relevant industry best practice documents. Ensure that you review this section carefully as governing policies and standards are subject to change. Update this section as appropriate.

2.3.1.2 Purpose

Document the purpose of the Program Management Plan (PMP). The PMP is an executive summary stating each sub-plan's purpose. If one of the eleven subsidiary plans is optional and will not be developed, indicate so in the PMP. If a sub-plan is not too voluminous, the corresponding chapter of the PMP can be used to document necessary details of the sub-plan, rather than a separate document.

2.3.1.3 Program Post Implementation Review (PIR) Plan

The main focus of the PIR is to determine, after the completion of the program, if the program benefits were actually realized. This would include cost benefit analyses of conducting the program; i.e. program costs compared to program benefits which may include individual project or component costs and benefits. Write an executive-level summary of the Post Implementation Review Plan. Answer in general terms what the desired business results of the program are, and how will they be ascertained after the program is completed. The actual, separate PIR Plan will contain the detailed information.

The Program Post Implementation Review (PIR) Plan is a requirement of the Program Management Standard, and is a document integral to ensuring that the Program actually delivers the scope and benefits.

The purpose of a PIR is to conduct research and analysis to determine if, after approximately one year of "living with" the new systems and processes implemented by the Program: "Did the Program actually achieve the business benefits which were envisioned and articulated in the Program Charter?" The PIR Plan should be one of the first plans drafted and revisited over the life of the Program. The PIR Plan must be current and finalized before the Closeout phase, as it will be used to document the PIR. Refer to the Program PIR Plan for specific details on PIR processes, procedures, responsibilities, scope, and benefits success measurement.

2.3.1.4 Program Governance and Quality Management (GQM) Plan

Write an executive-level summary of the Program Governance and Quality Management Plan. Explain in general terms the program governance structure and responsibilities, as

well as how quality will be managed at the program level. The actual, separate GQM Plan will contain the detailed information.

2.3.1.5 Program Change and Configuration Management (CCM) Plan

Write an executive-level summary regarding the Program Change and Configuration Management Plan. Explain in general terms the program change and configuration management structure and responsibilities, as well as how it will be managed at the program level. Remember that the baseline change control process for the program must work in harmony with the project-level change control process describe in the Project Management Standard. The actual, separate CCM Plan will contain the detailed information.

2.3.1.6 Program Communications Management (COMM) Plan

Write an executive-level summary regarding the Program Communications Management Plan. Explain in general terms the communication management structure and responsibilities, as well as how communication, both inter-, intra- and external, will be managed at the program level. The actual, separate COMM Plan will contain the detailed information.

2.3.1.7 Program Risks and Issues Management (R&I) Plan

Write an executive-level summary regarding the Program Risks and Issues Management Plan. Explain in general terms the program risks and issues management structure and responsibilities, as well as how it will be managed at the program level, keeping in mind that risks and issues occur at both the project and program level. The actual, separate R&I Plan will contain the detailed information.

2.3.1.8 Program Architecture (ARC) Plan

Write an executive-level summary regarding the Program Architecture Plan. Explain in general terms the program architecture management structure and responsibilities, as well as how it will be managed at the program level. The actual, separate ARC Plan will contain the detailed information.

2.3.1.9 Program Resource Management (RM) Plan

Write an executive-level summary regarding the Program Resource Management Plan. Explain in general terms the program resource management structure and responsibilities, as well as how it will be managed at the program level. The actual, separate RM Plan will contain the detailed information.

2.3.1.10 Program Procurement Management (PRO) Plan

Write an executive-level summary regarding the Program Procurement Management Plan. Explain in general terms the program procurement management structure and responsibilities, as well as how it will be managed at the program level. The actual, separate PRO Plan will contain the detailed information.

2.3.1.11 Program Implementation and Transition to Operations Management (IMP) Plan

Write an executive-level summary regarding the Program Implementation and Transition to Operations Management Plan. Explain in general terms the program implementation and transition to operations management structure and responsibilities, as well as how it will be managed at the program level. The actual, separate IMP Plan will contain the detailed information.

2.3.1.12 Program Organization Change Management (OCM) Plan

Write an executive-level summary regarding the Program Organization Change Management Plan. Explain in general terms the program OCM management structure and responsibilities, as well as how it will be managed at the program level. The actual, separate OCM Plan will contain the detailed information.

2.3.1.13 Program Financial Management (BDGT) Plan

Write an executive-level summary regarding the Program Financial Management Plan. Explain in general terms the program financial management structure and responsibilities, as well as how it will be managed at the program level. The actual, separate BDGT Plan will contain the detailed information.

2.3.1.15 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.2 Post Implementation Review Plan**2.3.2.1 Introduction**

Provide a brief overview of the purpose and content of the Program Post Implementation Review Plan and an outline of what can be expected from the document. It should also identify the plan's intended audience.

2.3.2.2 Approach

Document the approach to the Post Implementation Review (PIR). Discuss the fact that a PIR is typically conducted 12 months after the completion of a significant Program phase or entire Program. Discuss the AS-IS state and the FUTURE state objectives. Refer to the eHHR Program PIR Plan for guidance, if necessary. Consider preparing a process flow for conducting a PIR.

2.3.2.3 Scope

Document the scope of the Program PIR such as "to evaluate the Program objectives as stated in the Program Charter and other related documents and to measure the actual business results of the Program objectives."

2.3.2.4 Objectives

The goal of the PIR is to measure the success of the Program. Use language similar as follows: "to evaluate the Program objectives as stated in the Program Charter and other related documents and to measure the success of the Program objectives." The PIR will assess whether or not the new systems and processes created by the Program are successful in their operational form.

2.3.2.5 Post Implementation Review Roles and Responsibilities

Identify the Program Post Implementation Review roles and responsibilities. Keeping in mind that the Program team may be disbanded by the time the PIR commences, PIR team members must be identified and work together to collect, analyze, and report measures and metrics in a timely manner. Typical roles include the Executive Sponsor, Program Oversight Committee; Program Manager, PIR Leader, and PIR Team.

2.3.2.6 Plan of Action

The planning and execution of the PIR should satisfy the following objectives documented at the beginning of the Program Management Planning phase to establish "AS-IS" metrics contrasted with the "TO-BE" metrics at a point in time approximately 12 months after the program closeout:

- Conduct post-implementation reviews of information systems and resource management processes to validate estimated benefits and costs, and document effective management practices for broader use.
- Evaluate programs determining whether the anticipated return on investment was achieved and decide to continue, modify, or terminate Programs to meet agency mission requirements.
- Document lessons learned from the PIRs. Redesign oversight mechanisms and performance levels to incorporate new knowledge.
- Re-assess an investment's business case, technical compliance, and actual performance against estimated benefits and costs.

2.3.2.7 Areas of Assessment

Document the business, strategic plan, and Program business requirements. The Areas of Assessment section describes the metrics in business terms grouped by assessment areas used to measure the success of all Component Projects within the Program and the Program itself. It describes what needs to be measured, how to measure it and the success criteria based on the present and future state of each area being measured. In addition, this section should:

- Describe the source of data needed to evaluate each metric.
- Describe the processes used to collect the data.
- Document the methods used to produce the resulting measurement.
- Annotate the means by which the metrics will be reported.

2.3.2.8 Program Post Implementation Review Team Contact Table

Include the contact information for individuals on the Program team, including their name, Program role, and any other pertinent data.

2.3.2.9 Metrics Collection and Action Plans

Identify the Post Implementation Review-related performance measures associated with the Program. See the eHHR PIR Plan for additional metrics. Notice there are two metrics tables here; one to demonstrate overall PIR metrics and one to show specific Business Objectives supported for the Program. A best practice is to always define how the metrics will be measured up front as sometimes it is difficult to recreate data in points in time in the past.

2.3.2.10 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.3 Program Governance and Quality Management Plan

2.3.3.1 Introduction

Provide a brief overview of the Program Governance Management Plan (GQM). If a separate Program Governance Management Plan is not needed, include the appropriate text in the Program Management Plan.

The GQM Plan describes the goals, structure, high level governance plan, meeting schedules, phase gate reviews, and audits. It takes what was documented in the Program Charter and explains in more detail the approach to governance and oversight. The emphasis of this plan is on quality standards, procedures, and activities to verify that quality is built into and continually added to Program processes and deliverables. The GQM Plan serves as a framework for technical and management oversight through which quality processes are established and maintained throughout the life of the Program.

The GQM Plan ensures stakeholder expectations are met at the Program level, aligning project requirements and quality assurance to the requirements and expectations of the overall Program. The goal is to review and coordinate the Component Projects' Quality Assurance Test Plans to focus and prioritize the Component Projects' interdependencies and resources (infrastructure, staff, etc.).

Verification, validation, and quality review activities are used to ensure the Component Projects will deliver:

- **Business goals and expectations:** Providing high client satisfaction by understanding how clients define success;
 - **Financial Goals:** Managing costs by implementing efficient, effective, and repeatable procedures, processes, and standards
 - **Quality Goals:** Minimizing errors and re-work by carefully verifying and validating the work at each stage; and
 - **Delivery Goals:** Improving speed, quality, and cost of delivery by continuously improving the Component Project.
-

2.3.3.2 Program Governance Goals

The goals or program governance, such as those identified below, need to be identified and addresses:

- Define and implement a structure within which to execute program management and administration
- Provide active direction, periodically review interim results, and identify and execute adjustments to ensure achievement of the planned outcome (which contributes to success of the overall business strategy)

Include a brief overview of the Program's Governance Goals. Explain how the goals will be met. It is highly recommended to construct a table. See the below example.

2.3.3.3 Program Governance and Oversight Structure

To achieve program governance goals, organizations define, agree upon, and implement structures within the program effort. There is no single "best" structure; rather, the structure should "fit" the organizational dynamics and practices. For example, within a consensus-oriented business culture, the program structure should provide for achieving, and continuously refining, consensus around major program outcomes. A program organizational structure that runs counter to components of the business culture will struggle to achieve momentum and forward motion.

Active direction for the program is achieved through a combination of the right individuals, an effective structure for management and oversight with defined program roles and responsibilities structured, with the needed outcomes of the program in mind, and to fit within the management philosophy and enterprise approach

Describe why program governance is important and what levels of governance and oversight exist for this particular Program. In addition, describe the Governance-level responsibilities.

Governance is an important aspect of managing Program and Component Project quality. Each Component Project within the Program will follow governance objectives as defined in the Commonwealth of Virginia (COV) Information Technology Resource Management (ITRM) Project Management (PM) Standard (COV ITRM PM Standard).

Program governance includes the following entities:

- Program Oversight Committee, sometimes referred as the Program Governance Board
- Multiple Virginia Information Technologies Agency (VITA) Project Management Division (PMD) Analysts
- Mandatory Independent Verification and Validation (IV&V)
- Auditor of Public Accounts (APA) Audits
- Federal Audits
- Reports to the General Assembly

2.3.3.3.1 The Program Oversight Committee

Describe the Program Oversight Committee's role and list the Committee members.

This committee oversees the Program. The Program Oversight Committee (POC) fulfills much the same role as the Enterprise Oversight Committee (EOC), described in COV code and the Secretariat Oversight Committee (SOC), described in PMD standards. The POC will also assist in issue resolution at their level of authority and give approval recommendations on Change Requests.

2.3.3.3.2 Project Management Division Analysts

Project Management Division (PMD) Analysts are available to assist, provide guidance, and bring value to the Program. The PMD Analysts ensure each Component Project within the Program conforms to the project management standards. The Program PMD Analyst also works with the Program to assist with complying with COV program management standards.

List the PMD Analysts assigned to the Programs and Component Projects within the Program and their roles.

2.3.3.3.3 Mandatory Independent Verification and Validation Reviews

Independent Verification and Validation (IV&V) is a review of the project plans and artifacts by a disinterested third party to confirm that the Project is "doing the right thing" and doing it in the "right way." Periodic IV&V reviews are required of all Category One, Two and Three Projects, based on the Commonwealth Project Governance Assessment (CPGA) of risk and complexity described in the COV ITRM PM Standard. The Program's goal should be to comply with the spirit of the COV ITRM PM Standard IV&V requirements yet reduce the unnecessary burden of repetitive IV&Vs for each Component Project. Since the Program includes several Component Projects in different lifecycle stages, the Program intends to trigger the IV&V through a firm calendar date.

The IV&V occurs every six months after Program Initiation Approval and includes a review of the Program's Component Projects except those rated as Category Four Projects, based on the CPGA risk and complexity assessment. The evaluation criteria will be based on the Component Project's lifecycle phase. The objective is to perform a top-to-bottom IV&V review encompassing the Program and each active Component Project at review time. As much as possible the required documentation will coincide with the documentation required for a specified gate review. See the COV ITRM PM Standard for further IV&V information.

List the IV&V schedule either in bulleted form or consider using a graphical representation. See the example below.

2.3.3.3.4 Auditor of Public Accounts Audits

Describe the purpose/role of the Auditor of Public Accounts (APA) Audits, including when information should be provided for APA review.

The APA is responsible for promoting sound financial management and accountability for public funds. The Program expects APA to monitor the IT projects based on management best practices. Information will be provided to APA by the PMO upon request. Audit frequency will be captured in the Program-level schedule.

2.3.3.3.5 Federal Audits

Describe the purpose/role of federal audits, including when information should be provided for federal review.

Federal audits will be completed based on requests from the federal government. Federal audit frequency should be captured in the Program-level schedule.

2.3.3.3.6 Reports to the General Assembly (GA)

The Program may have General Assembly (GA) requirements. Describe the Program progress reporting requirement for the Commonwealth GA, including any specific language used by the GA in mandating these reports. See the below example narrative from the eHHR Program as guidance.

2.3.3.4 Program Quality Control Processes

Provide a brief overview of the purpose and nature of the Program Quality Control Processes. Every Program requires Quality Control Processes to be in place. As long as there is a documented quality control approach tied to Component Projects' individual development methodologies and senior leadership approves the approach(es), then quality control can be assured.

Program Quality Control Processes employ a variety of quality control, inspection, test measurement, and other observational processes meant to ensure Program objectives are achieved in accordance with an approved plan. Each Component Project is required to follow the COV ITRM PM Standard. In addition, Component Projects will submit material to the Program as part of the Program-level quality control processes.

2.3.3.4.1 Phase Gate Reviews

Describe the phase gate reviews to approve the Program going from one phase to the next phase. The Phase Gate schedule should be included in this section.

Phase gate reviews are formal and occur when a particular Program Phase is complete. These reviews are for key stakeholders, including governance, sponsors, and team members, for the specific review type. Commitments, plans, status, critical milestones achieved during the reporting period, risks and issues are discussed. Any action items or decisions made during the reviews are recorded and acted upon post-review and their status reported accordingly.

2.3.3.4.2 Planning

Describe how Program and Component Project Plans will be reviewed, how expectations for the plans' content will be set, and provide information on how Component Projects should report their progress throughout their lifecycles.

Component Project plans will be reviewed to validate whether milestones and deliverables can be clearly and easily tied to the Program's milestones and deliverables contained in the Program's integrated schedule. Interdependencies between Component Projects will clearly be visible and labeled consistently between the Component Projects. The Program and Component Project Managers will negotiate and approve milestone and deliverable dates.

Component Project plans will be detailed enough to show a milestone or deliverable at least every two weeks. This methodology allows monitoring interim progress for corrective action to be taken early if the Component Project is in danger of missing a deadline. The Program will verify that project plans include work effort and resources, assigned to tasks in the plan, ensuring the amount of work is understood and the Component Project Team is committed to achieving the schedule.

Each Component Project will follow PMD standards in reporting project progress and status to its Internal Agency Oversight Committee (IAOC).

In addition, Sub-program and Component Project Managers will attend a weekly meeting coordinated and facilitated by the PMO to review the status of all Program Component Projects. Before the meeting the Component Project Managers will do the following:

- Complete a Program-supplied template documenting the project status and submit it to the PMO.
- Provide the Component Project's Schedule Performance Indicator (SPI) for the active tasks. Note: SPI is an available column in Microsoft Project.

2.3.3.4.3 Requirements

Describe the Program-level business requirements and objectives for each Component Project, the purpose and content of the Requirements Traceability Matrix (RTM), and the process for submitting business requirements or RTM changes.

The Program-level business requirements and objectives should be identified for each Component Project during the Project Initiation Phase. During the Project Execution Phase the Component Project Team will work with business Subject Matter Experts (SMEs) to gain a better understanding of the Component Project's business requirements and to decompose requirements further, where needed, to facilitate systems development. The RTM is a deliverable of the Requirements Gathering Phase.

The Component Project Team uses the RTM throughout the Component Project's life to gather a more complete picture of client needs, expectations, and constraints, allowing the team to deliver a more comprehensive client solution. The RTM, submitted to the business SMEs for review and approval at the end of the Requirements Gathering Phase, will trace the requirements for a particular Component Project to the Program-level business requirements and objectives identified during the Component Project's Initiation Phase. The

PMO will not maintain an enterprise RTM unless tools and staffing are available and the PMO desires to do this. Each Component Project will have a RTM tying to the Program business requirements and objectives identified for that Component Project. Component Project RTMs will be stored on the Project-specific SharePoint web page.

Any changes impacting the business requirements or RTM will be submitted to the business SMEs for review and approval. Any business requirements or RTM changes affecting the Program's scope, budget, or schedule will be reviewed by the Program. Change approval will follow existing PMD standards and the Program's Change and Configuration Management Plan.

2.3.3.4.4 Design, Development, and Configuration

Describe the purpose of reviewing the design, development, and configuration elements of the Program deliverables and the process and format for conducting such reviews.

To ensure appropriate funding, new systems design, development and configuration efforts need to follow a disciplined approach. These phases will be validated through Peer Reviews of the design documents and source code involving Component Project Team Members, using automated tools whenever possible.

The purpose of a peer review is to provide "a disciplined engineering practice for detecting and correcting defects in software artifacts, and preventing their leakage into field operations" according to the Capability Maturity Model. Peer review is a process used for checking work performed by one's equals (peers) ensuring it meets specific criteria. In software development, peer review is sometimes used in code development where a team of coders will have a meeting and go through code line by line looking for errors.

Generally, the goal of all peer review processes is to verify whether the work satisfies the specifications for review, identifies any deviations from standards, and provides improvement suggestions. Peer review processes exist across a spectrum of formality, with relatively unstructured activities such as "buddy checking" towards one end of the spectrum, and more formal approaches such as walkthroughs, technical peer reviews, and software inspections, at the other.

Software peer reviews generally take place after unit testing and before systems integration testing. An optional Peer Review Inspection Notice is available on the eHHR Program SharePoint site if your organization does not currently use a standard document.

2.3.3.4.5 Testing

Describe the test plan and test case requirements for each Component Project. The Program requires each Component Project to create detailed test plans and test cases to support:

- **Unit testing** – testing the smallest testable application part to determine its fit for use. Software developers run unit tests to ensure code meets design and behaves as intended.
- **Systems integration testing (SIT)** - a testing process exercising a software system's components as a whole and its ability to coexist/integrate with other systems. The project's development and test teams share responsibility for SIT.

- **User acceptance testing (UAT)** - a testing process to obtain confirmation that a system meets mutually agreed-upon requirements. A business SME provides such confirmation after trial or review. Responsibility is shared among the Project Test Team and the project's business SMEs.

The test plan should include the following.

- **Testing Overview** – Provide a general description of the plans for testing the deliverables developed by your Component Project; to do this, the following elements are required:
 - Generate a Testing Traceability Matrix (TTM), tying each test case/condition to the Component Project's business requirements.
 - Explain the environment in which the project functionality will be tested.
 - Add additional relevant information ensuring the test plan is fully documented.
- **Testing Schedule** – Define the specific testing activities schedule and identify the person responsible for the activities. In summary the schedule should include:
 - Activity;
 - Scheduled Date; and
 - Responsible Person(s).
- **Team Responsibilities** – Describe the Project Team's product testing responsibilities in general and the specific team member assignments (name and specific task).
- **Testing Resource Requirements** – Describe the resources needed to execute the scheduled testing activities. Include activity, scheduled date, and resources required.
- **Test Case List** – A testable features list or a catalog of all of the test cases that will be conducted.

A Program Test Coordinator, assigned to each Component Project, should review and recommend approval.

2.3.3.5 Metrics Collection and Action Plans

The Metrics Collection and Action Plans section should outline specific criteria for metrics in each of the lifecycle phases. These metrics include review of the Program and Component Project Plans, review of the criteria and timeline for the Requirements Traceability Matrix (RTM), capture design, development, and configuration metrics, measure the criteria and timeline for Component Projects' Test Plans, and capture Program Implementation deliverables metrics.

Describe metrics used to provide adequate quantitative and qualitative, if applicable, evidence of the Program's progress. This evidence will assist the PMO, Sub-programs, and Component Projects with taking corrective actions, if necessary, when the actual metrics scorecard deviates from the planned measures. Each Component Project will create a set of meaningful, measurable metrics related to the specific activities of their part of the Program. Report the planning, requirements, design, development, configuration, testing, and implementation metrics via status reports.

2.3.3.5.1 Planning

Planning metrics should be captured to assess the value and success of planning activities. Use the below table or design your own that captures what the performance measures are, what measures are considered red, yellow, and green, and any action plans.

2.3.3.5.2 Requirements

Requirements metrics should be captured to assess the value and success of requirements activities. Use the below table or design your own that captures what the performance measures are, what measures are considered red, yellow, and green, and any action plans.

2.3.3.5.3 Design, Development, and Configuration

Design, Development, and Configuration (DD&C) metrics should be captured to assess the value and success of DD&C activities. Use the below table or design your own that captures what the performance measures are, what measures are considered red, yellow, and green, and any action plans. The Design, Development, and Configuration documentation, certifying approval by the Component Project Teams, should be submitted to the PMO during the DD&C phase once it is available.

2.3.3.5.4 Testing

Test metrics should be captured to assess the value and success of test planning and execution activities. Use the below table or design your own that captures what the performance measures are, what measures are considered red, yellow, and green, and any action plans.

2.3.3.5.5 Implementation

The Implementation Plan is covered under a separate chapter. Refer to the Program Implementation and Transition to Operations Management Chapter for further details. The Program Implementation and Transition to Operations Management Plan metrics may be separately accounted for in the Program Implementation and Transition to Operations Management Plan. If incorporated here, a statement should be made indicating that a separate Plan was not needed and that this section and the accompanying Implementation and Transition checklist suffice. If a separate Program Implementation and Transition to Operations Management Plan is needed, refer to it in this section and place the metrics for this subject area in that plan.

2.3.3.6 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.4 Program Change and Configuration Management Plan

2.3.4.1 Introduction

Describe the purpose of the Program Change and Configuration Management Plan and identify the plan's intended audience. It should also briefly discuss the types of change this plan does and does not cover.

2.3.4.2 Program Change Control Process

Describe the process for submitting changes to the Program or any of its Component Projects throughout the Program lifecycle. Designate the appropriate approvers for any submitted change requests.

2.3.4.2.1 Identify and Document the Proposed Change

Discuss who is authorized to request a change and the documentation required for submitting a change request. It should also describe how the Program staff will respond to change requests.

2.3.4.2.2 Evaluate the Need

Describe the process for evaluating possible changes, including the criteria used to assess change requests and when change requests will be presented and discussed.

2.3.4.2.3 Make a Decision

Describe the different levels of review a change request will go through and identify who is responsible for making final approvals on all change requests.

2.3.4.2.4 Implement Change

Describe the process for documenting and carrying out Program adjustments once a proposed change is approved.

2.3.4.3 Project Change Control Process

Acknowledge that Component Projects will conduct the change control process in accordance with the ITRM COV PM Standard. It should also describe how Component Project Managers will evaluate the impact of Project change at the Program level.

2.3.4.4 Configuration Item

Per the Information Technology Infrastructure Library (ITILv2), a Configuration Item includes any documentation such as a Service Level Agreement or a Change Request. At the Program Level, configuration items under formal change control are the Change Request for cost, schedule, and scope, the Program Management Plan, any sub-plans, and outputs from tools. All other configuration items will be managed and controlled at the Project level.

2.3.4.5 Program Change Request Form

Describe the Program Change Request Form. Changes to any of the Component Projects or Sub-Programs within the Program will be described in a written Change Request Form (CRF). This process will also support any changes to Program or Project documentation such as business requirements, charters or detailed plan documents. This allows the Program to have a central repository of all changes requested. Use the eHR Change Request Form as an example for the Program.

2.3.4.6 Metrics Collection and Action Plans

Outline specific criteria for change and configuration management metrics.

2.3.4.7 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.5 Program Communications Management Plan

2.3.5.1 Introduction

Provide a brief overview of the purpose and content of the Program Communications Management Plan (COMM) and an outline of what can be expected from the document. It should also identify the intended audience of the Communication Plan.

2.3.5.2 Communication Needs

Describe the communication needs of the Program, including identification of targeted audiences, specific information needs for each audience, the method(s) of delivery for each message, the frequency of communication, and the artifacts used to communicate each message. Consider creating a table to display this information. Methods of delivery examples include: letter and email correspondence, SharePoint, meetings, minutes, telephone calls, etc. Include any messaging escalation procedures, if any.

2.3.5.3 Communications Artifacts and Responsible Artifact Preparer

List the artifacts used to communicate Program information with a brief description of each artifact. Also include a table displaying each artifact, its purpose, the person responsible for preparing it, the method of preparation, the frequency of preparation, and the method for storing the artifact. Consider compiling a table to display this information.

2.3.5.4 Program Communications Team Contact Table

Include the contact information for individuals on the Program team, including their name, Program role, email, and any other pertinent data. Consider displaying this information in a table.

2.3.5.5 Metrics Collection and Action Plans

Outline specific criteria for metrics for communications. The below metrics are examples only and should be used to kick-start the metrics measurement effort.

2.3.5.6 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.6 Program Risks and Issues Management Plan

2.3.6.1 Introduction

Provide a brief overview of the purpose and content of the Program Risks and Issues Management (R&I) Plan. It should also identify the plan's intended audience. Of particular interest are the roles, responsibilities and relationship between risks & issues managed at the component project level, versus those managed at the program level.

2.3.6.2 Risk Management

2.3.6.2.1 Risk Management Roles and Responsibilities

List the key roles and associated responsibilities of those involved in the risk management process of the Program.

2.3.6.2.2 Program Risk Management Process

Describe the Program risk management process. Use the example process below or create one that suites the Program. At both the Program and Component Project level, risks will be identified and managed. Conceptually, a subset of Component Project risks may need to be escalated to the Program level. A best practice is to determine at the Planning phase the criteria used to determine whether a risk should be escalated to the Program level. For example, a Component Project, with the PMO's concurrence, may only surface "red" risks or those "trending towards red" to the PMO. They may decide to develop action plans for the "yellow" risks, but not report on these at the PMO level. The Risk Management Process should be consistent for both the Program and for the Component Projects. It is best to align all Risk Managers on the core processes and tools/techniques to use for managing risk.

For example, the process may include steps to: 1) identify risks, 2) qualify risks (classify risks in terms of "red," "yellow," or "green,") 3) quantify risks (how severe is the risk measured numerically), 4) develop risk responses (generally developed for "red" and "yellow" risks), 5) monitor and control risks (was the risk mitigated or realized?), and 6) close risks (performed once the risk is either overcome by events, the trigger date has lapsed, or expert opinion indicates the risk is no longer valid).

2.3.6.2.3 Program Risk Log

Describe Program Risk Log, identifying the point of access for the log and listing the key Risk log components. A best practice is to establish logs in SharePoint for universal access.

2.3.6.2.4 Project Risk Management Process

Component Projects within the Program will conduct risk management according to the PM Standard. It should also describe how Project Managers will evaluate the impact of Component Project risks at the Program level. In other words, since a Component Project does not exist in isolation – it has interactions with other projects within the program – it is therefore likely that many risks will have the potential to impact other component projects as well as the program. The program office must perform a coordinating risk management function.

2.3.6.2.5 Risk Contingency and Management Financial Reserves

Describe if and how contingency and management financial reserves were calculated for each Component Project within the Program. It should also describe how these funds will be managed throughout the Program lifecycle. Within a program, the possibility exists for “sharing” of schedule and budget contingencies.

2.3.6.3 Issue Management**2.3.6.3.1 Issue Management Roles and Responsibilities**

List the various issue management roles and briefly describe the responsibilities of each person.

2.3.6.3.2 Program Issue Management Process

List how issues will be tracked and managed throughout the lifecycles of the Program and its Component Projects.

2.3.6.3.3 Issue Identification

Briefly discuss how issues can be identified and how they should be subsequently recorded in a Program Issue Log.

2.3.6.3.4 Program Issue Log

Describe the method of documenting issues in the Program Issue Log, identifying the point of access for the log and listing the key components of a Program Issue Log.

2.3.6.3.5 Issue Evaluation and Maintenance

Identify the individuals responsible for assessing issues and the criteria used to determine the appropriate level at which to manage each issue (program versus project).

2.3.6.3.6 Project Issue Management Process

Acknowledge that Component Projects within the Program will conduct issue management according to a defined process in the COV ITRM PM Standard. It should also describe how

Project Managers will evaluate the impact of, and possibly escalate Component Project issues to the Program level.

2.3.6.5 Metrics Collection and Action Plans

Outline specific criteria for risks and issues metrics.

2.3.6.6 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.7 Program Architecture Plan

2.3.7.1 Governing Federal Laws and Regulations

The design, operation, and management of information and related assets are subject to statutory, regulatory, and contractual architectural and security requirements. Compliance with mandated requirements is necessary to avoid penalties and ensure on-going operations. This section covers Federal laws and regulations.

Create a list of laws or regulations establishing specific requirements for the confidentiality, integrity, or availability of the data in the system. Add or amend the list as needed.

- Health Insurance Portability and Accountability Act of 1996 (HIPAA)
- Internal Revenue Service 1075
- Privacy Act of 1974
- Payment Card Industry (PCI) Standard
- Rehabilitation Act of 1973
- § 508 Amendment to the Rehabilitation Act of 1973
- Federal National Security Standards
- Federal Enterprise Architecture Business Reference Model
- Freedom of Information Act (FOIA)

2.3.7.2 Governing Commonwealth of Virginia Policies, Standards, and Guidelines

The Program Architecture (ARC) Plan is governed by many Commonwealth of Virginia (COV) policies, standards, and guidelines. They are listed here to guide the reader to the source material to ensure relevancy and currency, and guarantee all areas are considered in this plan's development. Legal requirements include, but are not limited to: state statute, statewide and agency policy, regulations, contractual agreements, intellectual property rights, copyrights, and protection and privacy of personal information. A very good reason to list the governing policies, standards and helpful guidelines is to validate the currency of these documents. Use the list to check if a more current dated document is posted to the VITA website. If items in the below list are not current, update the list and ensure a thorough review of the updated governance document(s).

- **Enterprise Architecture**
 - Enterprise Architecture Policy (EA 200-02) (07/03/2012)
 - EA Change – Exception Request Form (08/24/2010)

- COV ITRM Enterprise Architecture Standard (EA 225-09) (02/13/2013)
- Enterprise Data Standards Repository
- EA Exception Request Log (08/12/2010)
- Code of Virginia §2.2-3803 (B) Internet Privacy Policy and Statement
- Virginia Public Records Act
- **Geographic Information Systems (GIS)**
 - Model Virginia Map Accuracy Standards Guideline (ITRM Guideline OTH701-00) (03/15/2009)
- **Information Security Policy**
 - IT Information Security Policy (SEC 519-00) (07/24/2009)
- **Information Security Standards**
 - IT Information Security Standard (SEC501-07.1) (01/28/2013)
 - IT Security Audit Standard (SEC502-02.2) (01/06/2013)
 - IT Standard Use of Non-Commonwealth Computing Devices to Telework (SEC511-00) (07/01/2007)
 - Removal of Commonwealth Data From Electronic Media Standard (SEC514-03) (03/15/2008)
 - Secure Remote Access to Online Court Documents Standard (SEC503-02) (03/28/2005)
 - Virginia Real Property Electronic Recording Standard (SEC505-00) (05/01/2007)
- **Information Security Guidelines**
 - Information Security Facilities Security Guideline (SEC517-00) (04/27/2009)
 - IT Contingency Planning Guideline (SEC508-00) (04/18/2007)
 - IT Data Protection Guideline (SEC507-00) (07/02/2007)
 - IT Logical Access Control Guideline (SEC509-00) (04/18/2007)
 - IT Personnel Security Guideline (SEC513-00) (02/15/2008)
 - IT Risk Management Guideline (SEC506-01) (12/11/2006)
 - IT Risk Assessment Instructions - Appendix D (SEC506-01) (11/21/2006)
 - IT Security Audit Guideline (SEC512-00) (12/20/2007)
 - IT Security Threat Management Guideline (SEC510-00) (07/01/2007)
 - IT Systems Asset Management Guideline (SEC518-00) (04/27/2009)
 - IT Systems Security Guideline (SEC515-00) (07/17/2008)
 - Public Kiosk Security Guidelines

2.3.7.3 Industry Resources

List any industry resources used in the creation of this plan.

2.3.7.4 Introduction

The Program Architecture Plan (ARC) provides the overall Program technical context. At the Program Management Office (PMO) level, the success of the Program is dependent upon ensuring a consistent architecture is constructed and change management across architectural components is executed properly. It includes the existing system architecture, solution architecture, security plan, data management and migration plans, and

considerations such as testing, training, implementation, etc. Each of these areas will be addressed in separate sections within this overarching plan.

The architecture defines how the system/product will be constructed, describing what the critical components are and how they fit together, from a high-level, logical perspective. The architecture must be documented in a way that clearly identifies the logical layers of the systems, the specific subsystems that compose the layers, and their responsibilities and interfaces. A sound architecture allows reuse of design components between projects.

As part of this overarching plan, information security must be addressed. Information security is the protection of information from a variety of threats to ensure business continuity, minimize business risk, and maximize return on investments. Information security is achieved through planning, executing, monitoring and controlling policies, processes, and procedures.

The data management and migration plans describe the strategy, preparation, and specifications for managing and migrating data from a source system or systems to a target system or systems. The plans describe the overall approach, assumptions, constraints, risks, and data processes.

2.3.7.5 Program Architecture Plan Overview

The ARC Plan is the Program and Component Projects' architectural elements baseline description as it relates to the delivery of Program objectives. This plan sets the stage for developing the Program work breakdown structure, as it shows the relationships among the various Program technical areas. It builds on the initial Program scope and requirements, defining their interactions and dependencies. As the plan is being developed, trade off analysis between different solutions may need to be discussed since each tradeoff solution has quality, schedule, and cost implications.

Another purpose of the ARC Plan is to identify any conflicts in architecture, design, tool usage, etc. for the Program and ensure those issues are resolved.

The plan shows how the Program will be at certain stages and defines how stakeholders will know the implementation of the architecture was successful. Once the plan is approved, the baseline is established for developing resource, effort, and cost estimates. As the Program progressively matures, so will the architecture. This iterative plan should be reviewed periodically by the PMO, other key stakeholders, and governance members at various phases in the Program's lifecycle.

It is highly recommended that during the detailed planning phase, key technical and business resources review the policies, standards, and guidelines as a planning committee, discussing thoroughly each page to ensure no topic is missed in developing this plan. Although it sounds like overkill, in the long run, this technique will be viewed as a best practice.

2.3.7.5.1 Meta Architecture

Specify in this section your architectural vision, key principles, special styles/conventions to be followed, concepts and key assumptions that will affect end product design. Focus on the

high-level decisions that will strongly influence the system structure. This section should rule out certain structural choices and guide your decisions and tradeoffs among others.

2.3.7.5.2 Roles and Responsibilities

List the architecture, security, and data resource roles and responsibilities. Use the below table or create your own. The roles listed in the table are examples and/or addressed in applicable standards.

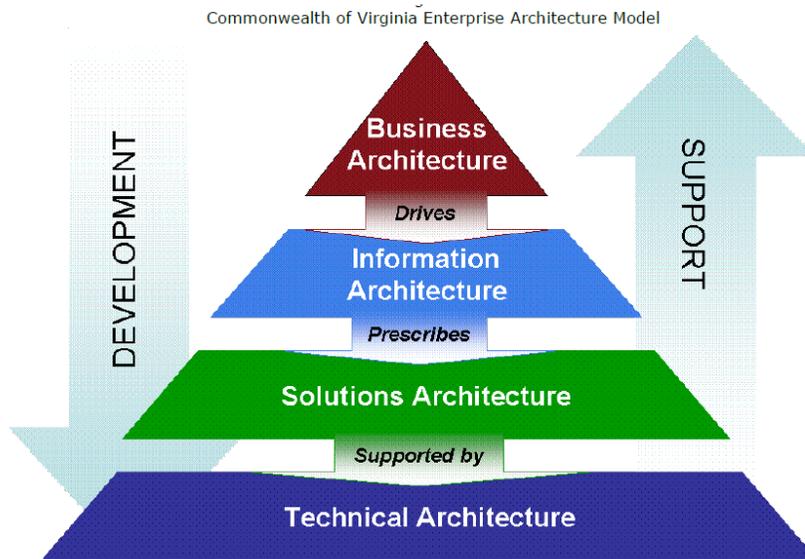
IT System Name, Acronym, and Designation			
Role	Responsibility	Name	Reports to (Name and Title)
Chief Information Officer (CIO)	Directs the development of policies, procedures and standards for architecture, security, and data.		
Chief Information Security Officer (CISO)	Develops and coordinates the COV Information Security Program.		
Chief Architect	Provides governance and oversight for the architecture; develops policies, standards, and guidelines for architecture.		
Agency Head	Oversees Agency IT Architecture, Security, and Data Programs for the Agency.		
Program Architect	Assesses Component Project architecture at the Program level. Is primarily responsible for ensuring a consistent architecture across all Component Projects.		
Software Architect	Invents strategic solutions that the technical development team can use to create solutions.		
Information Security Officer (ISO)	Develops and manages the agency's information security program.		
Privacy Officer	Provides guidance on privacy laws. This is a		

	necessary position if required by law or regulation and is optional for when not required by law or regulation.		
System Owner	Is the agency business manager responsible for operations and maintenance of an IT system. Responsible for the overall security of the IT system. Accountable to the Agency Head.		
Data Owner	Spreads IT security awareness to data users. Develops any additional local requirements, guidelines and procedures needed to protect data; is the owner of the Data Management and Migration Plans, if any. Evaluates and classifies data sensitivity, defines protection requirements, communicates data protection requirements to the System Owner, and defines data access requirements.		
System Administrator	Administers day-to-day IT systems. Implements requirements of the IT Security Management Program. The System Administrator is an analyst, engineer, or consultant who implements, manages, and/or operates a system or systems at the direction of the System Owner, Data Owner, and/or Data Custodian.		
Data Custodian	Protects data from unauthorized access, alteration, destruction, or usage and in a manner consistent with COV IT security policies and standards. Data Custodians are individuals or		

	organizations in physical or logical possession of data for Data Owners.		
.NET/J2EE/PHP Developer	Designs, builds, and unit tests the solutions; fixes legitimate defects found by testers.		
Database Developer	Creates the database schema; designs, builds, and unit tests stored procedures; fixes legitimate database defects found by testers.		
Web Developer / Agency Webmaster	Creates Websites using the Virginia Common Template and requirements based on COV ITRM Accessibility Standard (GOV103-00) except for exempt agencies.		
Business Analyst	Documents use cases, business processes, and data model design.		
User Interface Designer	Designs the user interface.		
Tester	Executes use cases developed by the Business Analyst; for each defect, the tester documents the defect, assigns it to a developer, re-tests the functional area when updated, and either assigns another defect or closes the existing defect record if resolved. User Acceptance Testers should be from a pool of system end users.		
Deployment Specialist	Builds and deploys the application(s) using configuration control tools; may also build and deploy tasks using automated scripts.		
Technical Writer	Documents the iterations of the Program Architecture Plan.		
Trainer	Teaches end users how to use the application(s); may use the use cases as a training source.		

2.3.7.5.3 Existing Program Architecture

Document the existing, "AS IS," Program Architecture. If nothing exists in the "AS IS" state, briefly state so here and delete the subsystem paragraphs that follow. Please note the following graphic comes from the COV ITRM Enterprise Architecture Standard. It is repeated here as a reminder to guide you in developing the "AS IS" architecture.



2.3.7.6 Proposed Solution Architecture(s)

Document the proposed solution architecture – the future state of the overall system structure based on the COV Enterprise Architecture components of Business Architecture, Solutions Architecture, Technical Architecture, and Information Architecture.

2.3.7.6.1 Design Rationale and Goals

Document the design rationale and goals with an explanation of each. Use these example goals and/or add your own based on the Program’s needs.

- User Friendly
- Ease of Use
- Reliability
- High Performance
- Minimum Number of Errors
- Security
- Completeness of Functionality
- Code Reuse
- Easier Integration

2.3.7.6.2 Design Trade-off Analysis

Document any design trade-off analysis conducted while planning. This is important because it may need to be revisited multiple times throughout the Program's lifecycle as new information comes to light.

2.3.7.6.3 Program Architecture Assumptions

Identify the basis statements for the program architecture to be considered successful. These may concern such issues as related to software or hardware, operating systems, etc.

2.3.7.6.4 Program Architecture Constraints

Identify any limitations to consider when designing and building the Program architecture solution.

2.3.7.6.5 Program Architecture Risks

Describe any risks associated with the solution Program architecture.

2.3.7.7 Enterprise Business Architecture

This section of the ARC Plan is encapsulated in other Program Management Planning documents. Refer to the following Program sub-plans when planning the Program architecture:

- Program Charter
- Program Post Implementation Review Plan (PIR)
- Program Governance and Quality Management Plan (GQM)
- Scenarios – Use Cases
- Decomposed requirements documentation

COV Enterprise Architecture Library located at the URL: (<http://www.vita.virginia.gov/oversight/default.aspx?id=365>) that includes COV's Enterprise Business Architecture (EBA) -- static report and ad hoc query interface for extracting agency specific EBA data and reports.

Document any business architecture considerations such as it relates to business strategy, service-oriented architecture, business processes, reporting, as well as gaps and inefficiencies based on these Program-level artifacts and their relationship to each other. Note this architectural area is based on the cross-agency lines of business rather than individual agency functions.

2.3.7.8 Enterprise Solutions Architecture

The COV ITRM Enterprise Architecture Standard, Chapter 4, states that the Enterprise Solutions Architecture "provides the framework/model and methodology that supports the transition from silo-based, application-centric and agency-centric information technology investments to an enterprise approach where solutions are designed to be flexible." To that

end, keep the overarching strategy goals in mind when creating the future-state of the enterprise architecture. Document the Enterprise-level solutions architecture in this section.

2.3.7.9 Proposed Subsystem(s) Operational Status

Indicate the current operational status of the system(s). If more than one status is selected, list which part of the system is covered under each status. Refer to the following descriptions to identify which category(ies) the architecture belongs.

Operational. Part of the proposed architecture may be currently operational such as an authentication service; in this case, the service would be considered "operational."

Under Development. Part of the architecture is underway under another Program, for example, it would be considered "under development."

Major Modification. If the architecture exists, but must be modified for it to work in the future architecture, then identify it in the "Major Modification" column.

Not Developed. If the architecture is a brand new concept, never before developed, and it does not exist in the Commonwealth's inventory, then identify it as "Not Developed."

2.3.7.9.1 "A" Subsystem

Briefly explain this subsystem and its purpose. Replace the letter "A" with the appropriate subsystem name. Include any assumptions and constraints, any interfaces with other subsystems, its layer schematic, and any layer dependencies among Component Projects requiring management and oversight at the Program level. Include any subsystem public interfaces exposed to end users and any known operating system dependencies such as run-time libraries, classes, etc., if the architecture is dependent on their services.

2.3.7.9.2 "B" Subsystem

Briefly explain this subsystem and its purpose. Replace the letter "B" with the appropriate subsystem name. Include any assumptions and constraints, any interfaces with other subsystems, its layer schematic, and any layer dependencies among Component Projects requiring management and oversight at the Program level. Include any subsystem public interfaces exposed to end users and any known operating system dependencies such as run-time libraries, classes, etc., if the architecture is dependent on their services.

2.3.7.9.3 "C" Subsystem

Briefly explain this subsystem and its purpose. Replace the letter "C" with the appropriate subsystem name. Include any assumptions and constraints, any interfaces with other subsystems, its layer schematic, and any layer dependencies among Component Projects requiring management and oversight at the Program level. Include any subsystem public interfaces exposed to end users and any known operating system dependencies such as run-time libraries, classes, etc., if the architecture is dependent on their services.

2.3.7.9.4 "D" Subsystem

Briefly explain this subsystem and its purpose. Replace the letter "D" with the appropriate subsystem name. Include any assumptions and constraints, any interfaces with other subsystems, its layer schematic, and any layer dependencies among Component Projects requiring management and oversight at the Program level. Include any subsystem public interfaces exposed to end users and any known operating system dependencies such as run-time libraries, classes, etc., if the architecture is dependent on their services.

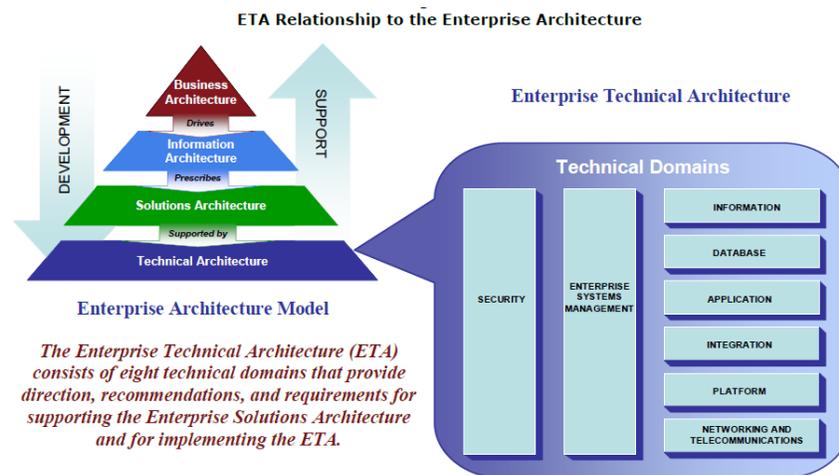
Add more subsystem descriptions, if necessary, or delete subsystem placeholders, if fewer than four exist.

2.3.7.10 Enterprise Technical Architecture

The Enterprise Technical Architecture Model is the one described in the COV ITRM Enterprise Architecture Standard. At the heart of this model are eight technical domains:

- Security
- Enterprise Systems Management
- Information
- Database
- Application
- Integration
- Platform
- Networking and Telecommunications

The technical architecture model representation is included here as a reminder of the areas to address in this section.



Each of the domains is a critical piece of the overall ETA. The Networking and Telecommunications and Platform Domains address the infrastructure base and provide the foundation for the distributed computing. The Enterprise Systems Management, Database, Application, and Information Domains address the business functionality and management of the technical architecture. The Integration Domain addresses the interfacing of disparate platforms, systems, databases and applications in a distributed environment. The Security Domain addresses approaches for establishing, maintaining, and enhancing information security across the ETA.

2.3.7.11 Enterprise Technical Architecture by Domain

Use the Commonwealth Enterprise Architecture Review "Form" in Microsoft Excel for each Component Project to highlight critical information needing oversight at the Program level. Document any dependencies across subsystems within the lines of business.

2.3.7.12 Security Domain

The security domain section is based on the COV security standards. Consider each of the following topics when creating this section: Risk Management (Vulnerabilities, Threats, and Risks), IT Contingency Planning, IT Systems Security, Logical Access Control, Data Protection, Facilities Security, Personnel Security, IT Asset Management, Communications and Operations Management, Access Control, Information Security Incident Management, and Business Continuity Management. Note to use the COV Information Security Policy and Standard Exception Request Form if there are valid reasons for requesting agency/security exceptions. Ensure to address risk assessments and security audits as separate sections.

2.3.7.12.1 Risk Assessment

Describe the Program risk assessment process. Develop a risk assessment schedule for planning purposes. Use standards and guidelines for risk assessments.

2.3.7.12.2 Security Audits

Per the Security Audit Standard, a security audit "is an independent review and examination of a...system's [information technology] policies, records, and activities." Controls are reviewed for adequacy and compliance; they are presented in the IT Information Security Standard.

Develop a security audit schedule for planning purposes, if appropriate. The overall security audit process is summarized below and should be expanded upon and/or modified to fit the Program's needs:

- Identify Security audit resources.
- Define a scope, schedule and audit checklist.
- Perform the audit.
- Document audit findings.
- Audited Agencies develop corrective Action Plans.
- Audited Agencies provide periodic feedback to VITA on progress of outstanding corrective action plans.

2.3.7.13 Enterprise Systems Management Domain

The Enterprise Systems Management Domain is one of the domains addressing the business functionality and management of the technical architecture. At the highest level, it involves service delivery, service support, and operations management.

2.3.7.13.1 Service Delivery

Service delivery includes network monitoring, monitoring servers, applications monitoring, net-flow analyzer, troubleshooting tools, Help Desk, Asset, Storage, Wireless LAN, Event, and Performance Management. Address each area.

2.3.7.13.2 Service Support

Service Support considerations are an input to any related procurements and operations and maintenance lifecycle costs. Service support covers supporting and changing subtopics.

Supporting – Help Desk

Describe who will operate the Help Desk and how communication will be managed to ensure the Help Desk has the latest information. Determine what inputs the Help Desk will need to transition to operations in a smooth manner and highlight them here and discuss in more detail in the Program Implementation and Transition to Operations Management Plan.

Changing

This subtopic is an input to the Configuration and Change Management (CCM) Plan. Provide a summary paragraph alluding to the CCM Plan. Ensure the following items are addressed in the CCM Plan based on the COV ITRM Enterprise Architecture Standard including:

- Versioning Process and Tools.
- Newly developed applications that must have the code documented and maintained per the COV ITRM Enterprise Architecture Standard.
- Source Code Repository(ies) Identification – (reference paragraph 5.1.7 of the EA Standard).
- Accessible and Transferrable Repositories.
- Documentation assets that transition to operational use especially if training manuals, user manuals, etc., were created for Component Projects within the Program.
- Comply with ANSI standards according to the EA Standard.
- Define the following:
 - Artifact
 - Reusable Components
 - Configuration Item (reference pg. 5.8-4 of the COV ITRM EA Standard)
- When state owned or leased buildings are involved, cite it directly (reference pg. 5.51 of the COV ITRM EA Standard).
- See pg. 5.83 of the EA Standard for input into the CM Plan.

2.3.7.13.3 Operations Management

Operations Management is different than Project Management in that there is no definitive start and end date to implement solutions, but a day-to-day accomplishment of defined processes. Per the EA Standard, Operations Management includes: installation, repairs, maintenance, jobs management, performance monitoring, data capture for reporting, and fault management. Operations Management, how they perform their day-to-day responsibilities, should be an input into the Program Implementation and Transition to

Operations Management Plan. Any considerations created as a result of this program should be documented here.

2.3.7.14 Information Domain

The Information Domain addresses the business functionality and management of the technical architecture. It deals mainly with reporting requirements based on data warehouse, business intelligence, and other related tools. Health Information Exchange is an example topic for this section. The Program must follow data standards for quality and classify data according to its sensitive nature.

Consider developing a table to display the information domain deployment stack for reporting, data warehousing, and business intelligence to be used for each Component Project across the Program. The idea is to develop consistency across Commonwealth Programs.

2.3.7.15 Database Domain

The Database Domain is one of the domains addressing the business functionality and management of the technical architecture. It describes the technical areas of the software systems that support storage and retrieval of data and the types of database(s) software supporting the applications. Topics to be discussed in this section include what type of database will be used (hierarchical, networked, relation, object-oriented), Other Data Access Methods, Data Recovery and Backup, Data Dictionary, Database Administration, Enterprise Information Integration (EII), database design (standards and tools), and data modeling. Follow the domain-wide requirements outlined in the COV ITRM Enterprise Architecture Standard to complete these sections.

Consider developing a table to display the database domain deployment stack for directory services, database metadata services, database access services, message formats, transfers, and integration, transaction process monitor integration and services, instant messaging, mashups, and service oriented architecture to be used for each Component Project across the Program. The idea is to develop consistency across Commonwealth Programs.

2.3.7.16 Applications Domain

The Applications Domain is one of the domains addressing the business functionality and management of the technical architecture.

2.3.7.16.1 Service-Oriented Architecture

Address the N-tier Service-Oriented Architecture (SOA) in this section. The SOA architecture is based upon the premise that the smallest functional unit constitutes a "service." This enables services to be shared across architectures. Identify any existing service-oriented architecture in the state's repository to ascertain re-use capabilities. Then identify service-oriented architecture that is needed to be built as a result of this Program.

2.3.7.16.2 Development and Language Tools

Consider developing a table to display the development and language tools deployment stack to be used for each Component Project across the Program. The idea is to develop consistency across Commonwealth Programs.

2.3.7.17 Integration Domain

The Integration Domain addresses the interfacing of disparate platforms, systems, databases and applications in a distributed environment. Its main topics are database integration and directory services. Describe the database(s) and Other Data Access Methods in accordance with the COV ITRM EA Standard.

Consider developing a table to display the integration domain deployment stack to be used for each Component Project across the Program. The idea is to develop consistency across Commonwealth Programs.

2.3.7.18 Platform Domain

The Platform Domain is one of the domains addressing the infrastructure base providing the foundation for distributed computing. Adherence to platform domain standards allows data to be shared between disparate systems that do not easily communicate normally. Use the Commonwealth Enterprise Architecture Review "Form" in Microsoft Excel for each Component Project regarding specific platforms; this will ensure consistent data collection and adherence to Enterprise Architecture information requirements.

2.3.7.19 Networking and Telecommunications Domain

The Networking and Telecommunications Domain is one of the domains addressing the infrastructure base providing the foundation for distributed computing. This domain is integral to ensuring the future state of networking and communications in the COV. In discussing the solution state, address facilities telecommunications, LAN, WAN, phone data, multimedia, physical location maps (cabling, pathways, and associated documentation), if applicable. Please be reminded per the COV ITRM EA Standard, "that when state-owned or state-leased buildings are involved, agencies must notify the Department of General Services, Division of Engineering and Buildings. When local government-owned buildings are involved, agencies must notify the local government entity responsible for networking and telecommunications."

Consider developing a table to display the platform domain deployment stack for LANs, WLANs, WAN, mobile and remote access to LANs, and wireless telecommunications to be used for each Component Project across the Program. The idea is to develop consistency across Commonwealth Programs.

2.3.7.20 Enterprise Information Architecture

Because of the decentralized nature of data management in the Commonwealth, it is important to assess data that can be standardized across sub-functions within lines of business. Refer to the data asset metadata repository to determine if an existing data

asset(s) exists that fulfills an integral part of the data architecture and list those resources in the appropriate Enterprise Information Architecture section.

2.3.7.20.1 Data Management and Migration Plans

The intent of the Data Management and Migration Plans are to provide awareness of the nature of the data being used for the Program and to articulate the plans and approaches for handling that data. Document the data management and migration plans.

2.3.7.20.1.1 Data Management Plan

Data Management involves developing a Data Use, Data Subject Area and Information Classes, and Data Sharing Plans. Document the data management plans.

2.3.7.20.1.2 Data Use Plan

Use the Commonwealth Enterprise Architecture Review 'Form' in Microsoft Excel to document data usage for each Component Project application. If the form does not allow for multiple applications for a single Component Project, consider using multiple forms for each application.

2.3.7.20.1.3 Data Subject Area and Information Classes

The Enterprise Architecture Group developed a Microsoft Excel workbook for Data Subject Area and Information Classes. Complete the Data Subject Area and Information Classes section for each Component Project application associated with the Program. Then identify what classifications of data are being either written (published) or read (subscribed) by the application. All Enterprise Architecture Review workbooks will become appendices to this Program plan.

2.3.7.20.1.4 Data Shared among Subsystems

Identify the common data shared among subsystems and the source of that data.

2.3.7.20.1.5 Data Migration Plan

This Data Migration Plan describes the strategy, preparation, and specifications for converting data from source system(s) to target system(s). This plan describes the overall approach, assumptions, and processes that will be used in the data migration, tools needed to execute the conversion, and strategy for data quality assurance and control.

2.3.7.20.1.1 Data Migration Scope

Provide a rationale for the migration and a general description of the migration effort boundaries. This may include, but not be limited to, specific system functions affected and functions/data not affected/migrated. Provide a high-level mapping of the data and data types to be migrated to the new system.

2.3.7.20.1.2 Data Migration Approach

Describe the approach to extract, transform, clean, and load data from the source to target destinations.

2.3.7.20.1.3 Data Migration Objectives

Describe the data migration objectives.

2.3.7.20.1.4 Assumptions

Identify the statements believed to be true for the data migration to be considered successful. These may concern such issues as related software or hardware, operating systems, end-user characteristics, and/or the data that must be available for the migration.

2.3.7.20.1.5 Constraints

Identify any limitations for consideration prior to the data migration from the old to the new product or IT system.

2.3.7.20.1.6 Risks

Describe any risks associated with the data migration and proposed mitigation strategies.

2.3.7.20.1.7 Migration Schedule

Provide a milestone schedule of migration activities to be accomplished. If appropriate, tables and/or graphics may be used to present the schedule. Ensure that this information is appropriately integrated into the overall Program schedule. The schedule should be as comprehensive as possible; however, the schedule may be revised as needed at later points in the lifecycle. Rather than providing this schedule in the table below, the schedule may be added as an Appendix and may be developed in a project management tool.

2.3.7.20.1.8 Data Quality Assurance and Control

Describe the strategy to be used to ensure data quality before and after all data conversions. Also describe the approach to data scrubbing and quality assessment of data before they are moved to the new or migrated system. Describe the manual and/or automated controls and methods to validate the migration and to ensure all data intended for migration have been migrated. Describe the process for data error detection and correction, and the process for resolving anomalies.

2.3.7.20.1.9 Data Migration Preparation

Before data migration begins, preparation tasks should be planned.

Prerequisites. Describe all the prerequisite processes that must be completed prior to data migration. Describe specific data preparation requirements.

Backup Strategy. Describe how the source and target data baselines will be created and managed prior to any manipulation or migration. Also describe backups that may occur incrementally while stepping through the process of preparing, moving, and manipulating the data during migration. Are the backup strategies across the agencies consistent?

Restore Process. Describe the process to restore the source data if the need to revert to a previous back-up is identified at any point during the migration process. Are all the restore processes across agencies consistent?

Data Migration Specifications. Provide a cross reference of the input (source) data to be migrated to the resultant output (target) data. Also identify if any of the data are derived from other data. Provide transformation/cleansing rules for each data element and any other additional considerations.

Use the Data Migrations Specifications Table or a similar format. If the specifications are lengthy, consider making the Data Migration Specifications Table an appendix.

2.3.7.21 Website Considerations

Does a website or websites need to be created or modified as a result of this Program? If yes, document what existing websites will require modifications. If websites need to be created, so indicate here as well as identify the general purpose for the newly created website(s). Ensure to review any website policies, standards, guidelines, and templates and identify any concerns that need to be monitored at the Program-level accordingly.

2.3.7.22 Procurement Considerations

Consider long lead times for procuring hardware, network components, software, and Request for Proposal (RFP) lifecycles. A simple statement of need does not translate into forward momentum in procuring equipment and services.

Also consider the replacement lifecycles for personal computers when determining operations and maintenance costs.

Production servers, according to the COV ITRM EA Standard, must be under a maintenance agreement for the planned life of the server. Review the COV ITRM EA Standard for additional details.

Document any approaches based on lessons learned in this area. If items and services need to be procured and there are unique specifications and experience needed, include these concerns in this section.

2.3.7.23 Testing Considerations

This is not a test plan. This section addresses testing considerations and strategy to verifying and validating the solution architecture. The detailed testing approach for each facet and integrated whole of the overall solution should be addressed in test plans associated with the Component Projects. You should address here what must be done to

assure that all interfaces and interactions perform as documented. You should also discuss the approach you will use to verify the integrity of your architectural design.

2.3.7.24 Training Considerations

If, during the course of developing the overall architecture, concerns arise regarding the types of training or the topics to include in training, for example, address these training concerns here or else remove this section.

2.3.7.25 Organizational Change Management Considerations

If, during the course of developing the overall architecture, suggestions and concerns arise as to the organizational change impact, address them here or else remove this section.

2.3.7.26 Business Process Impacts

As a result of technology implementations, inevitably there are corresponding improvements to business processes. As part of the solution framework, these business processes should be reviewed as part of the Program. These business processes should be highlighted/grouped here and detailed in a Program-level requirements document, identifying the business process agency source, business process description, and what impact the new implementation will have on the existing process.

2.3.7.27 Architecture Implementation Plan

Ensure an architecture implementation timeline and dependencies for successful completion are included in the Program Implementation and Transition to Operations Management (IMP) Plan. Include narrative to address the overall implementation strategy. Reference it here and address in the IMP Plan.

2.3.7.28 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.8 Program Resource Management Plan

2.3.8.1 Introduction

The purpose of the Program Resource Management Plan is to capture how the Program Manager will manage human resources throughout the life of the Program. The goal is to have sufficient staff with the right skills and abilities to ensure successful completion. An overall approach will need to be developed to handle cases where critical resources turn over, starting with identifying which roles are critical and why. The suggested approach to take is to look at the staffing needs of the Program Management Office (PMO) as well as for each Component Project. Consider putting all Component Project details as appendices to this plan.

2.3.8.2 Resource Management Approach

Discuss the process of planning, acquiring, training, tracking, and transitioning Program resources. Consider using the graphic below or creating your own for depicting the approach.

2.3.8.3 Resource Planning

Resource planning is an important Program event. It sets the baseline for resource usage, budgets, training requirements, and the accomplishment of work.

2.3.8.4 Resource Planning Matrix

Consider preparing a table of information that looks at resource type, availability in hours, and level of expertise. This will be the baseline information. Any changes to the resource planning table will need to go through a change management process as any changes could influence the budget and schedule. Consider developing the resource requirements for the Program Management Office followed by the Component Project staffing requirements.

2.3.8.5 Resource Assumptions and Constraints

Discuss the assumptions and constraints, if any, as they relate to resource estimates for planning purposes.

2.3.8.6 Roles and Responsibilities

Develop short descriptions of roles and responsibilities suitable for this Program including the Program Management Office personnel and Component Project resources. It is common to have multiple roles assigned to a single resource; in cases such as this, list all roles as if for one person. Below is a list of common roles. Adjust accordingly.

2.3.8.7 Responsible, Accountable, Consulted, Informed (RACI) Chart

A Responsible, Accountable, Consulted, and Informed (RACI) Chart is a best practice that should be incorporated into a Resource Management Plan when further clarifying Program resources roles and responsibilities. Begin by listing the cross-functional activity for a particular process. Instead of addressing a particular individual, it is preferred you address the RACI by role. See the below example pulled from the VITA Intranet. Use the below template or create one suitable for the Program. In such cases, ensure appropriate risk mitigation strategies are developed.

2.3.8.8 Required Skills and Abilities and Gap Analysis

An analysis should be accomplished to identify the needed skills and abilities and determine where gaps exist. These gaps can be filled by borrowing state resources or can be procured through normal contracting methods. With proper planning, there should be enough time to acquire and train resources to effectively perform their role. Every key skill needed to complete deliverables must be identified and rated on a scale such as 1 – 4 where 1 = Proficient and 4 = Novice (use whatever scale is appropriate for the Program). Heavy

dependence on external resources introduces risks to the Commonwealth especially when those resources are no longer used on the Program.

2.3.8.9 Resource Acquisition

Discuss in this section what resources are intended to be acquired including both state employees and consultants. For the state employees, indicate which resources are new hires and which will transfer from other agencies or departments to contribute to the Program.

2.3.8.10 Resource Training

Describe the types of training available to the Program resources including on-boarding, on-going, job shadowing, etc.

2.3.8.10.1 On-boarding Orientation Training

Each Program should have on-boarding orientation training materials; these could be in the form of a PowerPoint presentation, document, or CBT, for example. In some cases, it may be appropriate to use user guides, hands-on exercises, mentor/protégé training, etc. When new staff are acquired it is best to give them information on the background of the Program and/or Component Projects based on their role, the current status, their roles and responsibilities in relation to the team, introductions to the team and associated resources, review of the standards, policies, and procedures, and introducing them to the facility(ies), and the Program's processes.

2.3.8.10.2 On-going Training

On-going training looks at what training is needed throughout the Program at specific points within the Program. Staff skill sets should be reviewed against any roles and responsibilities needed for the next phase of a Program or Component Project to execute the activities at the right time. Describe what types of training are available. It is important to ensure that the Program resources have the right skills and abilities when they are needed.

2.3.8.11 Resource Tracking

Day-to-day management of Program resources is the responsibility of the Program Manager; however, day-to-day management of Component Project resources is the responsibility of respective Project Managers. Resource tracking should be accomplished via a maintained spreadsheet.

2.3.8.12 Resource Transition

A Program, although perfectly planned, never remains static. As such, resources will transition to and from the Program throughout the Program's lifecycle. This section addresses those activities necessary to facilitate a smooth transition.

2.3.8.12.1 Resource Transition during Program Execution

Explain the activities that will occur if a resource chooses to transition to another Program/Project/Organization. Typically, the skill sets will be addressed to ensure a change in responsibilities is possible with existing resources in which case they may absorb the additional responsibilities or give up their current responsibilities to take on a more critical role. Whichever the case, some type of assessment will be necessary. Additional training for the resource taking the place of the transitioning resource may also be necessary.

2.3.8.12.2 Resource Transition at Program Closure

Explain the activities that will occur when the Program closes and resources transition. The possible disposition of resources include transitioning to another Program/Project/Organization, to an Operations and Maintenance role, another role within the Commonwealth of Virginia (COV), or moving to an external entity. This phase can be considered a critical activity as it will color the perception of the resources if not executed properly. Proper planning and communication for and to transitioning resources to a mutually agreeable "next step" is a win-win situation for the transitioning resources and the COV. The COV can use their success rate at performing transitioning activities at a Program's closure to recruit and retain personnel.

2.3.8.12.3 Resource Replacement

Explain the activities to replace resources during Program Execution. State resource vacancies are handled through the normal COV acquisition processes. Consultant resources are typically replaced in accordance with contractual requirements. Resumes are submitted to COV for approval, interviews are conducted, and candidates are hired accordingly. Resources must meet the minimum requirements for the position. Prior work references are checked and a background check is conducted prior to hiring.

2.3.8.13 Metrics Collection and Action Plans

Document the approach and metrics to be collected when managing Program resources. Document any action plans developed as a result of the metrics and document them in appropriate status reports. All metrics will be collected in an executive-level dashboard and presented at appropriate stakeholder meetings.

2.3.8.14 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.9 Program Procurement Management Plan**2.3.9.1 Introduction**

Provide a brief overview of the purpose and content of the Program Procurement Management (PRO) Plan and an outline of what can be expected from the document. It should also identify the plan's intended audience.

2.3.9.2 Procurement Roles and Responsibilities

Identify the Procurement roles and responsibilities for the Program team, including any informal hierarchical roles from the Procurement and Contracts Departments.

2.3.9.3 Commonwealth-Level Program Services

Provide a brief explanation as to the Commonwealth services that will be performed for this Program, such as infrastructure and IT hosting.

2.3.9.4 Types of Services to be Outsourced

List the types of services that will be outsourced. Identify the type of contracts most likely to be the best choice(s) for this Program.

2.3.9.5 Types of Commodities to be Procured

List the major types of commodities, those that will be procured often and in large quantities. Identify the type of contracts most likely to be the best choice(s) for this Program.

2.3.9.6 Commonwealth Procurement Process

Briefly describe the Commonwealth Procurement process pertaining to this program, including eVA.

2.3.9.7 Contract Approval Process

Describe who has the authority to commit the Commonwealth and indicate their warrant level (dollar value).

2.3.9.8 Decision Criteria

Describe the decision criteria for source selection. Decision criteria examples include quality, cost, completion by a stated date, past performance, etc.

2.3.9.9 Vendor Management

Describe the process(es), once vendors have been awarded a contract, for vendor management by the Program team and the Procurement and Contracts Departments.

2.3.9.10 Program Procurement Team Contact Table

Include the Program Procurement Team Contact information, including their name, Program role, and any other pertinent data. Consider displaying this information in a table.

2.3.9.11 Metrics Collection and Action Plans

Identify the Procurement-related performance measures associated with the Program. There may be none.

2.3.9.12 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.10 Program Implementation and Transition to Operations Management Plan**2.3.10.1 Introduction**

Implementation is the process of transitioning production operations to a new process and/or new technology which the Program and/or Component Project has produced. Transition to operations and maintenance marks the completion of implementation activity and is the handover of the product or service to personnel who are responsible for the day-to-day operations and maintenance of the product. They will incorporate the end result into their daily operational environment and schedule it for periodic maintenance activities. The Program Implementation and Transition to Operations Management Plan ensures all the necessary steps are identified and planned with resources and infrastructure to manage and smoothly transition the Program's end results into part of daily operations.

2.3.10.2 Management Overview

Describe the management approach, points of contact, major activities, and implementation schedule.

2.3.10.2.1 Management Approach

Identify the overall approach, or governing principles, to follow for successfully implementing and transitioning the Program to Operations and Maintenance. Typically, this will include quality gateways or other achievements which signify the stability and maturity of the technology and process.

2.3.10.2.2 Integrated Transition Management Team Points of Contact

Identify the Program's implementation, and operations, and maintenance resources. Include their names, roles, and any other pertinent data. The Integrated Transition Management Team will be the group primarily responsible for ensuring all issues are resolved for a smooth implementation and transition to operations. The Team should include members of the Operations and Maintenance functions to not only inform the team of how their respective areas work, but also to be available to answer questions arising from the discovery process during the Program's lifecycle. Resources may include those knowledgeable in hardware, software, data, facilities, training, and processes.

- They may be responsible for the following:
- Developing and managing implementation and transition plans and documentation.

- Ensuring all interfaces are identified, defined, and managed.
- Ensuring all the quality gates are achieved for the transition.
- Supporting the preparation, review, and approval of Program/Component Project documentation, including closeout.
- Identifying and managing implementation and transition-related risks and issues.
- Developing and implementing operational controls.

2.3.10.2.3 Major Activities

Document the major activities needed for successful implementation and transition of the Program. Think across the Component Projects. Are there any interdependencies that need monitoring as the Program and/or Component Projects achieve their Project goals?

2.3.10.2.4 Implementation Schedule

Identify any milestone dates fixed across the Program.

2.3.10.3 Transition to Operations

Describe the acceptable readiness state for hardware, software, data, facilities, training, processes, and any other Program-specific area in need of tracking. For each Component Project on this Program, prepare a Go/No-Go Live Readiness Microsoft Excel spreadsheet. This checklist will be collected at the Program-level and evaluated against all other Go/No-Go Live Readiness spreadsheets to give an overall Program assessment rating. The checklist should be used at a point in time within the Component Project's lifecycle where it makes sense.

Transitioning elements of the Program may or may not be complex; however, steps can be taken to ensure the transition occurs as smoothly as possible to the Operations and Maintenance groups. Document any concerns connected with transitioning to Operations and/or an overall transition process, if appropriate.

2.3.10.4 Metrics Collection and Action Plans

Document the approach and metrics to be collected when managing the Program's transition. Document any action plans developed as a result of the metrics and document them in appropriate status reports. All metrics will be collected in an executive-level dashboard and presented at appropriate stakeholder meetings.

2.3.10.5 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.11 Program Organizational Change Management Plan

2.3.11.1 Introduction

This guidance comes from the Investment Technology Resource Management (TRM) Commonwealth of Virginia (COV) Program Management (PgM) Standard, which requires a

Program Organizational Change Management (OCM) Plan to be created. The Program view looks across Component Projects to ensure a consistent message is conveyed regarding organizational change. The Project OCM Plans should be appendices to this plan, noting that Categories 1, 2, and 3 Component Projects require an OCM Plan and OCM Plans for Category 4 Component Projects are optional. Note that all planning steps may not apply to this Program OCM Plan.

This section includes a brief overview of the Program Organization Change Management Plan. Briefly describe the purpose and the overall goal for communicating the change strategy.

Ensure the OCM Plan depicts executive leadership strategic plan(s) for the agency to move forward with newer technology, process improvements, job enrichment, increased profitability, and increased customer service to and for the agency(ies).

- The purpose of the OCM Plan includes:
- Assessing the impact of delivering the Program's products to the user organizations and individual users.
- Assessing the readiness of the user organizations and individual users to accept changes to working environments.
- Identifying, describing, and planning for necessary actions to facilitate those changes.
- Reducing resistance to change using various communication tools.

Perspective. Perseverance. Petition. Attitude. Resilience. Teachable.

These and many more positive traits are key elements to successfully changing an organization. Change can be challenging for many reasons. For some, it is the lack of control over what is changing and/or not understanding ~~the change~~ (whether it is the technology or the decisions behind the changes), to having fear over a potential loss of a job. But if those affected by change turn the axis of their world and shift focus from the negative to the positive, change can be an effective tool to greater job satisfaction, different opportunities, and new skills. The "What's In It For Me?" or "WIIFM" concept must be satisfied for affected employees to be willing to embark on this journey.

Organizational Change Management is a structured approach to shifting individuals, teams, and societies from a current state to a desired future state. OCM incorporates people, process, tools, and a number of disciplines, including, but not limited to:

- Psychology
- Cultural
- Organizational Design
- Training
- Human Resource Management; and
- Communications

OCM should be considered a standard Sub-Program under the Program as it involves many pieces, each of which can be its own Project.

At its root, OCM is focused on the “people component” of change. Along with Customer Relationship Management, OCM is successful only when the current culture and the behavior of COV employees are fully in sync with communicating excellence and added value to customers.

Although there are two types of change, incremental and transformational, a formal Program Organizational Change Management Plan is geared more towards transformational change. Incremental change involves small adjustments made on a continual basis – a process not geared towards “project” work. Transformational change, rather, focuses on the more dramatic/radical, large scale revolutionary and reconstructive change requiring planning, executing, closing, and evaluating effectiveness to answer the fundamental questions, “Did the change occur and did it have the desired affect?”

2.3.11.1 Vision

Document the current and future state. The future state supports the vision for the Program’s objectives and why change is necessary. Include areas such as training, process redesign, tools, position redesign, position reassignments, adding new organizational units, reporting/supervision changes, dissolving existing organizational units, etc.

2.3.11.1.1 Current “As Is” State

Briefly explain the current state of the organizations involved in the transformation. Identify the business and operational processes impacted by the project; those processes that provide input to the primary processes (supplier processes); or receive input from those processes (customer processes). Identify any controlling COV sections, policies, standards, guidelines, regulations, and/or procedures. Identify the knowledge, skills, and abilities required to perform the current business processes. Identify and describe the organizational structures established to perform, manage, and oversee the primary processes.

Include documentation such as current organizational charts, position descriptions, and Responsible, Accountable, Consult, and Inform (RACI) chart(s), and existing organizational charts, for example.

2.3.11.1.2 Future “To Be” State

Explain the “to-be” state of the organization(s) involved in the transformation. What is their involvement in the Program’s objectives? Steven Covey’s book, “Seven Habits of Highly Effective People,” states in habit #2, “Begin with the end in mind. Focus on the expected outcome.” By doing so, you will be able to focus on what has to change in order for the transformation to occur. Identify the business/operational processes needed once the Program goes live. Identify the stakeholders of those end processes and their interests/roles. Identify the knowledge, skills, and abilities required to perform the future state business processes. Identify the updated or newly formed organizational structures required to perform, manage, and oversee the end-state processes. Include documentation such as forward-looking organizational charts, position descriptions, RACI charts, process flow diagrams, etc.

2.3.11.2 Stakeholder Management

It is important to identify all stakeholders for and against this Program’s implementation. By identifying who they are, what impact they have on the Program, and whether they benefit or not from the Program’s goals and objectives is important to managing perceptions, communications, and change readiness. List the key stakeholders as they relate to organizational change management. Consider making a table that includes the stakeholder name, awareness level (high, medium, low), level of support, influence (high, medium, low), and contingency plans as needed.

2.3.11.3 Organizational Change Team

Identify the Organizational Change Team including business process owners, end users, and human resources representative (who is primarily responsible for developing the communications strategy). Identify who will be the Change Champion (usually the Program Sponsor or designated Agency Head). A Change Champion cannot be a Program or Project Manager.

Identify the Program Organizational Change Manager and the Project Organizational Change Leads for each Component Project delivering a product or service. A Change Champion is instrumental in communicating the change, coaching, training, and managing resistance. Add additional rows for each Component Project Change Leader, Business Process Engineer, and End User Representative, as applicable. Ensure no participant is left out.

Note that the Organizational Change Team may change as the Program progresses. Plan to update and expand the Organizational Change Team as the Program moves towards Implementation.

Consider drawing an organizational chart for the team. See the following example, which may or may not work for your Program. Edit accordingly.

The Organizational Change Team will be commissioned to assess the organizational change impact to Human Resources, training, policies, guidelines, and procedures. They will also be responsible for communicating to stakeholders, including end users, using the “WIIFM” focus.

Name	Roles	Responsibilities
	Change Champion	Communicates the vision for organizational change. Leads by example. Is involved at all times in initiating, managing, and implementing change. Works with people and ensures the right skill sets are in place at the right time. Keeps people focused and directed towards the end goal(s). Accepts feedback willingly.
	Program Organizational Change Manager	Manages the organizational change message <u>horizontally</u> across the Component Projects ensuring all OCM activities are satisfactorily accomplished. Is the main point of contact from a Program Management Office perspective for organizational change, attending mandatory

		governance and oversight meetings as required?
	Project Change Agent	Manages the organizational change message <u>vertically</u> within their respective Component Project ensuring all Project-related OCM activities are satisfactorily accomplished; manages the portion of the Project Schedule containing their activities, and reports activity status.
	Human Resources	Develops the Communications Strategy for conveying Program-wide organizational change regarding obtaining a new skill set, types of available training, the forums for training, etc.
	Business Process Engineer	Re-designs or creates from scratch organizational processes and procedures to support new technology implementations.
	End User Representative	Listens to and asks questions related to organizational change with an open mind. Participates in all levels of training as required, from technology familiarization to testing use-case driven scenarios. Tests redesigned and/or new organizational processes and procedures and supplies feedback.

2.3.11.4 Scope

Describe the Program Organization Change Management Plan’s scope and the phases in Program Management where organizational change is prominent. For the role of Organizational Change Program Manager, consider consulting with an outside source as this person will not be ingrained in the culture and can be as objective as possible.

2.3.11.4.1 Scope Statement

Briefly describe what effort is in-scope (e.g., training, training materials, communication plan, redesigned job descriptions, etc.) for organizational change to be effective. If applicable, indicate what is out-of-scope. The scope may also include a need to identify training facilities and establish user groups post implementation. Other specific scope items may include:

- Changes to business processes such as process re-engineering
- Critical milestones that must be met for success
- Changes to the Code of Virginia, policies, standards, and regulations
- Staffing and Leadership Analysis
- Organizational Structure Analysis and Design

2.3.11.5 Phase Activities

Phases are subsets of the overall Program lifecycle where OCM tasks (or activities) take place. Identify the specific organizational change activities based on scope for each phase.

The following diagram depicts the high-level organizational change activities associated with each program management phase. Note that these activities occur after the Program Initiation phase launches.

2.3.11.5.1 Program Initiation Phase Activities

List the Program Initiation Phase OCM activities. The following examples may or may not apply:

- Gain an understanding and well-rounded perspective of the overall Program vision.
- Host sponsor engagement sessions.
- Record initial feedback.

2.3.11.5.2 Program Management Planning Phase Activities

List the Program Management Planning Phase OCM activities. The following examples may or may not apply:

- Identify the Organizational Change Program Manager and Organizational Change Project Change Agents who may formally report to the Organizational Change Program Manager.
- Identify all Organizational Readiness Team(s) necessary to manage the changes.
- Develop any surveys and checklists appropriate to measuring the sponsor's success in organizational change management and to continually monitor the Program in this area.
- Develop a timeline schedule based on the Program's overall timeline and baseline it.
- Develop the OCM Plan and obtain approval.

2.3.11.5.3 Program Execution Phase Activities

List the Program Execution Phase OCM activities. The following examples may or may not apply:

- Execute the Organizational Change Management Plan and monitor its effectiveness.
- Adjust and adapt the plan based on environmental and other factors as needed. Follow usual and customary change management procedures (refer to the Configuration and Change Management Plan).
- Document any decisions, risks, issues, etc. as it relates to this workflow.
- Update any surveys and checklists, as appropriate, based on feedback.
- Monitor the OCM schedule.

2.3.11.5.4 Program Closeout Phase Activities

List the Program Closeout Phase OCM activities. The following examples may or may not apply:

- Document a Program Organizational Change Management Closeout Report.
- Document Lessons Learned.

2.3.11.5.5 Program Implementation Review Phase Activities

List the Program Implementation Review Phase OCM Activities. The following examples may or may not apply:

- Participate in a Post-Implementation Review.
- Document Lessons Learned.

2.3.11.6 Readiness Strategy

Describe the readiness strategy for ensuring a successful transformation.

2.3.11.6.1 Organizational Change Communications Plan

Everyone must always be kept informed of key developments and decisions related to change. Not all relevant details in terms of how it will impact people will be known upfront. Produce the key strategic, tangible, work products to communicate to all impacted team members and employees. As change leaders, we do not want to surprise anyone as that will lead to resistance. The Program Organizational Change Manager and Project Organizational Change Agents must be aware of anything causing dissatisfaction to ensure it is immediately and properly addressed. A constant and consistent message must be conveyed at all times.

Develop guiding principles that will govern the Organizational Change Team. Examples include:

- *Support those individuals who embrace the change; for they will lead all others towards the goal.*
- *Acknowledge any negative feelings and beliefs by documenting them for discussion and action (if any) for the Organizational Change Team. Provide feedback through various communication methods.*
- *Lead by example.*

Also address critical success factors, key messages, targeted audience(s), and stakeholder perceptions.

Document the communication management process(es), mechanisms, and measurements for effectiveness.

Use the following example communications methods in the Program, if they are a strong fit. Tailor them to suit the Program's needs.

- *Sponsor Committee Meetings*
- *Program Management Office (PMO) Meetings*
- *Project Management Team Meetings*
- *Organizational Change Team Meetings*
- *Organizational Change Team Readiness Reviews*
- *Program Newsletter*
- *Program Website*
- *Change Agent Network*
- *Training Campaign (Pilot Training, UAT, Train-the-Trainer, Organizational Readiness Workshops, Coaching, Adult Learning Style Workshops, etc.)*
- *Knowledge Transfer*
- *User Community Groups (End-User and Process Owner Groups)*

Consider putting the communications information in a table with headings such as Channels, Target Audience, Content, Frequency, and Responsible Party.

2.3.11.7 Training Plan

Document the Program Training Plan. Identify the objectives and schedule. The training objectives will help focus training development efforts appropriately. Address the specific process of influencing directly impacted employees and team members on the Program's intended benefits – what is in it for them?

2.3.11.7.1 Training Objectives

Document the expected training objectives to support the Program's success. Consider putting the training objectives in bullet form.

2.3.11.7.2 Training Schedule

Document the planned training schedule to include the types of training (to include Pilot, Train-the-Trainer, Workshops, Coaching, Hands-On, or Computer/Web-based Training, as needed), facility requirements, stakeholder group(s), and dates. Consider putting this information in table form.

2.3.11.8 Metrics Collection and Action Plans

Document the approach and metrics to be collected when measuring organizational change. Examples would include measuring the results of surveys, documenting issues and how many were resolved, how many students were trained, how many students needed re-training, etc. Document any action plans developed as a result of the metrics and document them in appropriate status reports.

2.3.11.9 Budget Considerations

Gartner recommends dedicating 15% of the Program budget to organizational change management activities. If no prior history exists regarding OCM-related expenditures in the COV, consider using the 15% as a yardstick by which to measure actual OCM activity. Consider outsourcing the Program Organizational Change Manager position, which will

require procurement involvement. Include any training facility and other training-related expenses, as necessary.

2.3.11.10 Post Implementation Considerations

Document any Post Implementation Considerations. Consider monitoring user groups for issues related to implementation to support operations. Also consider supporting operations for a period of time post-go live. Any lessons learned gleaned from this experience should be documented in the Lessons Learned repository on the VITA website.

2.3.11.11 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.3.12 Program Financial Management Plan

2.3.12.1 Introduction

The purpose of the Program Financial Management Plan is to ensure the Program completes within budget. The Program Financial Management Plan indicates the processes used to manage expenses throughout the Component Projects' lifecycles.

2.3.12.2 Program Financial Framework

The Program Financial Management Plan identifies all the sources and uses of funds and unites all the Component Project budgets into an overall budget for the Program. The Program Management Office (PMO) controls costs through each Component Project, managing the overall picture of financial health. Per the PMI Program Management Standard, 2nd Edition, five processes exist in Program Financial Management:

- *Establish Program Financial Framework*
- *Develop Program Financial Plan*
- *Estimate Program Costs*
- *Budget Program Costs*
- *Monitor and Control Program Financials*

In addition to discussing the processes used for managing the Program's finances, the Program Financial Management Plan will also do the following:

- *Identify the cost management approach*
- *Identify who is responsible for managing Component Project costs*
- *Identify who is responsible for managing the overall Program costs*
- *Identify who has authority to approve budget changes*
- *Identify the budget change process*
- *Identify metrics to measure performance*

Each of these processes will be addressed in the context of the Commonwealth of Virginia.

2.3.12.3 Program Costs

If Program Costs are updated in the Program Financial Management Plan, ensure the Charter Change Control Log references this change. Refer the reader to the Program Charter, if updates and changes to the Program costs are captured.

2.3.12.4 Cost Management Approach

Explain what cost management approach you will use when managing the Program. What system is used for collecting costs? How are costs allocated to the Program? What are the process steps for managing costs? Are you using a work breakdown structure that includes internal resources? If so, to what level are you managing costs? Will earned value be used?

2.3.12.5 Budget Management Team

Identify the key resources for managing the budget at the Program and Component Project level.

2.3.12.6 Metrics Collection and Action Plans

Document the approach and metrics to be collected when measuring financial activity. Typically, earned value metrics are used here. Document any action plans developed as a result of the metrics and document them in appropriate status reports. All metrics will be collected in an executive-level dashboard and presented at appropriate stakeholder meetings. Not only should these metrics be captured at the Component Project level, but also at the overall Program level. Examples include:

- *Cost Variance (CV)*
- *Cost Performance Index (CPI)*
- *Budget versus Actual by quarter*
- *Schedule Performance Index (SPI)*

2.3.12.7 Budget Change Request Process

Document the budget change request process. Typically, budget change requests follow the normal change request process within the Commonwealth Technology Portfolio (CTP) tool. A PMD Decision Brief will be prepared for approval.

2.3.12.8 Approvals

Obtain the appropriate approvals; add or subtract from the template.

2.4 Phase 4: Program Execution Phase

The Program Execution Phase consists of actively managing the IT program so that the component projects deliver their constituent parts in proper sequence while maximizing efficiency across the program. Also, the PMO is working with the Program Oversight Committee (POC) to manage overall scope, schedule, budget and risk, while continually evaluating and adjusting parameters in order to achieve the organizational benefit realization described in the Program Charter. Sometimes this means making 'course corrections' by reprioritizing and/or adjusting the scope and content of the program. This is done in a formal, structured process developed during the previous phase. As component projects deliver and close out, the PMO may begin the Transition to Operations activities, which also were planned in the previous phase. Generally speaking, when the last component project closes out, the program then transitions to the Closeout Phase.

2.4.1 Introduction

The Program Execution Phase is an exciting part of an IT program where components of the program are worked on and produce new products and services in accordance with the overall program deliverables. The entire lifecycle of component projects may be contained within the one Execution Phase of a program, or the components may have been planned

well beforehand, and their execution and closeout phases coincide with the Program Execution Phase. The phase officially begins with the Program Management Plan (PMP) approval action, and comes to a close with the completion of the last component project lifecycle. Throughout this phase, the Program Management Office (PMO) as well as the Program Oversight Committee (POC) periodically meets to monitor progress, make decisions about program priorities and actions, and generally guide the program to achieve the desired business impacts and outcomes.

Note that it is typical for programs to change over time – and it is probably a good thing! Business priorities change over time; constraints change over time; opportunities arise over time, etc. – and the IT program should adapt to changing conditions. That is one of the most important roles for the POC: Keep the program “on track” to deliver the desired business value, and “change course” as needed to best serve the interests of the sponsoring organization. For this reason, the POC should meet at least quarterly, per the Program Management Standard, and typically, the following topics are reviewed at the POC meeting:

- *Significant accomplishments since last meeting*
- *Program planned activities/significant milestones: short term, long term*
- *Ahead/behind schedule; explanation*
- *Component projects status:*
- *Scope, schedule, budget, risks, measures of success*
- *Top 5 Program-level Risks discussion*
- *Top 5 Program-level Issues discussion*
- *Program financial overview/status*
- *Program Benefit Realization: On track?*
- *Program Scope / Content: On track?*
- *Any change requests to consider?*

2.4.2 Program Status Reporting

2.4.2.1 Timing and Format

According to the Program Management Standard, programs in the Execution phase must submit quarterly status reports to VITA Project Management Division until the program has entered the Closeout phase. The format of the status report is left to the discretion of the individual PMO, but at a minimum the following information should be included:

- *A summary of each component project status.*
- *A summary status on the program accomplishments during the reporting period*
- *A summary status on the program accomplishments anticipated to complete in the next reporting period*
- *The report should specifically address program milestones and other key program tasks accomplished in the current reporting period and those key tasks that have been delayed, including the reason for the delay and impact on the overall program schedule*
- *Similar to the CTP Project Status Report, the following topics should also be presented at a Program level:*
 - *Key Status Indicators*
 - *Is the program on track to meet planned business goals and the associated measures of success?*

- *Are the costs within planned budget? (Planned vs. Actual)*
- *Is the program on schedule?*
- *Does the program remain within the approved scope?*
- *Is the program being managed to minimize or mitigate the identified risks?*
- *Component project risks that have been escalated to the Program level, or new Program risks*
- *IT Partnership infrastructure Requests for Service status*

Status reporting will continue until the Program Closeout Report is submitted. The PMD Project Management Specialist will advise Program Managers and Program Sponsors on specific reporting practices as needed.

2.4.2.2 Related Documentation

During the Program Execution Phase, Program Oversight Committee meeting materials (typically, PowerPoint presentations, supporting documents such as budget spreadsheets, and formal meeting notes) should be stored in the program repository (typically SharePoint). Normal artifacts captured during the Execution Phase are:

- *Adding / Removing scope from the Program:*
 - *Component projects are added to the program through the existing ITIM project lifecycle process; the POC typically is part of the approval hierarchy for project IBC approval and PIA approval; the POC decision is captured in POC meeting notes, as well as on the respective forms for the project in CTP. Additionally, such scope decisions (both adding and subtracting scope) should be captured in the program Change Log.*
- *Project Change Control Requests:*
 - *The POC typically is part of the approval hierarchy for CCR's; the POC decision is captured in POC meeting notes, as well as on the CCR form for the project in CTP.*
- *Program Issue Log*
- *Program Risk Log*
- *Program Change Log*
 - *This is typically a summary listing and/or working directory of project and program changes to scope, schedule, and budget. The project and program Change Control Request forms contain more detail and capture approvals.*
- *Project closeout reports*

The POC typically is part of the approval hierarchy for closeout reports; the POC acceptance of the closeout is captured in POC meeting notes, as well as on the project closeout form in CTP.

Additionally, because IT programs may span years, it may become necessary to revise key documents such as the Program Charter or certain Program Management Plan documents in order to support changes in the program direction or operation. Such changes should go through a formal change control process, and the revised documents should be approved by the POC, documented in the Program Change Log, as well as the specific document Revision History.

Although benefit realization may actually begin early on in the Program Execution phase, formal accounting for benefits typically is not seen until the Program Closeout phase or even the Post-Implementation Review. Therefore, it is not unusual for programs to begin tracking and reporting on benefits realization regularly during the Program Execution phase.

2.4.2.3 Transition to Operations Plan

Sometimes it is difficult to ascertain when an IT program is “done.” Typically, completion of the Execution Phase occurs when the last component project has been delivered, and the project closed out. But sometimes it is not clear, especially for long-running programs, when the ‘implementation’ phase of the program is complete and the ‘ongoing operations’ phase has begun. That is one of the many reasons that program leadership should be thoughtful about what set of deliverables need to be accepted by the project and program sponsors in order to warrant a declaration of the completion of the program. Aside from that question, program teams would be wise to put much thought and planning into the Transition to Operations Plan.

The Transition to Operations Plan was drafted and initially approved as a deliverable in the Program Management Planning Phase. The plan should be reviewed and updated if necessary, and then carried out.

As the program transitions out of the Execution Phase into the Closeout Phase, the POC may not see the need to meet regularly during the Closeout Phase, however there should be a formal recognition by the POC that the program is no longer in Execution.

2.5 Phase 5: Program Closeout Phase

The Program Closeout Phase consists of actively managing the transition of the program outputs to an ongoing operations state. By the completion of this phase the PMO will be closed and the approved Program Implementation and Transition to Operations Management Plan will be fully executed. Warranty support and asset conservation will be invoked and agency service-level agreements will be in force. The Program Closeout Report (modeled after the Project Closeout Report) will contain essentially everything that a Project Closeout Report does, but broadened and amplified to the Program level addressing the business objectives established in the Program Charter. The Program Closeout Phase is completed when the last Component Project has finished its Closeout Report and the CIO approved it.

The Program Closeout Report should at least contain the following information:

- *List all Program Deliverables and the date each was accepted by the user. Identify any contingencies or conditions related to the acceptance*
- *Program Scope: Summarize the Program Scope from the original Program Charter and summarize any scope additions / deletions, along with a brief explanation regarding their impact on program Measures of Success, Cost, or Schedule Baselines.*
- *Planned vs. Actual program budget, grouped by logical budget categories, with a discussion on the differences (if any) between the two*
- *Planned vs. Actual program funding, with a discussion on the differences (if any) between the two*

- *Planned vs. Actual program schedule, with a discussion on the differences (if any) between the two*
- *Operations & Maintenance Impact: Describe the plan for operation and maintenance of the products delivered by the program. State the projected annual cost to operate and maintain the new products. Identify the O&M funding source. Identify where and why this projection of cost differs (if it differs) from the Program Charter.*
- *Identify Lessons Learned for feedback to the Commonwealth Project Management process. (See PMD for instructions.)*
- *Benefits Realization: Summarize the current status of, and reasonable estimate for future, benefits realization, comparing/contrasting with the business justification as described in the IBC and Program Charter.*
- *Identify the date for completing the Post Implementation Review and the person responsible for this action.*
- *Capture Program Closeout Report Approvals from:*
 - *Program Manager/Director*
 - *Program Oversight Committee*
 - *POC Chair*
 - *Sponsoring Secretariat*
 - *Commonwealth CIO*
 - *Secretary of Technology*

2.6 Phase 6: Program Evaluation Phase

The purpose of the Program Evaluation Phase is to assess the long-term success of the Program. This evaluation occurs between six and 12 months after the completion of Phase 5: Program Closeout. The affected business unit (typically the Program Sponsor/Lead Organization) conducts research and analysis to determine whether the IT Program actually delivered the benefits which were articulated and agreed to in the IT Program Charter. An overall IT Program Post Implementation Review (PIR) document will satisfy the need for each Component Project.

The Program Post Implementation Review report will address:

- *How well the IT Program solved the Business Problem identified in the Program Charter*
- *Impact the deliverables had on the Core Business Activities*
- *Actual operational cost versus projected operational cost*
- *User acceptance or satisfaction with the delivered products*
- *Organizational change required or resulting from the deliverables*
- *Actual Return on Investment for the period versus projected return on investment*

Suggested Post Implementation Report Format

- *Cover Page*
 - *Title*
 - *Organization or Agency*
 - *Date*
 - *Authors Name, Contact Information*
- *Report Body*
 - *Executive Summary*

- *Table of Contents*
- *Introduction*
- *Background*
- *Post Implementation Review process or methodology used*
- *Program Investment Business Case*
- *Program Charter*
- *Findings*
- *Recommendations*

The requirement to complete a Program Post Implementation Review should not preclude the valuable practice of monitoring benefits realization throughout the program, starting with the business justification found in the IBC and Program Charter, continuing through the periodic delivery of component projects, and on to program closeout. The PIR assessment is uniquely valuable in that the passage of time after program closeout reduces the likelihood that benefits will be over- or under-inflated due to the "newness" of the program deliverables. The sponsoring organization will have "lived with" the new products for a while and will be better situated to deliver an unemotional, objective assessment of whether the IT program indeed lives up to the compelling justification for which it was commissioned in the first place.