Project Approach and Solution Section 7

3.2 Scope of Work

Statement of Understanding

Over the past year, the Medicaid landscape in this country has changed dramatically due to the Personal Affordable Care Act. As evidenced in her May 6, 2010 remarks about health care reform, US Health and Human Services Secretary Kathleen Sebelius, stated "…this law is the biggest expansion in health care coverage since Medicare. In addition, across the country Medicaid costs continue to grow." The Kaiser Foundation has estimated over 6 percent growth in costs in the next fiscal year. Given the landscape of growth in both member eligibility and program costs, states are looking to leverage information and analytics to effectively manage the Medicaid program in this next decade. One of the first steps in this next wave for West Virginia is the design, development and implementation of a new MMIS Data Warehouse and Decision Support System (DW/DSS).

The Bureau of Medical Services (BMS) completed the Medicaid Information Technology Architecture (MITA) State Self-Assessment (SS-A) in 2009. The purpose of the MITA state self-assessment is to stimulate an integrated business and IT transformation affecting the Medicaid enterprise. It includes an architecture framework, processes, and planning guidelines that allow State Medicaid enterprises to meet their Medicaid objectives within the MITA Framework while supporting unique needs of the individual state. The findings from the MITA SS-A included:

The data and reports submitted to BMS Finance may require a manual reconciliation process to insure accuracy.

An outside vendor receives and manages HMO encounter data.

When reports used by BMS, vendors and other State entities are run from multiple data stores, the results are not always consistent.

> For example, in the Office of Quality and Program Integrity (OQPI), the identification and management of cases are currently supported by multiple applications that are not integrated (JSURS, Word, Excel, Access). Data is pulled from multiple sources and must be crosschecked against MMIS claims status.

Data is stored in multiple locations and can be difficult to access. BMS program and operations staff does not always have direct access to desired data for program and operations management and decision-making

There is no decision support system (DSS) with automated capabilities; analysis capability is inadequate. Obtaining reports from the DHHR data store (DSS) requires MIS intervention and can be a slow and cumbersome process.

DHHR MIS staff operates the BMS data store at the direction of Medicaid Finance staff.

During the MITA SS-A, BMS established fifteen (15) goals and associated objectives for the state Medicaid program. The Data Warehouse and Decision Support Initiative (DW/DSS) is one such initiative with the following goals:

1.	**Operations Management**
	Reduce the potential for redundancy in services and payments by establishing integration with other entities
	Improve access to information necessary for operations management
	Enhance and automate reporting capabilities to measure compliance with operational performance measures
	Improve operational efficiency and reduce costs in the healthcare system
2.	**Program Management**
	BMS plans to use technology tools and provide training for data analysis to enhance decision and policy making capabilities
	Enhance the ability to analyze the effectiveness of potential and existing benefits and policies through the integration of claims data with clinical data
3.	**Care Management**
	Improve healthcare outcomes for members
	Establish access to data from other programs, agencies or entities
4.	**Program Integrity Management**
	Use decision support capability to support SUR activities
	Improve data access, data accuracy and the accuracy of process results, as well as reducing the effort required to achieve these results

BMS realized that access to timely and integrated information was the catalyst to delivering on the program goals and objectives. New processes, tools and technologies are required to meet the analytical and reporting needs of the current program.

In order to support these goals, BMS has plans to implement a DW/DSS that contains static, reconciled data with full decision support capabilities. The DW/DSS will support multiple business units including Finance, Pharmacy, MMIS Operations, Office of Quality and Program Integrity (OQPI), Program Policy, Medicaid Fraud Control Unit (MFCU) and Technology and Reporting. Furthermore, the DW/DSS will support an array of information consumers across business units and potentially outside of BMS including additional state and federal agencies. A subset of information consumers require easily accessible standardized reports that require limited interaction with technology. Data savvy business analysts will leverage the technology provided to slice and dice information, create "what–if" scenarios and predict outcomes and optimize results.

The implementation strategy for the DW/DSS is a phased approach designed to mitigate risk by fully defining scope for each phase. The phases include:

1. Phase One: Design, Development and Implementation of the DW/DSS

Phase One includes the design, development and implementation of an integrated data warehouse that includes eligibility, finalized claims, encounter, provider, lab and pharmacy data, and reference data. BMS and the preferred implementation partner will follow a standard Software Development Life Cycle (SDLC) to implement this solution. The SDLC includes Visioning, Planning, Designing, Building, Delivering and Operating the DW/DSS. The data required for this initial phase includes current year information plus three (3) years of historical data. Reporting in this initial phase includes financial analysis, standard and ad hoc capabilities, "what-if" analysis, clinical utilization, care management, and Surveillance and Utilization Review

(SUR). The SUR developed in Phase One is expected to become the CMS certified SUR during Phase Two of the project. The current Fiscal Agent (FA) is responsible for existing Management and Administrative Reporting (MAR), SUR, Medicaid Statistical Information System (MSIS), Home and Community Based Services (HCBS) and Drug Rebate reporting based upon the reconciled data that exists in the DW/DSS. This initial phase ends upon BMS' signatory approval of the DW/DSS for production and thirty (30) days of successful operations.

2. **Phase Two: Operations and Enhancements**

    a. **Operations.** Phase Two requires the implementation partner to Operate, Maintain and handle change management activities for BMS. Expectations regarding ongoing operations include operating the DW/DSS with minimal disruption within the service level defined, analyzing and responding to operational issues, maintaining a hosted facility that is conducive to a productive environment, employing competent and professional staff, proactively monitoring system performance and providing a training data analyst for support BMS staff. Additionally, the implementation partner will support BMS during the CMS certification of the DW/DSS during this phase. This includes document creation and review, presentation development, answering CMS questions and facilitating system review and access.

    b. **Enhancements.** BMS requires their implementation partner to allocate a pool of 8,000 hours per year to address additional functionality required by the Bureau. Anticipated initial Phase Two enhancements include the transition of MAR, SUR and other reporting to the DW/DSS. Depending upon the Program and information needs of BMS, additional data acquisition, reconciliation and reporting to support CMS certification may be included as an enhancement. Enhancements are expected to occur throughout the contract and the scope and timing of enhancements are planned accordingly between BMS and the implementation partner. Enhancements follow the SDLC and all processes and documentation are updated accordingly. All enhancements are determined complete upon the Bureau's signature approval.

Deloitte is pleased to submit our response to BMS' RFP and believe we are well positioned to successfully deliver on the Scope of Work for this initiative. Deloitte has a long-standing relationship with DHHR and has developed, maintained and enhanced the Integrated Eligibility (IE) application and IE Data Warehouse that leverages IBM Cognos for reporting and analytics. Deloitte has a collaborative approach to working with BMS and other vendors who do business with the state to implement the DW/DSS on time and on budget. Our competitors cannot match Deloitte's recent experience supporting MMIS implementations, MITA assessments and data warehouse implementations. Deloitte is your implementation partner of choice for the DW/DSS.

Vendor should describe in detail their approach to completing the Scope of Work as described below and to demonstrate a clear understanding of responsibilities.

The Bureau seeks to procure a Vendor to design, develop, implement, operate and enhance a WV BMS DW/DSS in the Vendor's facilities. The DW/DSS should meet the current business intelligence needs of the West Virginia State Medicaid Program and also be sufficiently flexible to meet future needs.

The DW/DSS is intended to support the business needs of several units within BMS and associated functions. The requirements of each are somewhat different as are the skill levels of the users. Some units benefit most from defined views that are easily accessed by users with limited expertise. Others require the ability for highly skilled staff to create complex queries based on a broad selection of data elements using sophisticated analytical tools, and to produce multiple views of the results.

Introduction

BMS seeks a vendor that meets not only the current business needs of the West Virginia Medicaid program but also a solution that is flexible to meet the future needs of the program. Deloitte's solution, approach and methodology bring much more than a simple "point solution" to you. We have a broad knowledge of Data Warehousing technologies and Business Intelligence tools that we can apply to your situation. Our table below gives a snapshot of our solution and approach that is further described in this and subsequent sections of our proposal.

Deloitte Solution	Deloitte Approach	Project Locations
Pre-defined MITA based requirements that enhance and streamline the requirements gathering process	███████████████	Onsite Project Central
		• Charleston, WV (RAPIDS facility)
Reporting Framework based upon Cognos 10.1 enhanced with high quality and consistent report generating capability	███████████	Offsite Development and Testing
		• Camp Hill, PA. State Government Center of Excellence
Deloitte Medicaid Data Model loaded and configured upon Oracle 11g database platform	███████████████	Offsite Production, Testing, Training, and Development Hosted environment:
Deloitte ETL framework with full audit, error handling and audit reporting configured on top of Informatica PowerCenter	██████████	• IBM – AoD Operations, Sterling, Virginia
		Disaster Recovery environment:
Enhanced analytical capability using Clinical Risk Grouping software (CRGs)	• ████████████	• IBM – AoD Operations, Phoenix, Arizona
Enhanced predictive analytics solution using SPSS Modeler from IBM		
Project Management framework based upon PMI and supported by our Web-based Project Management Center tool		

Solution

Deloitte brings a solution based upon leading edge software products that align with current DHHR technologies. In addition Deloitte will bring reusable solution components that are customizable to BMS requirements and are based upon non-proprietary software assets to allow for future expansion. We will transfer these components and related assets to the DW/DSS project from multiple public and private sector health care experiences. This transfer and modify approach will streamline most of the project activities, and lower the risk of implementation; while preserving the flexibility BMS requires.

Deloitte will rely upon an industry leading hosting vendor to provide hardware, software and network capabilities for our multi-environment infrastructure. Our proposed hosting solution provides state-of-the-art Tier III capabilities for the development, testing, training, production and disaster recovery environments in alignment with stated RFP requirements.

For further detail on our Business and Technology Solution please refer to Sections 10 and 11 respectively.

Approach

Deloitte will employ a two-pronged approach to the implementation of DW/DSS within Phase 1. Onsite project team members will lead and drive day-to-day activities that are directly visible to BMS. We have traditionally held firm on the importance of having a team in Charleston working side-by-side with you to collaborate on the issues that we collectively face on a daily basis. In parallel we will have a team that will work remotely either in the hosting facility or our State Government Center of Excellence to build infrastructure, software code, and detailed code specifications. This approach will continue into operations and enhancements in a similar manner. This approach has proven to lower overall cost, increase quality and reduce risk by reusing not just software and related assets, but also reusing the experiences of team members that have deep technical and industry knowledge on those reusable software and related assets.
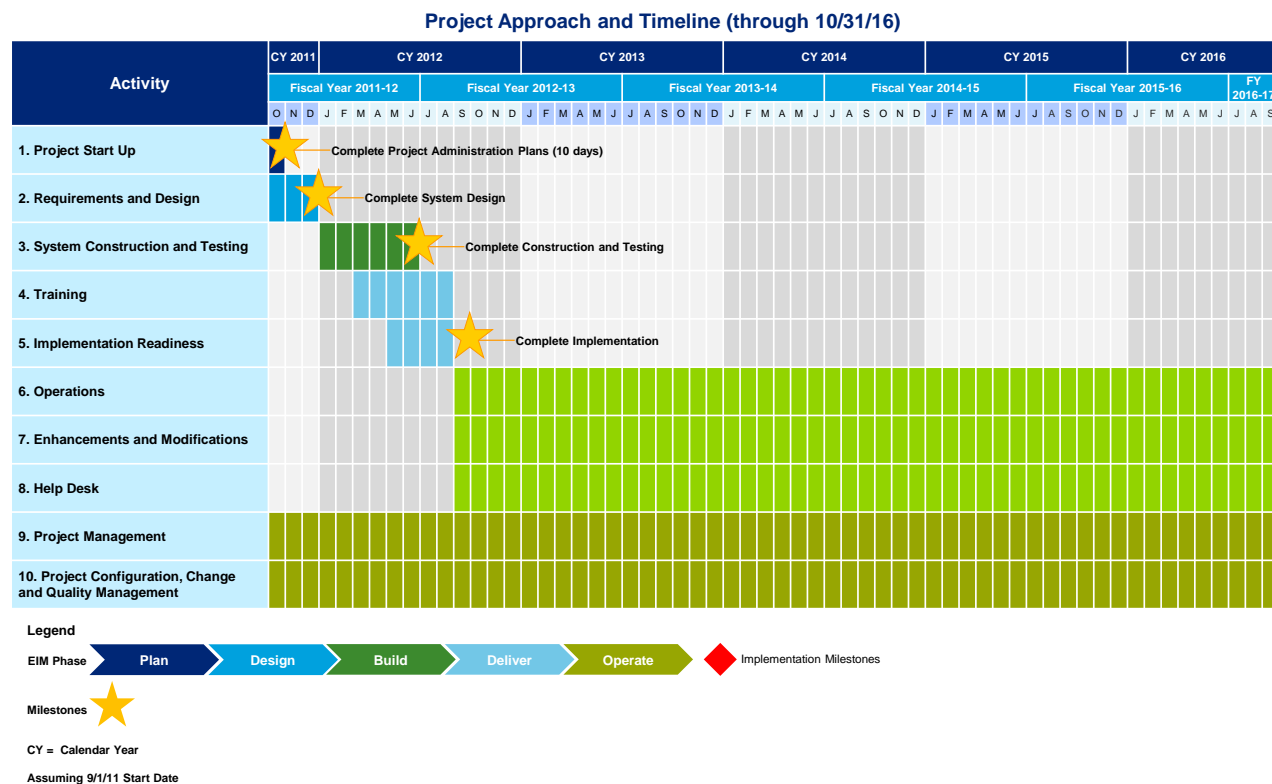
We bring this deep experience with data integration, data modeling, and reporting and analytical applications in Health and Human Services. While our technological credentials are known and documented, we also bring Subject Matter Expertise (SME) to DW/DSS in regards to Medicaid Program Policy, Actuarial data analysis and clinical analysis. Our approach looks at the business requirements and processes, as well as the technical requirements and architecture. Through our proven methodology we provide a framework in which to execute project activities and provide timely and relevant deliverables. These elements combine to allow Deloitte to present you with a complete solution to your DW/DSS needs.

Project Approach and Timeline (through 10/31/16)

Activity	CY 2011	CY 2012	CY 2013	CY 2014	CY 2015	CY 2016	
	Fiscal Year 2011-12	Fiscal Year 2012-13	Fiscal Year 2013-14	Fiscal Year 2014-15	Fiscal Year 2015-16		FY 2016-17
	O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S

Figure contents:

1. Project Start Up — Complete Project Administration Plans (10 days)
2. Requirements and Design — Complete System Design
3. System Construction and Testing — Complete Construction and Testing
4. Training
5. Implementation Readiness — Complete Implementation
6. Operations
7. Enhancements and Modifications
8. Help Desk
9. Project Management
10. Project Configuration, Change and Quality Management

Legend
EIM Phase: Plan → Design → Build → Deliver → Operate | Implementation Milestones
Milestones (star)
CY = Calendar Year
Assuming 9/1/11 Start Date

WV_DW_DSS-044_3

Figure 7-1. Project Approach and Timeline.

Throughout the remainder of *Section 7* we describe our Phase One and Phase Two approach and services that support that approach. Listed below is a snapshot of the tasks and where the proposal details can be found.

Phase One: Design, Development and Implementation (DDI)

Phase One of the DW/DSS provides the foundation required to support the reporting and analytical needs of BMS. The implementation of a data warehouse that contains static, reconciled data with full Decision Support capability addresses the limitations of the current system and enables the state to move towards its vision of a MITA-oriented enterprise. The following table identifies the primary scope and tasks for this first phase:

Scope of Work	Tasks	Proposal Details
Project Startup	• Facilitate Initial Project Kick-off meeting between BMS and Team Deloitte Key staff • Validate Phase One project timelines • Validate Phase One Project Deliverables • Validate Roles and Responsibilities of Team Deloitte Key Staff • Project Orientation	• Section 7: Project Startup 3.2.5
Initial Project Planning	• Validate High-Level Enterprise Requirements and MITA initiatives • Validate Technical and Data Architecture • Validate Detailed Business Requirements • Validate Detailed Reporting and Analytic Requirements	• Section 7: System Design and Change Management Methodologies 3.2.16 • Section 7: Requirements Definition and Analysis

Scope of Work	Tasks	Proposal Details
	• Validate User Community for Phase One – Finance, Pharmacy, MMIS Operations, Office of Quality and Program Integrity, Program Policy Unit, Medicaid Fraud Control Unit and Technology and Reporting • Validate User Community Skill Level for DSS	Activities 3.2.6
Install and Configure Hardware and Software at hosted facilities	• Document operating platform for the DW/DSS solution • Document Operational Support for the DW/DSS solution • Stand-up servers and infrastructure for web-portal, database and analytics environment • Install and Configure web-portal, database software and Cognos Software • Set-up and validate network connectivity • Configure data security, network security and physical security	• Section 11: Vendor Hosting 3.2.1
Design, Develop and Implement web portal, ETL, data warehouse, Metadata and report repository	• Design Web-Portal • Design Enterprise Data Values • Design Data Architecture • Design Data Warehouse Schema • Design source extracts and ETL Mappings • Design Metadata schema • Design reports required for CMS Certification • Develop and Test Data Warehouse schema and tables • Develop and Test source extracts and ETL Mappings • Develop and Test Metadata schema • Develop and Test Reports required for CMS Certification • Implement Web-Portal, ETL, Data Warehouse, Metadata and Reports required for CMS Certification • Develop Implementation Plan • Document Integration of Implementation Functions • Assess Implementation Readiness	• Section 11: Proposed DW/DSS Solution 3.2.2, • Section 7: Detailed System Design Activities 3.2.7 • Section 7: System Construction and Testing Activities 3.2.8 • Section 7: Implementation Readiness Activities 3.2.10
Implement DSS	• Design Analytical Assets (Dashboards, Scorecards, Cubes, Predictive Models) • Develop and Test Analytical Assets (Dashboards, Scorecards, Cubes, Predictive Models) • Implement Analytical Assets (Dashboards, Scorecards, Cubes, Predictive Models) • Develop Implementation Plan • Document Integration of Implementation Functions • Assess Implementation Readiness	• Section 11: Proposed DW/DSS Solution 3.2.2, • Section 7: Detailed System Design Activities 3.2.7 • Section 7: System Construction and Testing Activities 3.2.8 • Section 7: Implementation Readiness Activities 3.2.10
Phase Two Enhancement Visioning and Planning	• Elicit, Analyze and Prioritize Requirements for Phase 2 • Document Requirements and submit to BMS for approval • Develop Project Schedule for Year 2 Enhancements	• Section 7: Requirements Definition and Analysis Activities 3.2.6

Phase Two: Operations

Phase Two begins with Maintenance and Ongoing Operations activities required to maintain the DW/DSS solution. The following table identifies the primary scope and tasks required for this phase:

Scope of Work	Tasks	Proposal Details
Operations	• Monitor Infrastructure • Monitor Database Performance • Monitor ETL Performance	• Section 7: Operations 3.2.11 • Section 7: Training Program 3.2.9 • Section 7: Help Desk Activities 3.2.13

Scope of Work	Tasks	Proposal Details
	• Monitor Data Quality • Monitor Report Performance • Monitor Help Desk activities • Monitor Service Level Agreements associated with Operational Performance • Monitor Training Needs • Monitor Application access • Schedule database backups	• Section 11: Technology Solution • Section 7: Operations Management Manual 3.2.20 • Section 7: Service Level Agreements and Key Performance Indicators 3.2.21
Maintenance	• Maintain and manage software licensing (OS, ETL, Database, Cognos, 3M) • Maintain and manage software updates and patches (OS, ETL, Database, Cognos, 3M) • Manage Security (Authentication and Authorization) at network, database and reporting level • Maintain and manage network connectivity • Maintain and manage ETL processing • Maintain and manage Reporting environment • Maintain and manage Help Desk • Monitor and Report on agreed upon SLA's	• Section 7: Operations Management Manual 3.2.20 • Section 7: Service Level Agreements and Key Performance Indicators 3.2.21 • Section 11: Technology Solution
System Change Management	• Perform Impact Analysis • Facilitate system changes through Change Control Board • Prioritize Change requests • Design, Develop, Implement and Operate change request • Update Documentation	• Section 7: System Development and Change Management Methodologies 3.2.16

Phase Two: Enhancements

Phase Two continues with Enhancements and Modifications to the DW/DSS that was implemented in Phase One. The RFP defines Enhancements and Modifications as follows:

- **Modification.** Change arising from normal business operations including but not limited to system maintenance, changes required to remain compliant with federal regulations and standards and correction of system deficiencies

- **Enhancement.** Change initiated by BMS to achieve strategic objectives, implement new programs and mature business capabilities

The following table identifies the primary scope and tasks for this phase:

Scope of Work	Tasks	Proposal Details
Support BMS during CMS Certification of DW/DSS	• Document enhanced reporting functionality provided by DW/DSS • Document ease of use and access to integrated information for BMS and business partners • Provide Program, Clinical and Actuarial Subject Matter Expertise to enhance BMS' ability to analyze information for effective decision making	• Section 10: Solution Alignment with BMS' Business Needs
Transition SUR, MAR and to DW/DSS	• Implement SUR and MAR • Develop Implementation Plan • Document Integration of Implementation Functions • Assess Implementation Readiness	• Section 7: Implementation Readiness Activities 3.2.10

Scope of Work	Tasks	Proposal Details
Facilitate, Organize and Prioritize Enhancements	• Perform Impact Analysis • Facilitate Enhancement through Change Control Board • Prioritize Enhancement requests • Design, Develop, Implement and Operate Enhancement • Update Documentation	• Section 7: System Development and Change Management Methodology 3.2.16 • Section 7: Enhancements and Modifications 3.2.12

3.2.5 Project Startup Activities

RFP reference: 3.2.5, Project Startup Activities, Page 38

The Vendor should propose an approach to project startup activities that is designed to educate and enlist the combined project team in a successful, collaborative effort. Vendor should describe in their proposal the goals to be achieved from proposed startup activities and the methodologies to be used to achieve those goals. Project startup activities should include:

- A kickoff meeting onsite at BMS offices that includes Vendor key staff members,
- Assembling the project team,
- Documentation review, and
- Project staff orientation.

Our approach for working with BMS DW/DSS staff is to co-locate Project and Solution Management in the Charleston, West Virginia area as determined by BMS so team resources can easily work together towards the completion of the DW/DSS deliverables included with Phase 1 DDI activities. The co-location of the team helps foster a team environment where we establish common goals and objectives and overall team camaraderie.

Project Start-Up and Launch Process

A clear understanding of project details and expectations upfront and working knowledge of Medicaid and DW/DSS will allow team members to focus on the task at hand – working to identify and implement a DW/DSS solution that addresses BMS needs. Deloitte's Project Start-Up and Launch Process is designed to establish a strong project foundation.

Confirm Project Details

Before kicking off the Requirements Definition and Analysis Phase, we will work closely with BMS to confirm critical project details. This step will help us build on our current, deep knowledge of BMS, and to customize our approach and tools to meet BMS's needs. During this phase, we will review the existing documentation provided in the Procurement Library with BMS to confirm our understanding of the project business case, goals, scope, critical success factors, and other key project elements. This step will help confirm project direction, expectations, and measures of success.

We propose to use our Project Start-Up Checklist to gather and confirm other key project information. Some of the key project information is:

- Identify project champions

- List key stakeholders

- Confirm key personnel team members and their responsibilities

- Outline ground rules of how the team will work together

- Confirm expectations for deliverables and status reporting

- Establish the project schedule and key milestones

- Confirm project communication vehicles

- Obtain information on project activities to date

- Compile initial lists of source documents

██████████████████████████

███

███████████████████

Activities	Goals
A kickoff meeting onsite at BMS offices that includes Vendor key staff members	Communication is critical to the success of any project, project meetings are integral part of communication. Project kick off meeting is a critical meeting that allows the Project Manager to set project goals and expectations and also provides a platform to communicate the shared view of project, establish a commitment by all staff, and review the project goals, objectives and critical success factors of the project. Deloitte proposes to conduct the meeting onsite at the project location with BMS project team, stakeholders, executive management, Deloitte key staff, and others who need to officially recognize the start of a project. The expected outcome of the kickoff meeting is that people who attend the meeting should leave with a clear view of: • The project organization and the key project staff • The project statement -- scope, definition, and objectives • The general schedule and activities • The key customers and stakeholders • The benefits these groups will realize upon completion of the project • The challenges to completing the project • Next Steps
Assembling the project team	Once the project has been given the official go ahead, Deloitte establishes the current project team and the project environment for this project phase. In this stage of the project, Deloitte proposes to assemble the key individuals who are tasked with getting the project underway. These initial leaders will work to confirm that staff, equipment, and facility resources are in place when needed. The remaining team members are assembled later when the full-scale development effort is initiated.
Document Review	In this stage of the project, Deloitte will work with BMS to identify the initial project documents that need to be reviewed with team. Some of the documents that may be reviewed during startup include but not limited to the following: • System specification • Project milestones • Procedures and standards that apply to the effort • Status report templates • Meeting agenda/minutes templates • Release approach
Executive Orientation and Training	The session will be designed to help executives quickly understand the potential breadth and depth of DW/DSS impact on BMS, including operations and systems, sister agencies, CMS reporting, and other stakeholders. This session will begin with a general orientation on DW/DSS and conclude with a discussion of strategic challenges and opportunities for the West Virginia Medicaid program
DW/DSS Workshop	Deloitte will conduct similar training for your designated DW/DSS Team and any other appropriate Subject Matter Experts (SMEs) and key stakeholders. This training/workshop will provide background information on DW/DSS and begin exploring the business and technical implications of a new DW/DSS on BMS. We anticipate conducting two workshops with 20 to 25 attendees in each session.

Activities	Goals
Create Project Book Of Knowledge (BOK)	Deloitte proposes to create a project book of knowledge that provides a historical record of project activities. BOK may contain at least the following types of information: • Project summary information • Planned and actual financial information • Planned and actual schedule information • Planned and actual staffing information • Project requirements list and requirements changes • Project risks and mitigation measures • Project issues and action items log • Work Product Identification with planned and actual delivery dates • Configuration items • Quality audit results
Baseline the project plan with management sign-off (Establish, Fine Tune, Approval)	The first step of the project start-up stage is to finalize the project plan and establish a baseline. Baseline refers to a plan that has been placed under configuration management so that changes to the plan are made under the change control process as discussed in Configuration Management of Project Planning and Project Execution. The plan is finalized by the Steering Committee. At this point, resources are committed and plans are made to quickly move to the execution phase. The Steering Committee approval represents a commitment to implement the project as described in the plan. This is a commitment to scope, schedule, and budget.

3.2.4 Initial Project Plan

RFP reference: 3.2.4, Initial Project Plan, Page 37

Vendors should propose an Initial Project Plan that describes how they intend to complete Phase One: DDI within nine (9) to twelve (12) months of project initiation. Components of this plan should include:

1. Project organization chart,
2. Description of project roles and responsibilities,
3. Staffing plan,
4. Hosting plan,
5. Project schedule (including a Work Breakdown Structure),
6. Training plan,
7. Testing plan, and
8. Project management processes for:
   - Project scope management,
   - Project integration management,
   - Project schedule management,
   - Project resource management,
   - Project communications management,
   - Project risk management, and
   - Project quality management.

The Initial Project Plan provided by the Vendor serves as an input to project planning. Post-award the Vendor and BMS agree to jointly develop the Project Charter and amend the Initial Project Plan to integrate with the overarching BMS Project Management Plan.

The proposed plan should address how the Vendor intends to incorporate the following milestones into the project schedule:

1. Completion of Project and Administrative Plans,
2. Completion of System Design Activities,
3. Completion of System Construction and Testing Activities,
4. Completion of Implementation Readiness Activities, and
5. Commencement of Operations.

Deliverable

3.2.4.1 An Initial Project Plan within ten (10) calendar days of contract startup.

Approach

Deloitte understands the importance of a solid plan for managing a large and complex project. Our team as part of the proposal process has developed a preliminary plan from which we would refine prior to final contract signatures. This will help us prepare to hit the ground running and will be positioned to engage immediately during week one of the DW/DSS project so the Initial Project Plan can be reviewed and delivered within 10 days BMS. Project Start-up Activities, which are defined in *Section 7, 3.2.5,* includes n Project Kick-off meeting between Deloitte Key Staff and BMS. This venue will be used to discuss the Deloitte approach to Initial Project Plan and Deloitte will provide BMS examples of Initial Project Plans that include section on Staffing, Hosting, Project Plans, Training, Testing and Project Management processes. This gives BMS an opportunity to provide valuable input to back to Deloitte regarding expectations for this initial deliverable.

The Initial Project Plan will not only address how to incorporate the milestones listed above into the overall Project Schedule but also discuss the process for all Deliverable Submission to BMS. This would include Outline Creation with our state counterparts, pre-delivery review to address concerns, delivery process and re-submission process. Deloitte will provide an Initial Project Plan based on their understanding of the scope of work presented in this RFP within 10 calendar days of contract startup.

3.2.6 Requirements Definition and Analysis Activities

RFP reference: 3.2.1, Requirements Definition and Analysis Activities, Page 38

The Vendor should propose a methodology and approach for eliciting, validating and documenting DW/DSS requirements to ensure that BMS goals and objectives are met. The proposal should address how the DW/DSS:

- Contains validated:
    - finalized claims data that is reconciled by payment detail,
    - eligibility data,
    - provider data
    - reference data
    - encounter data, and
    - lab results data to include the expansion of clinical values as available
- Uses the MMIS as the source for any data available through that system;
- Makes available in one place reconciled MMIS claims data, eligibility data, provider data, reference data, encounter data, and lab result data that is easy for BMS staff to access for program and operations management and decision-making;
- Runs new management and administrative or other analytical reports as specified by the Bureau, that leverage the link between the lab result data available in this phase with claims and payment detail;
- Is designed and engineered to enable other State Agency, United States Territory or political subdivision to "piggy back" on the data warehouse contract, and to establish partitioned data warehouse environments and separate secure DSS access;
- Has the capability to add national trending data (e.g., US Census, CMS national statistics);
- Meets all component level business and technical requirements in this RFP;
- Is certifiable by CMS;
- Assists with budgeting and forecasting; and
- Is expandable to accept additional clinical values.

The proposed approach should also describe how requirements are managed and maintained in a Requirements Traceability Matrix in accordance with a version control and change management process approved by the Bureau.

Deliverables

3.2.6.1 A DW/DSS Requirements Definition Document (RDD) at the end of the Requirements Definition and Analysis Activities.

3.2.6.2 A DW/DSS Conceptual Data Model at the end of the Requirements Definition and Analysis Activities.

3.2.6.3 A DW/DSS Requirements Traceability Matrix at the end of the Requirements Definition and Analysis Activities.

Introduction

There are many challenges that are encountered while developing a data warehouse, but real intricacy with traditional data warehouses, particularly where business intelligence is concerned, is that users are unreasonably expected to know what they want before they have used the system. While West Virginia's vision for a new DW/DSS is well defined by BMS through the strategic goals and detailed requirements documented in the RFP, the business needs identified when the RFP was developed may have since changed or require additional details. As a result, using the traditional methodology of developing a custom DW/DSS no longer makes sense when changes to a State's business needs outpace the ability of technology to adapt.

Our Approach for Requirements Gathering

For many years, Deloitte has worked with Health and Human Service (HHS) agencies, Departments of Health, Medicaid Directors, State CIOs, and project stakeholders to develop detailed plans and process requirements for the implementation of various solutions; including MMIS, Medicaid data warehouses, integrated eligibility systems, child care, child support, and child welfare implementations. Our success on these projects stemmed from our following the same methodologies and processes throughout the project life cycle. The sections that follow outline the key activities associated with the preparation, development, and subsequent submission of the requirements definition document.

Review Existing Materials

BMS has provided us with a plethora of data to assist with the planning and identification of business and functional requirements. As part of our approach for gathering requirements, we will review all materials provided by BMS and capture the requirements identified in the RFP or those referenced in the procurement library documents. Based on our experience, we know proper preparation will be paramount to success. As part of our preparation efforts, we list a sample of the materials that will aid in our efforts:

- MITA Assessment and Advanced Planning Document (APD).
- CMS Web site for Updates to MITA Business Processes and Governor's Plan for Medicaid Reform.
- Medicaid Enterprise Certification Toolkit.

At the conclusion of our analysis, our team will record our findings and use this information as reference materials when facilitating the requirements gathering sessions. Our findings will be included on the agenda for the requirement sessions.

Prepare Materials for Sessions

Deloitte understands the value of time and for the requirement sessions to be productive and effective; participants need to have materials in advance in order prepare. As part of our efforts to prepare we will:

- Develop Schedule for Requirement Sessions

- Identify Scribes

- Develop Meeting Agendas

- Develop Draft Requirements

Facilitate Sessions

Deloitte demonstrates a process for ensuring that data is representative of all data elements used for claims processing and payment. Deloitte will spearhead the review and discussion of requirements for the DW/DSS. We will align the requirement sessions around MITA business area and BMS business processes. During these sessions our team will probe further details on the RFP requirements and their impact on the conceptual data model, logical data model, data access, and data delivery components. Moreover, we will include other topics such as:

- **MMIS as the Source System.** We will work with BMS and if necessary, the MMIS vendor to confirm the MMIS contains all the required data elements including finalized claims data, eligibility data, provider data, reference data, encounter data, and results data will be available as required. These segments of data are the foundation for DW/DSS BMS data analysis.

- **Reconciled MMIS Claims Data.** In addition, we will identify requirements that facilitate reconciliation of MMIS claims data to the DW\DSS.

- **Management and Administrative Reports.** As discussed in the RFP, the current reporting environment does not include DW/DSS components that meet the Bureau's current and anticipated data, analysis and reporting needs. The current state of BMS' information comes from multiple systems, each with its own set of reports. With the proposed data warehouse solution, BMS will have more control over the generation of source data for State and Federal reporting requirements. By defining the requirements for these reports, Deloitte will be able to trace these requirements throughout the testing process.

- **Flexibility.** Flexibility is not just to allow more data or more functionality, it also should allow for your solution to allow for expansion beyond currently defined boundaries. As part of the work sessions we will take into consideration future considerations such as the ability to support other State Agencies or political subdivisions.

- **Capability to Add National Trending Data.** During these sessions, we will call out requirements that could support new State and Federal initiatives such as:

  − Health Information Technology for Economic and Clinical Health Act (HITECH Act)

  − Electronic Health and/or Medical Records

  − Our proposed solution is built such that it is configurable and robust enough to integrate data from the aforementioned initiatives, and support the receipt of data from CMS or from the U.S Census Bureau.

- **Assists with Budgeting and Forecasting.** Every State, along with West Virginia is seeing the increase of demand for public services. Our proposed solution has robust reporting capabilities that can be leveraged by BMS users for budgeting and forecasting needs. This data is essential BMS to make informed decisions regarding future service levels and reimbursement rates.

- **Expandable to accept Additional Clinical Values.** Our proposed DW\DSS is flexible and configurable for new business and data requirements. The inclusion of additional clinical values, or the request to integrate with another State agency can be satisfied once the need is identified.

Following the end of each session, we will update the requirements that we reviewed, distribute meeting minutes and identify any follow-up sessions if necessary.

Requirements Validation

Following the completion of the requirements sessions, we will schedule final review sessions with BMS to reconfirm the requirements for Phase 1 of the DW\DSS. The review and validation of the requirements will enable BMS to review RDD in a more efficient manner because BMS will have already seen and reviewed the requirements identified in the deliverable.

Our Approach for Developing the Conceptual Data Model (CDM)

A well-constructed data model can provide the data layout for BMS's entire enterprise information infrastructure. It can help identify and map the location of data, entity by entity, into the various application systems where data may reside. As discussed above, we will review data model requirements during the requirement sessions with BMS. Using the gathered data requirements, we will create an initial data model by MITA subject area. This is accomplished by identifying enterprise data entities, keys, and high-level relationships. This model will be loaded and stored in ER/WIN our modeling tool and be used in future communications and documentation. The ER/WIN model will be supplemented by a narrative that describes the subject areas and key content and will be the basis for further Metadata documentation. Once the draft model is complete, we will review and validate the model, by subject area with BMS and State SMEs. We will then make updates based on feedback received from BMS.

Data Model Validation

The importance of validating the CDM model cannot be stressed enough. At each step in the modeling process, it is critical to validate the modeling results. More importantly, having the right resources to validate the data model is equally important. Data modeling is not an easy exercise; it involves leveraging a unique combination of analysis and design skills not common to all IT professionals. It is also a critically important piece for BMS's information architecture. Therefore, it is especially important for BMS to perform a thorough review of the CDM.

Developing the Requirements Traceability Matrix

Requirements Traceability is defined as the ability to describe and follow the life of a requirement; in both a forward direction (meaning each requirement is mapped to a test case) and backward direction (i.e. each test case satisfies at least one requirement). It documents the dependencies and logical links between individual requirements and other project artifacts, such as business or functional requirements, business process flows, design components, test scenarios and test cases, and the CMS checklists for certification. Traceability lies at the core of many of our deliverables within the ▮▮▮▮▮▮▮▮▮▮▮▮▮ and will be updated for the Technical Design Deliverable and during the testing phase. We will use traceability to confirm that all requirements have been addressed and properly tested. These elements include other requirements of various types, business rules, architecture and other design components, source code modules, test cases, and help files, whatever is applicable in the expected solution.

Ultimately, a requirements traceability tool will be used to verify the completeness of the solution (forward traceability), to make sure that all business requirements have been met successfully by the project solution, to verify adequacy of the solution (backward traceability), and to make sure that every unit of work done satisfies BMS's business requirement. Moreover, the RTM will be used as part of certification activities.

The Medicaid Enterprise Certification Toolkit provides a baseline of requirements that must be satisfied in order to be Federally certified. While Federal certification is for the State's MMIS system, the requirements under Program Integrity relate to Federal reporting requirements which will be met through the design, development and implementation of the DW\DSS for BMS. These requirements will be reviewed and included with the submission of the RDD and included with the requirements traceability matrix.

3.2.7 Detailed System Design Activities

RFP reference: 3.2.7, Detailed System Design Activities, Page 39

The Vendor should propose a methodology and approach for developing a detailed, technical design deliverable, based on the approved requirements and conceptual design.

Components of the detailed design should include:

1. Data model, metadata, data acquisition, data access and data delivery modules,
2. Database tables,
3. Programs,
4. ETL processes,
5. Data validation and reconciliation,
6. Reports (including release notes and sample formats for each report), and,
7. All other artifacts necessary to implement and operate the DW/DSS in the Vendor's facilities.

Deliverable

3.2.7.1 A Detailed Technical Design Document upon completion of detailed system design activities.

Design

The output of the Design Phase ultimately drives the acceptance of the end product since the Develop Phase merely reflects the result of Design. We therefore place a very high emphasis on the thoroughness, traceability to requirements, application of standards, performance considerations, scalability and flexibility when designing the configurations and customizations to fill the gaps identified in the Define Phase. We compare business requirements to the software capabilities, identifying gaps, and a plan to resolve them. The processes, templates and tools in the Deloitte Playbook are geared toward these objectives and are used in developing the design.

To confirm that the DW/DSS meets BMS' standards of quality, we leverage our vast design experience in the data warehouse and business intelligence domain. During Design, we work collaboratively with BMS, end users and other partners in Joint Application Design (JAD) sessions to assess specific reporting and analytic views, formats required, security implications and report delivery mechanisms.

Step	Deloitte Follows Proven Steps to Implement DW/DSS
Step 1 **Prepare for JAD sessions**	1. Develop JAD schedule 2. Review proposed JAD schedule with the BMS 3. Schedule JAD sessions (both core functional and technical meetings) 4. Schedule additional meetings with specific user groups 5. Prepare screenshots

Step	Deloitte Follows Proven Steps to Implement DW/DSS
Step 2 **Conduct JAD sessions**	1. Hold JAD sessions to review information requirements 2. Formulate process flows 3. Generate meeting minutes: − Document discussion topics − Document specifications that are decided upon − Document action items
Step 3 **Modify/Create Functional Design Document**	1. Incorporate meeting minutes and notes 2. Develop functional design document
Step 4 **Baseline functional design document**	1. Conduct walkthrough to review the Functional Design with the BMS 2. Document any deficiencies in a Comments Log 3. Address deficiencies 4. Baseline the accepted Functional Design 5. Establish/update requirements traceability to the requirements (use cases, software requirements specifications) 6. Reconcile the project work plan with the requirements to confirm that the work products and activities required addressing the system requirements are included and planned for 7. Post Functional Design Document in eRoom
Step 5 **Update traceability**	1. Assess forward requirements traceability. Review the artifacts at each level of the traceability matrix to confirm they contain links to the appropriate downstream artifacts 2. Update traceability with the identified missing links (that is, situations where the downstream work product(s) which appropriately address the requirements exist, but the link has not been established) 3. Establish corrective actions where requirements or corresponding work products are not addressed in a downstream work product (these types of issues represent missing requirements) 4. Assess backwards requirements traceability. Review the artifacts at each level of the traceability matrix to confirm they contain appropriate backward links 5. Update the missing links in the situations where the upstream work products exist but a link has not been established 6. Establish corrective actions where a work product exists without tracing back to a requirement. Submit a project change request where applicable

Deloitte agrees to incorporate all applicable current and future coding standards and legislated or program necessary data requirements to confirm that the DW/DSS is current in its ability to accept and appropriately employ new standards and requirements as they occur, including, but not limited to, ICD-10, HIPAA v5010, the Patient Protection and Access to Care Act (PPACA) and the Health Information Technology for Economic and Clinical Health Act (HITECH).

The purpose of the Design Phase is to develop the build specifications and Requirements Validation and Elaboration tasks completed during the Define Phase. The required design changes are described in formal design documentation including a High Level Design Document (Conceptual Design) and the Detailed Design Document which serves as the blueprint for development. Activities may include defining the software architecture views, developing a proof-of-concept, developing the application design elements, and refining the architecture and design elements. Test planning occurs in conjunction with design to keep the design scope and testing scope in sync. This involves establishing an overall test strategy for the project.

The Design Phase in the ▮▮▮▮▮▮▮▮ defines processes (Data Acquisition, ETL, Data Validation, Data Access and Data Delivery), data (Source, Landing, Staging, Data Warehouse, Security, and Infrastructure) and Reporting (Standard, Ad hoc, Multi-Dimensional, what-if). During this phase, the Solution Manager works with the Technical Leads to document:

Process	Output
Extract Frequency	Daily, Weekly, Monthly, Quarterly
Source Data Identification	Table Name, Field Names, Data Types, Length, Nullable
Extract Process Flow	Load Logic, Match Logic, Update Logic, Insert Logic
Landing Area Identification	Table Name, Field Names, Data Types, Length, Nullable
Transformation/Mappings	Transformation Logic, Load Routines
Entity Models	Logical Information Requirements
Data Models	Conceptual, Logical, Physical
Database Tables	Table Name, Field Names, Data Types, Length, Nullable, Primary Key
Metadata	Technical, Versioning, Meta Models, Security
Data Validation	Correctness, Consistency, Completeness, Format, Duplication
Data Security	Data Leakage, Remote Access, Data Encryption
Data Access	Authentication, Authorization, PHR
Data Delivery	Standard Report, Dashboard, Analytical Cube, What-if
Cognos Framework	Dimension Tables, Fact Tables, Calculated Measures
Reporting Specifications	Dimension, Measure, Framework Source, Column Name, Sort Order

3.2.8 System Construction and Testing Activities

RFP reference: 3.2.8, System Construction and Testing Activities, Page 39

The Vendor should propose a methodology and approach for constructing and testing the DW/DSS in accordance with the test plan approved as part of the Project Plan that includes:

1. Constructing the system,
2. A testing system that meets the detailed requirements presented in Appendix 2 – Detailed Business and Technical Requirements, Section B.7,
3. Developing test cases and scripts,
4. Developing and maintaining a dedicated test environment, and
5. Developing a Test Summary.

Vendor should describe in detail in their proposal their testing approach, which should include:

- Unit Testing,
- System Integration Testing,
- Regression Testing,
- Volume Testing,
- Operations Readiness Testing,
- Validation Testing, and
- User Acceptance Testing (UAT).

Vendor's proposed approach should describe the methodology to be used for measuring the successful execution of all testing, including the approach to retesting in situations where initial tests fail, and how the system is tested and monitored through the equivalent of at least three (3) consecutive months of successful load, validation and reconciliation cycles. Vendor's approach should include how the results are jointly reviewed between Vendor and BMS, how the criticality of defects is ranked, and how the Vendor plans to support BMS during UAT. Vendor's proposed approach should also describe the Test Summary that is provided to BMS prior to UAT. Components of the Test Summary should include:

1. Confirmation that all earlier testing has been performed in accordance with the approved Test Plan,
2. The outcome of those tests,
3. Documentation that the test environment has been loaded with test data,
4. Confirmation that all defects discovered in previous testing and ranked as critical are resolved to the best of the Vendor's knowledge,
5. The methodology for documenting and ranking defects and deficiencies discovered during UAT in relationship to implementation readiness, and

6.   The process for updating and finalizing the Test Summary prior to implementation.

Deliverables

3.2.8.1 A test system and environment ready to be used for testing prior to commencement of system construction.

3.2.8.2 A comprehensive Test Plan prior to commencement of testing.

3.2.8.3 Test scripts and cases prior to commencement of testing.

3.2.8.4 An initial Test Summary prior to commencement of UAT.

3.2.8.5 A Final Test Summary prior to commencement of implementation readiness activities.

Develop Phase

The purpose of the Develop Phase is to customize our solution to adhere to the approved design and perform code review and unit testing. The activities for this stage include developing unit test cases, making the configuration and customization changes, code review, and unit testing the code. This phase also involves defining the test plan and appropriate test cases for each required Test Phase. As opposed to being done in the Design Phase, the Develop Phase includes the execution schedule, which is produced after a final design has been accepted. Prior to proceeding to the Test Phase, Develop Phase exit criteria must be met.

Deloitte provides BMS a way to meet overarching business goals including the configuration of the DW/DSS. Our methodology takes into consideration the key success factors and lessons learned from other large data warehouse efforts. During testing preparations Deloitte will work with BMS to fully describe our testing process and reinforce our commitment to meet three consecutive months of successful load, validation and reconciliation cycles. During this preparation we will collaborate on the appropriate criteria for defect ranking and identify critical points where BMS can review and approve exit criteria that have been met.

Test Phase

The main objective of this phase is to test that the solution has been correctly developed against the requirements and design defined during the previous two phases. The execution of the approved Test Plan needs to be repeated for each Test Phase identified in the test approach, including:

- Unit Test

- System Test

- Integration Test

- Performance Test

- Regression Test

- Volume Test

- Validation Test

- User Acceptance Test

Prior to proceeding to the Deploy Phase, Test Phase exit criteria, such as signoff of the User Acceptance Test tasks, must be met. The table below provides an overview of the Test steps.

Step	Procedures
Test Planning	
Step 1 **Define Test Approach**	• Determine scope for overall testing − Review the scope of business processes (system and manual) being introduced new as well as those that are changed as part of the project − Review the scope of impacted, either changed or impacted by changes, applications and interfaces − Review the scope of performance and technical requirements for the applications being implemented or modified − Confirm test scope with Project Manager − Document the scope in the appropriate section of the Test Approach • Establish Test Phases − Based on the scope of testing, determine the type of testing (System Test, Integration Test, Performance Test, User Acceptance Test, and Deployment Test) that need to be executed to support complete verification of the business and technical requirements − Document the required Test Phases, their scope, objectives, responsible group, cycles executed during the phase and environment in the Test Approach − Update the appropriate section of the Test Approach with the requirements, application, and interfaces traced to each Test Phase • Define Test Phase entry and exit criteria − Establish entry and exit criteria for each planned Test Phase − Document Test Phase entry and exit criteria in the appropriate section of the Test Approach − Develop test schedule − Conduct initial stakeholder meetings to identify key milestone dates and allocated test duration in the schedule − Consider the size and complexity of the enhancement or fix by gathering technical documentation available as well as Requirements Specification and Design documents. Analyze, identify, and gather key metrics on the system being implemented − Develop the test schedule document by using the information gathered in previous steps. Include information such as milestones for preparation, execution, and transition of each test − Estimate the number of test cases, number of test cycles, and the duration required per Test Phase − Update the appropriate section of the Test Approach with the test schedule • Define the test environment − Review identified Test Phases and their timeline − For each Test Phase review the type of environment that is required (integrated, stand-alone, dedicated, shared, production like) − Determine if any environments can be shared − Outline the number of required test environments in Test Approach − Review forecasted environments with Infrastructure Manager • Complete Test Approach • Conduct the appropriate level of review and approval of the Test Approach, as defined by the project's Quality Management Plan • Baseline Test Approach − Reconcile the testing schedule and test staffing in the project work plan
Step 2 **Create Test Plan**	(Steps 2-3 will be repeated until Test Execution Exit Criteria have been met) • Document detail test scope for each Test Phase − Review scope of the application(s) and interfaces that will be tested − Review logical boundaries of what will be tested in this phase, such as major business processes, types of data, data sources, and major functionalities − Examine requirements that will be tested − Review any change requests or defects that will be included as a part of this release − Document test scope in the appropriate section of the Test Plan • Review Test Execution Entry and Exit Criteria for each Test Phase − Review established Test Execution Entry and Exit Criteria from the Test Approach document

Step	Procedures
	− Document entry and exit criteria and target completion dates in the appropriate sections of the Test Plan
	• Prepare work plan and test cycle schedule for each Test Phase
	− Review the pre-established preparation, execution, and transition time frame established for Test Phase in the Test Approach document
	− Based on scope and the project work plan, decide the number of cycles that will be required
	− Establish exit criteria for each cycle that will incrementally lead to meeting the exit criteria of the Test Phase
	− Prepare work plan with detailed planning tasks, test cycles, and key milestones
	− Document milestones, cycle schedule, and cycle success criteria in the appropriate sections of the Test Plan
	• Define test environment for each Test Phase
	− Review and refine test environment requirements for software, hardware, data, and support
	− Assess risks, cost, and timeline to build environment
	− Define requirements for basic simulation tools or stubs
	− Develop environment build plan
	− Document test environment specification in the appropriate section of the Test Plan for each Test Phase
	• Complete Test Plan
	• Conduct the appropriate level of review and approval of the Test Plan
	• Baseline Test Plan
	• Reconcile the testing schedule and test staffing in the project work plan
Step 3 **Create Test Cases**	• Conduct overview sessions
	− Review requirements, design, test approach, and test plan with testers
	− The intent of the workshop is to drive a common understanding of requirements, design, and test approach
	• Develop or update test cases for various test phases
	• Identify steps in the test case
	− Write detailed test case steps and expected results
	− Update the test case inventory for the test case ID, description, and Test Phase for which the test cases are developed
	− Update the test definition report and communicate status weekly to Test Manager
	• Prepare test data for the Test Phases
	− Re-use existing test data, if available
	− Establish test data naming convention
	− Create test data
	− Remove Personally Identifiable Information (or obtain the necessary consent to use it)
	• Conduct the appropriate level of review and approval of the test cases and test data
	• Baseline test case and test data
	• Update traceability matrix
	− Map the requirements and design to various Test Phases
Test Execution	
Step 4 **Confirm Test Readiness using Execution Entry Checklist**	• Review criteria and determine whether each criterion has been met • Develop action plan for criteria that has not been met • Assess whether testing can proceed
Step 5 **Build and Validate Test Environment**	• Deploy code and configure environment • Complete a shake out of the environment and codes to confirm that key processes are functioning and ready for test

Step	Procedures
Step 6 **Execute Test Cases**	• Review test case objective • Review test case steps and execution timeline • Confirm that login information and data are correct • Review any open defects impacting test case or required retest • Execute test cases
Step 7 **Document results**	• Document Pass or Fail for each test step and test case • Review each recorded result against required requirements • Identify errors and unexpected results • Determine if unexpected result is a defect • Execute steps to confirm defect and assess defect (reproduce) • Follow the Defect Management process area to enter defects into defect log or tool, and track them to resolution
Step 8 **Repeat steps 6-7 until** the **test cases are executed for the cycle**	• Iteratively repeat deploying changes into the test environment, shaking out the test environment, execute test cases, documenting results, analyzing test results, logging defects, and providing data and analysis for weekly test report
Step 9 **Complete Test Results Report**	• Confirm that the test cases have been executed at least once within the defined cycle timeline • Identify issues and risks impacting test execution during the cycle • Compare cycle results against cycle exit criteria • Document environment availably during cycle, including the planned and unplanned outages • Provide Test Phase with On Target (green), At Risk (yellow), or Off Target (red) rating • Compile above results in End of Cycle Test Report • Publish End of Cycle Report to the stakeholders and host review meeting
Step 10 **Verify Against Exit Criteria**	• Review cycle test results against cycle exit criteria and determine whether they have been met • Develop action plan for criteria that have not been met
Step 11 **Repeat steps 5-10 until Test Execution Exit Criteria have been met**	• Iteratively repeat deploying changes into the test environment, shaking out test environment, execute test cases, documenting results, analyzing test results, logging defects, providing data and analysis for weekly test report, completing the cycle report, and reviewing cycle exit criteria

A more detailed description of our testing approach and the associated tasks can be found in *Section 11 Technology Solution*.

3.2.9 Training Program

The Vendor should propose a comprehensive training program, to include needs assessment, training plan and training materials, to be carried out prior to system implementation and post implementation training for new employees and refresher training for existing users. Up to 30 data warehouse users, at various skill levels and with varying business requirements, need to understand and use the DW/DSS. In their proposal the Vendor should describe their approach and methodology, as well as the documentation, materials and media, including all user and instructor manuals, to be employed. The program proposed could include:

- Classroom training,
- Self-paced computer-based training (CBT),
- Self-paced Web-based training (WBT),
- Manuals(electronic and/or hard copy),
- Train-the-Trainer,
- Proficiency testing, and
- Quality control reviews.

Training Program

The implementation of a new DW/DSS is about much more than the solution itself. A new system is only as good as people's readiness to use the system proficiently. Training accomplishes more than teaching the right skills needed to navigate the system. A successful training program gives end users confidence in the system and in their own ability to interpret data and navigate their way through the normal learning curve associated with any significant change. With our deep implementation experience, we understand that training extends far beyond what the person sees and does in the classroom. Training is also about providing sufficient problem-solving skills and providing the right support tools.
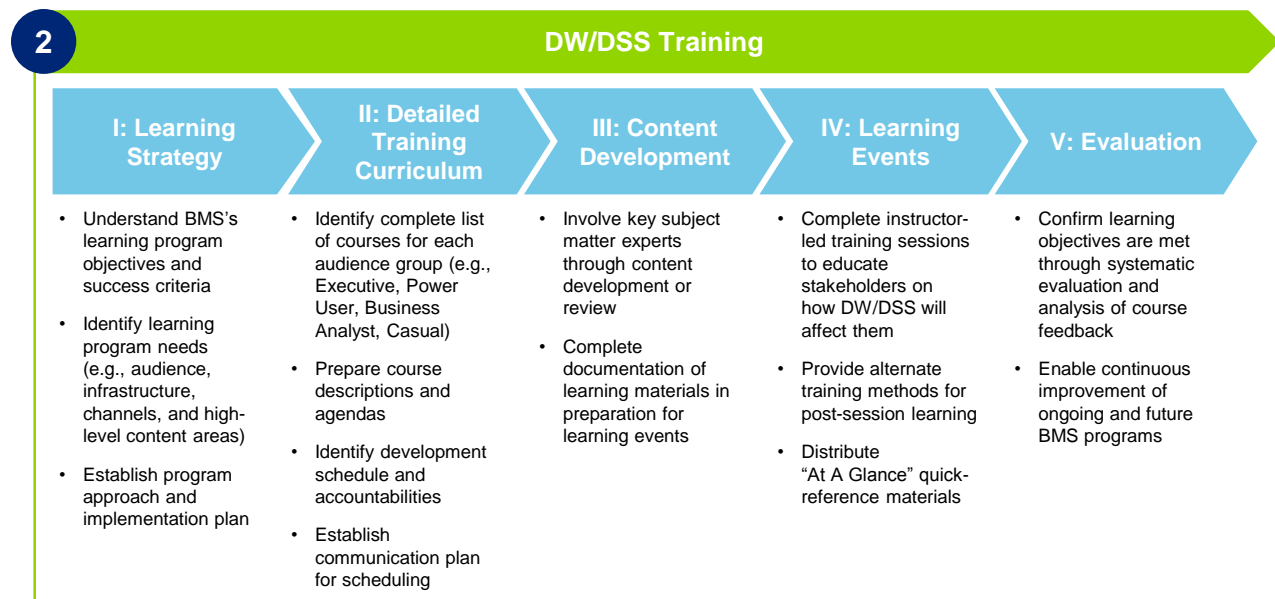
Deloitte's approach to end user training focuses on providing project team members and end-users with the knowledge, skills, and capabilities to perform effectively in their job. We leverage the principles of adult learning theory, providing:

- A blended delivery solution driven by understanding the needs and conditions of different audiences (e.g., self-paced, instructor-led, webinar/distance learning, or conference room sessions).
- A role-based curriculum so training content is tailored to job roles or business needs and resources receive specific instruction related to their day to day activities and technical skills.
- A training schedule driven by a just-in-time philosophy, i.e., end users receive training as close to go-live as possible so that it is delivered in a "just in time" approach.
- Simulated or hands-on learning by doing, in realistic business contexts to drive long-term adoption
- Measurement to drive accountability.

Deloitte will develop and deliver a Training Plan within ten (10) calendar days of contract execution.

Our Approach to Training

Deloitte will execute the training program in accordance with the Training Plan. Our approach combines the leading principles in instructional design with our practical experiences and lessons learned of "what works" in the development and delivery of real-life training programs. We recognize that every individual is unique and that everyone has his or her preferred style for learning. We will integrate our experience and techniques in our five-step training approach for BMS. The following figure highlights the key objectives for each phase of our learning approach.

2	**DW/DSS Training**				
I: Learning Strategy	**II: Detailed Training Curriculum**	**III: Content Development**	**IV: Learning Events**	**V: Evaluation**

I: Learning Strategy
- Understand BMS's learning program objectives and success criteria
- Identify learning program needs (e.g., audience, infrastructure, channels, and high-level content areas)
- Establish program approach and implementation plan

II: Detailed Training Curriculum
- Identify complete list of courses for each audience group (e.g., Executive, Power User, Business Analyst, Casual)
- Prepare course descriptions and agendas
- Identify development schedule and accountabilities
- Establish communication plan for scheduling

III: Content Development
- Involve key subject matter experts through content development or review
- Complete documentation of learning materials in preparation for learning events

IV: Learning Events
- Complete instructor-led training sessions to educate stakeholders on how DW/DSS will affect them
- Provide alternate training methods for post-session learning
- Distribute "At A Glance" quick-reference materials

V: Evaluation
- Confirm learning objectives are met through systematic evaluation and analysis of course feedback
- Enable continuous improvement of ongoing and future BMS programs

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Figure 7-2. Our DW/DSS Five-step Training Approach.
Our five-step approach to training integrates our practical experience and instructional design techniques

Before we kick off the activities associated with our training approach, we will conduct a DW/DSS needs assessment. The objective of the needs assessment is to survey prospective DW/DSS users in order to gauge their knowledge and understanding of a DW/DSS. We would include questions such as:

- What is your current role and how long have you been in your current position?

- What are your expectations for training? What would your "take-away" be in order to consider training a success?

- How would you rate your technical expertise? Do you understand Cartesian joins and Cartesian products?

- Have you used data modeling or data analytical tools in the past? If so, which ones?

The results from the needs assessment survey will be summarized and used as an input for the development of the training strategy. Understanding the needs of the training audience is critical in order to develop a training strategy that is relevant to the needs of the user community.

We will validate training needs by stakeholder group to align training with BMS's business needs and objectives. We also will identify the learning approach that best suits BMS stakeholders. Moreover, as identified in the RFP, we can also tailor our training strategy by MITA business area. For example, we could train users who are responsible for reviewing claims and clinical data on how to leverage the DW/DSS for advanced data analysis and how to use the output to drive and improve healthcare decisions.

For this initiative, our team can provide instructor–led training sessions for the BMS team. However, we understand people's time is valuable and resources are not always available to attend training sessions in person. Therefore, we will work with BMS to identify alternative delivery methods such as video conferencing or e-learning so that BMS can have all available stakeholders participate in a training session.

Learning Approach Summary

Mode	Benefits	Best Uses
Instructor-Led Training	• Content is adaptable based on audience's current understanding of the subject area • Offers expert-led instruction • Allows for rich assessment and feedback opportunities • Provides testing ability • Allows for personalized attention • Pace can be adjusted based on audience	• Exposes participants to a common corporate culture • Allows learners to ask questions and receive coaching and immediate feedback • Teaches complex content • Provides for group work and collaboration • Teaches content that may change frequently • Allows for hands-on simulations and interactivity
E-Learning	• Reduces travel associated with training at a central location • Allows for individualized, self-paced instruction • Delivers consistent messages across audience groups • Provides testing ability	• Accommodates various levels of experience • Permits learners to participate at their convenience • Provides training quickly to a large number of geographically dispersed learners • Teaches content that is consistent across large audiences • Teaches complex or specialized tasks for specific audience groups
Video Conferencing	• Reduces the travel associated with training at a central location • Delivers a consistent message to all audience groups • Quick to produce	• Quickly communicates information to a large, geographically dispersed audience • Presents basic information when time is limited • Good for refresher workshops when students have conducted pre-work and are highly engaged
On Demand Documentation	• Delivers a consistent message to all audience groups • Supports Adult Learning preferences for immediate access to information • Can be linked to other relevant on-demand documentation	• Comprehensive User Manual • Classroom training materials • Supplemental Job-Aids and other documentation

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Figure 7-3. Learning Approach Summary.

Opportunities for training should continue post go-live to provide additional training to users once they have begun to use DW/DSS on a daily basis. In addition, mechanisms for post go-live knowledge sharing among users should be established (e.g., huddles, department meetings, lessons learned documentation) to enable users to learn from each other and share any system or workflow issues. Communication should continue post go-live between BMS users and the project team in order to lead to more efficient use of the system.

3.2.10 Implementation Readiness Activities

RFP reference: 3.2.10, Implementation Readiness Activities, Page 41

The Vendor should propose an approach to ensure that the DW/DSS and its users are ready for implementation and for acquiring BMS approval to move the DW/DSS into production and to commence operations. In their approach the Vendor should propose the delivery of DW/DSS User Documentation and As-Delivered System Documentation, as well as an Implementation Readiness Report documenting readiness for operations, and should describe the content of those deliverables.

Deliverables

3.2.10.1 DW/DSS User Documentation to BMS prior to requesting approval to commence operations.

3.2.10.2 As-Delivered System Documentation prior to requesting approval to commence operations.

3.2.10.3 An Implementation Readiness Report at the time that it requests from BMS approval to commence operations.

Implementation Plan

The Implementation Plan governs the support and activities delivered by Deloitte. Our approach to implementation planning is collaborative and iterative, allowing Deloitte to work closely with BMS while incorporating flexibility to account for any project issues. While we will create the detailed Implementation Plan to closely meet BMS's requirements. There are several focus areas which are critical components of the Implementation Plan:

- Our methodology for the implementation

- A detailed implementation schedule

- Roles and responsibilities for BMS and Deloitte

- Readiness Report

The following section provide detail on each of these key focus areas.

Methodology

The implementation methodology defines the approach and mechanisms for coordination of implementation tasks. A strong coordinated effort is necessary to integrate the multiple "moving parts" of the DW/DSS project (infrastructure, people, process, operations, and application) into one cohesive and integrated implementation plan.

Our methodology relies on upfront assessment of current business and technical readiness for implementation. In addition, our methodology enables the definition of the critical guidelines, success factors and constraints that are the foundation of the Implementation Plan and serve to guide all team members. Deloitte will finalize the core tenets of the implementation plan based on feedback obtained during team meetings, as well as in individual meetings with each BMS team lead and Deloitte lead.

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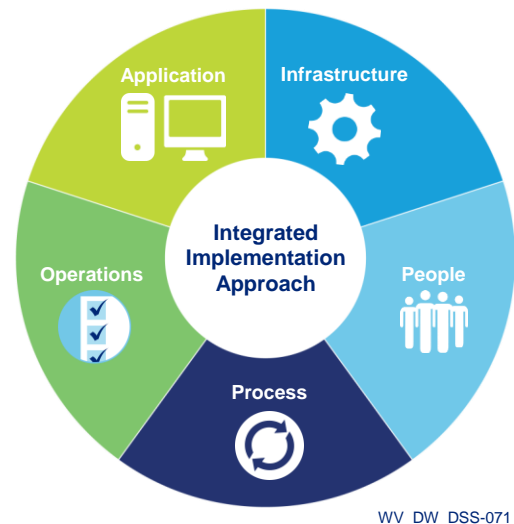
Figure 7-4. Integrated Implementation Approach.
The multiple moving parts of the project are brought together with strong and coordinated implementation planning.

Schedule

Deloitte plans to conduct meetings with the BMS Project Manager and team leads to validate the projected implementation schedule and to identify what key tasks need to be accomplished to meet the project's implementation needs. Deloitte will document each of these "critical path" activities into a comprehensive implementation schedule.

Roles and Responsibilities

Clear roles and responsibilities must be defined to execute a successful implementation. While each team member will complete their own set of targeted activities, their responsibility lies with the overall implementation effort.

The implementation lead will work with BMS project management to approve and finalize the set of roles and responsibilities for the implementation. As an example, the following table highlights some sample implementation activities and categorizes the roles involved:

- **Leader (L).** Leads and drives completion of the activity

- **Advisor (A).** Provides input or feedback on the activity

- **Reviewer/Approver (R).** Reviews and approves the output of the activity

- **Participant (P).** Under the direction of the Leader, completes specific tasks for activity progress

Key Activities	Deloitte Team	Deloitte Project Manager	BMS Project Manager	BMS Staff Members
Initiate Implementation Planning	L	R	A, P	A, P
Develop the Implementation Plan	L	R	R	A,R
Document Integration of Implementation Functions	L	R	R	R
Assess Implementation Readiness	L	R	A, R	P
Provide Onsite Post-Implementation Support	L	R	P	P
Facilitate Post-Implementation Issue Tracking and Reporting	L	R	P	P
Confirm Implementation Complete	L	R	A, R	A/R

The table that follows details sample responsibilities for the implementation lead role.

Implementation Staff	
Role	**Responsibilities**
Implementation Lead	- Provide overall guidance to the implementation team by coordinating BMS staff resources and schedules - Serve as the primary representative for implementation to the PMO and BMS and Deloitte Project Manager - Facilitate weekly implementation team meetings - Develop implementation status reports and identify issues or risks to the Implementation - Review implementation work performed against requirements and make recommendations for changes or updates - Review and recommend deliverable acceptance for the implementation plan, as well interim work products

Readiness Report

Deloitte will collaborate closely with BMS to define critical operational elements at the outset of the project and build these items into a comprehensive Readiness Report. The goal of creating a readiness report is to determine interim and final readiness for the go-live. Deloitte will work with BMS to define a subset of readiness criteria that will be consolidated into a Go/No Go list to be used during cutover activities just prior to go-live. To create these readiness criteria, BMS and Deloitte teams will work together to identify the impacts of the new system on staff and operations. Once these impacts have been identified, recommendations on how to address each impact will be documented. Deloitte's experience with other State Government system implementations allows us to use pre-existing tools and templates for identifying and tracking these critical impacts, and compiling these recommendations into a comprehensive Readiness Report.

The Readiness Report will span many functions, including but not limited Web Portal, Metadata, Security roles, and Communication and Documentation. The readiness report will be measurable, actionable, and provide clear deadlines for completion. A sample Readiness Report is displayed below.

Criteria	Criteria Met?					Time frame	Owner	Due Date
	Yes	No			N/A			
		On Track	At Risk	Off Track				
I. Main Title (Customize for Client)								
Activity 1	✓					15 days	Name	Oct 15, 2012
Activity 2		✓				60 days	Name	Sept. 1, 2012
Activity 3			✓			60 days	Name	Sept. 1, 2012

Deloitte will place focused efforts on the Technical Infrastructure to verify compatibility between all the components being implemented. Our team will provide detailed plans containing requirements for hardware, software, and help desk equipment to support the new system. Additionally, Deloitte will work with BMS staff to manage the deployment of new hardware and software prior to rollout. Proper coordination will occur through regularly scheduled meetings and conference calls prior to implementation.

The purpose of creating and tracking to the readiness report is to give BMS stakeholders clear guidelines and goals to work toward. The readiness report will serve as a source of objective feedback on progress. As part of the overall Implementation Plan, each criterion will be associated with an owner with clear milestones that identify the activities required for completion. The Readiness Report will be used as a baseline to assess any major risk areas to the project. Deloitte will provide a system that meets all CMS certification requirements.

Produce Documentation

Effective system documentation is critical for software development and maintenance. It enables important system knowledge to be codified into documentation that provides consistency of knowledge transfer through staff transitions. We will document our solution through the incremental completion of project milestones and deliverables which will accurately convey information about our DW/DSS system, thereby reducing maintenance and support efforts. We are committed to collaboratively working with BMS to implement a solution that provides a foundation for the initial training for technical staff as well as producing operational reference texts.

DW/DSS User Documentation

The Deloitte team understands the importance of relevant User Documentation for the implementation of the DW/DSS. Thorough and comprehensive user documentation is a critical piece for users to understand the system functionality. We will provide documentation that will be specific to the type of the user. Users will be able to understand, navigate, and successfully use the application depending on their profile. We provide different documentation for front end access to authorized BMS users. This will be in the form of online help guides or through training materials. We provide the following types of User Documentation:

- Online User Procedures and Help

- Online Policy Manual

- Access and Navigation Guide

Deloitte follows the following steps as part of the User Documentation Development Process:

- Team reviews requirements, design, and proposed screenshots and process flows

- Team identifies new training materials and updates to existing training materials

- Usage of the training environment to create user documentation materials

- The User Document will be provided to BMS for review on an incremental basis

- After BMS approves the documentation, it is made available to application users

As-Is Delivered System Documentation

Providing our clients with broad, organized, and useful system documentation is a cornerstone of our approach to system development and knowledge transfer. Many times system integrators fall into the trap of waiting until the end to develop the system documentation which causes significant cost overruns and quality issues; Deloitte's approach is to keep the documentation updated at each step throughout the project.

Our team will develop documentation accounting the technical aspects of the system including system operations documentation and application documents. These documents will be used to quickly and accurately communicate system information to BMS stakeholders. The purpose of system documentation is not simply to have complete records regarding the DW/DSS; the ultimate purpose is to help confirm that individuals other than those who developed the system have the information they need to effectively use and maintain it. To help confirm that the documentation supports BMS' desire to be self-sufficient in maintaining the system when the time is deemed necessary, we engage BMS IT staff through the creation and maintenance of system documentation.

3.2.11 Operations

RFP reference: 3.2.11, Operations, Page 41

The Vendor should propose operating the DW/DSS for the period commencing with the completion of DDI and concluding at the end of the contract period or any renewal periods executed.

The Vendor should describe the proposed approach to maintaining adequate staff and infrastructure to manage and support ongoing operations. The proposed approach should include how the Vendor exercises operational controls and conducts monitoring and reporting activities in accordance with the Operations Management Manual approved early in the contract period (see Section 3.2.20). The Vendor should describe how they propose to:

- Operate the DW/DSS with minimal disruption,

- Operate the DW/DSS within the service levels defined in this RFP,

- Maintain a facility that is conducive to a productive environment,

- Be proactive with regard to the performance of the DW/DSS,

- Employ a competent staff that interacts professionally and cooperatively with BMS staff,

- Analyze operations reports and respond to any issues, and

- Provide a dedicated .50 FTE Training/Data Analyst onsite at BMS to supply ongoing training to BMS staff and data analysis.

During Phase Two the DW/DSS should undergo certification by CMS concurrent with certification of WV's replacement MMIS. The Vendor should describe the support that they plan to provide BMS during the CMS certification process and how they plan to provide a system that meets all CMS certification requirements.

> **RFP reference: 3.2.11, Operations, Page 41**
>
> This includes creating and reviewing documents, attending meetings, assisting in the development of presentations, answering questions, facilitating system review and access and other activities needed to support the certification process. The Vendor should propose a Turnover Plan to be made available to BMS within 30 days of being requested to do so. The Vendor should describe how they plan to prepare for transitioning systems and operational responsibilities beginning four (4) months prior to the end of the operations period. Vendor should clearly explain how they plan to:
>
> - Work cooperatively with the fiscal agent, other vendors and BMS to create and carry out a plan that is designed to ensure a smooth and orderly transition to a successor,
> - Train the successor, and
> - Continue providing full operational support services to BMS during the transition period.
>
> **Deliverable**
>
> 3.2.11.1 A Turnover Plan within thirty (30) days of being asked to do so.

Deloitte believes that an effective operations support model begins with the original planning, design, and overall strategy for the project. It is imperative to assess internal and external needs and capabilities, prepare and plan for ongoing operations, and define clear business objectives.

Proper attention and effort to these activities can significantly increase the chances for delivering on goals tied to risk, predictability, and cost. Deloitte is uniquely positioned to help you in your efforts to achieve both of these goals.

Deloitte will request written authorization from BMS to commence operations. Operations will commence upon signatory approval from the Bureau. Deloitte will receive approval from BMS to begin operations.

Base Level of Support

The core of the base level of support is performing corrective, adaptive, and preventive maintenance across each of the component parts of DW/DSS, including source and target tables, Extraction Transform Load (ETL) process, and reports in addition to implementing the enhancements from needed initiatives and changes in policy. The scope of services defined for DW/DSS maintenance and operations not only includes work requests, but also includes activities such as performance monitoring and tuning, Ad hoc report requests, ETL changes, and the addition, deletion, or modification of data elements incorporated within the source tables or within system reference tables. As your maintenance and operations vendor we perform these activities following the system development life cycle phases, as applicable, from detailed system design through post deployment monitoring and operations. Our team is committed to enhance and maintain the DW/DSS solution during this phase. A key to maintenance is performing corrective, adaptive and preventive maintenance across each of the component parts of the DW/DSS solution. The overall scope of ongoing operations includes performance monitoring and tuning, release management and DW/DSS maintenance. Maintenance includes ETL changes, and the addition, deletion, or modification of data elements in target tables to support changes in source table, modifications of report layout and content, and Ad hoc report requests.

Operational Controls

For a project of this nature we establish operational controls including planning, organization, staffing and directing of work to measure outcomes, improve quality and to achieve the stated goals of the organization. We establish controls by setting standards, taking measurements and evaluating actual performance. Communication processes, internal and external to the project organization, are the means for facilitating these control mechanisms and the resulting corrective actions.

Continuous communication between involved staff members is required for the ongoing operations of large enterprise systems such as DW/DSS. As part of the transition into ongoing operations, the formal communication plan is reviewed and augmented as necessary. As an example, status reports are modified to include new performance metrics and new reports are introduced to manage staff and operational issues. The following table summarizes the operational controls that we suggest establishing for ongoing operations.

Operational Control Process	Deloitte Approach for Ongoing Support	Deliverables
Plan	• Establish enhancement and defect priorities • Identify Ad hoc report requests • Identify resource needs • Determine release schedules • Maintain risk plans	• Resource and Staffing Plan • Configuration Management Plan • Project Plan • Risk Plan
Organize	• Define logical bundles of defects and enhancements • Allocate work to teams • Define roles and responsibilities	• Updated Project Plan
Staff	• Acquire resources • Set goals and provide regular performance feedback • Identify maintenance release lead(s) for accountability • Identify client and Deloitte resources	• Maintenance Release Schedule • Updated Project Plan
Direct	• Conduct weekly team meetings • Review status of tasks and activities • Take corrective action as required	• Team Agenda • Meeting Minutes • Updated Project Plan
Communicate	• Attend BMS meetings • Engage program offices through governance meetings • Facilitate user/stakeholder communication	• Meeting Minutes • Communications Plan
Evaluate	• Review actual vs. estimated level of effort • Evaluate and adjust resource plan • Assess and refine SLAs	• Updated Resource and Staffing Plan • Update SLA

The monitoring and reporting activities above are conducted in accordance with our proposed Operations Management Manual. Deloitte proposes to create and deliver within 45 calendar days of contract start-up an Operations Management Manual. The manual will be structured in three major sections: Operations Plans; Operations Management Plan; and, Operations Controls, Monitoring and Reporting Procedures. For additional details, please refer to *Section 3.2.20.* The table that follows outlines our approach to meeting your requirements for the ongoing operations of the DW/DSS:

Expectations	How Our Approach Meets Your Requirements
Operate the DW/DSS with minimal disruption	The combination of a sound system architecture, processes, tools and experienced team members significantly lowers the possibility of service disruptions. The operations centers and designed software and hardware components provide full coverage of all aspects of the system. Any potential disruptions or conditions that require staff attention can be quickly identified and tracked for remedial action. In this way, DW/DSS can continue to meet BMS needs.
Operate the DW/DSS within the service levels **defined in this RFP**	Deloitte will regularly report on our performance against the service level agreements. The report will document the performance achieved during the reporting period and the degree to which Deloitte met, exceed or failed to achieve the service levels. In cases where we failed to meet the service levels, will quickly address the issue or provide a corrective action plan to be reviewed with BMS. All corrective action plans will be executed by the next reporting period.
Maintain a facility that is conducive to a productive environment	Deloitte has experience maintaining facilities that create a professional environment that is conducive to collaboration and learning. For more details please refer to Section 6.
Be proactive with regard to the performance of **the DW/DSS**	Deloitte will work with BMS to identify and define Key Performance Indicators (KPIs) for the DW/DSS. We will use performance monitoring tools to regularly monitor performance of the DW/DSS and generate alerts when the KPIs fall below defined thresholds. We will schedule regular Data Warehouse operations meetings with BMS in which we will discuss performance, statistics and present ideas for continued improvement.
Employ a competent staff that interacts **professionally and cooperatively with BMS staff**	Deloitte is pleased to present a world-class team of professionals, committed to working on the DW/DSS project that has the combined experience in Data Warehouse design, development, and implementation, as well as, development and deployment of Medicaid solutions. We propose an integrated implementation and support model, where a critical mass of talent bridges the gap between build and operate. That is to say that a core team that participated in the development of DW/DSS will be augmented with additional resources to provide the appropriate mix of technology and business experience with transition and ongoing operations experience. For more details please refer to *Section 9.0 Project Staffing.*
Analyze operations reports and respond to any issues	Our Operations team monitors and analyzes operations reports to ensure that the system is functioning correctly and at peak performance. Any issues will be presented in daily reports with the corresponding analysis and corrective action.
Provide a dedicated .50 FTE Training/Data Analyst onsite at BMS to supply ongoing training to BMS staff and data analysis	Deloitte will provide a dedicated training and data analysis resource to work onsite at BMS for at least 20 hours per week. The resource will provide real time training and data analysis for BMS staff.

RFP reference: 3.2.11, Operations, Page 41

During Phase Two the DW/DSS should undergo certification by CMS concurrent with certification of WV's replacement MMIS. The Vendor should describe the support that they plan to provide BMS during the CMS certification process and how they plan to provide a system that meets all CMS certification requirements. This includes creating and reviewing documents, attending meetings, assisting in the development of presentations, answering questions, facilitating system review and access and other activities needed to support the certification process.

CMS Certification

Deloitte understands the importance of the CMS certification of WV's MMIS in validating that the management and operations of the system is compliant with requirements set forth by Part 11 of the State Medicaid Manual (SMM). During Phase 1 of this project Deloitte will track through the Requirements Traceability deliverable the compliance of the DW/DSS to specific CMS certification checklist items to deliver a system that meets all CMS certification requirements. Upon Certification period we will work with BMS and WV's MMIS vendor to identify and validate those processes and functions for which CMS certification is required. We will present information captured by the DW/DSS through predefined and Ad hoc reports to demonstrate that all requirements are being met. Our findings will be presented with appropriate documentation and corresponding presentations.

We will fully support any meetings or inquiries regarding the certification process. This will support the agency in identifying any gaps in achieving certification from CMS. Deloitte has previous experience in working with CMS in multiple states including Pennsylvania, Massachusetts, Maine, and Wisconsin.

Turnover Plan

Deloitte is committed to facilitating BMS operational ownership of the DW/DSS solution upon completion of our contract. Through knowledge transfer activities including documentation, information sessions, and shadowing, the State or successor vendor, will be in a position to operate the DW/DSS solution. We have developed and refined a four-stage turnover process to allow for seamless transition. Our team works with successor staff to perform knowledge transfer "on-the-job". Our team's experience makes this very effective in developing the skills necessary for your staff to independently maintain the system and provide ongoing production support. This process involves four separate increments. First, we define a detailed turnover plan where we work with the fiscal agent, BMS and successor staff in defining scope, roles and responsibilities, and assemble a service delivery team. Next, we help establish the knowledge transfer foundation by identifying the basic principles of system transition and those skill sets that are necessary for our clients to effectively manage system support once the contract ends.

Furthermore, a formal walkthrough is conducted with the State to verify that turnover execution has been completed successfully. Finally, Deloitte and the successor finalize turnover as set forth by BMS requirements. During the Turnover process, we manage and perform the planned turnover activities while continuing our commitment to enhance and maintain the DW/DSS solution. We bring a high level of professionalism throughout the turnover period to effectively transfer responsibility for the DW/DSS systems to a successor team. This commitment is a function of our desire to see BMS continue its success with and gain recognition for its outstanding systems. Deloitte's past service experience and reputation within the Health and Human Services industry reduces risk to BMS during this crucial phase. Deloitte will provide to BMS, within 30 days of being asked to do so, a Turnover Plan detailing the approach to transitioning systems and operational responsibilities to a successor.

3.2.12 Enhancements and Modifications

- Enhancement. Change initiated by the Bureau to achieve strategic objectives, implement new programs, and mature business capabilities.

The Vendor's proposal should present a narrative description of the Vendor's proposed approach to completion of the Enhancements and Modifications Phase, including the Vendor's proposed:

- Methodology and approach to:
  - Change Request process to provide a framework for submitting, reviewing, approving, prioritizing, and monitoring all enhancements and modifications,
  - Managing development and implementation of enhancements and modifications, including methodologies for project management and application development,
  - Implementing enhancements and modifications with minimal disruption to users,
  - Monitoring and reporting on the development and implementation of enhancements and modifications to the new West Virginia DW/DSS, and
  - Tracking, reviewing and reporting.

The Vendor should also describe their ability to offer and deliver enhancements which should be of benefit to BMS but which BMS has not specifically mentioned.

The previous section described our approach to ongoing operations. However, the agency also needs to fulfill federal and state mandated policy/system changes, improve existing processes and functionality, and achieve new initiatives. These system enhancements require additional requirements definition, design, development and testing in order to deploy to the DW/DSS user community. In order to meet this vision, Deloitte will provide the resources to manage and staff enhancement initiatives from a pool of 8,000 hours per contract year. This pool of hours, known as the Software Modification Pool (SMP), augments the base level of support and offers BMS the complete flexibility to manage required changes to DW/DSS over the life of the contract.

Our Approach

The Deloitte WV DW/DSS solution offers BMS a solid foundation, which is customizable and extensible beyond the initial scope. Enhancements and modifications can be easily integrated into the base DW/DSS solution. ███

The successful delivery of these SMP initiatives is woven into the daily activities we perform in Ongoing Operations. SMP activities are tracked as change requests and follow the SDLC with defined tasks, required hours and delivery dates. Acceptance letters are presented to BMS for each SMP deliverable and the SMP budget is tracked accordingly.

Enhancements and Modifications Pool Process

Deloitte recognizes the importance for BMS to maintain control and oversight. The SMP is, therefore, managed by an agency approved Change Control Board (CCB) that is granted the authority to approve enhancement requests. Each enhancement request allocates and expends enhancement hours from the established SMP budget. Upon written notification of a software modification request (either through the issues process or through a software modification request), Deloitte will work directly with BMS to determine the nature of the requested system change(s) and finalize the high-level functional requirements for implementing the system modification request.

Once the overall system modification requirements are obtained, Deloitte completes a feasibility study and a formal impact analysis on what system changes must occur in order to implement the DW/DSSs system modification request. Deloitte and BMS confirm the requested system modification is not in conflict with WV DW/DSS's overall system design, the modification is indeed feasible, and that the modification should be pursued through the software enhancements and modifications pool process.

In completing the initial impact analysis, Deloitte determines the estimated impact on programs/modules, data, training and testing these changes. Once this impact analysis is completed for the system modification request, Deloitte consults BMS on any time constraints, and jointly determines the time required to complete the system changes and the number of anticipated resources required by position. Deloitte also documents any anticipated impact on existing system operations.

The enhancement request and corresponding impact analysis is presented at the regularly scheduled CCB. Deloitte facilitates the CCB and administers the process, but the agency determines the initiatives, changes and improvements that are approved and charged to the SMP budget.

Deloitte has a similar SMP budget to support the integrated eligibility system for the State of West Virginia. Below are a few examples of the types of enhancements for which DHHR used their SMP budget in the last year:

- The project worked with the department to develop a single referral process for all medical programs that may be utilized by an MR/DD (Mental Retardation/Developmental Disability) Waiver eligible applicant to meet with a civil action suit filed against DHHR. The solution was delivered within the required timeline and allows for tracking individuals on the MR/DD Waiver waitlist, determining and tracking whether individuals are potentially eligible for additional programs, and submitting referrals to appropriate DHHR agencies for those individuals.

- By expanding the automation of the Low Income Energy Assistance Program (LIEAP) DHHR was able to provide fast and direct delivery of benefits to families while reducing local office traffic. Twenty nine (29) percent of customers took advantage of the new automated process, which seamlessly wired money to the authorized vendors, thereby reducing the chance for fraud.

- The Federal waiver of Face-to-Face interview requirement for SNAP redeterminations allows the state to move more than 10,000 monthly in person interviews to phone interviews.

Deloitte has supported the maintenance and operations of the WV RAPIDS project for 16 years. We have delivered 12 releases of the self-service portal (inROADS), three releases of the data warehouse (RAFT) and three releases of the incremental modernization initiative (eRAPIDS) all without needing to execute a change order.

Methodology and Approach

A core component to keeping the solution at its highest quality is through employing effective software and configuration change control procedures. Enhancements and Modifications are tracked as change requests in the Project Tracking Tool. For our detailed Change Request process, which provides a framework for submitting, reviewing, approving, prioritizing, and monitoring all enhancements and modifications refer to *Section 3.2.16, System Development Change Management Methodologies.*

Once the change request is approved and prioritized by BMS, Deloitte creates work plan and assigns resources based on the number of hours required to complete the change request considering the requirement of when the change needs to be implemented in production. Staffing for each of the change request will be tracked in Microsoft Project. For additional details of staffing, refer to *Section 9, Project Staffing.*

Deloitte uses several tools for managing and executing the activities for enhancements and modifications. The main project management tool used is Project Management Center (PMC), a project and portfolio management tool used for planning and monitoring risks, issues, work plans/schedules, resource allocation, time tracking, and budgeting. For our methodology and approach to managing development and implementation of enhancements and modifications including methodologies for project Management and application development, refer to *Section 3.2.16, System Development Change Management Methodologies* and *Section 3.2.14, Project Management Methodologies*.

Deloitte performs system maintenance activities and promotion activities for implementation of enhancements and modifications during the time outside of the normal work hours like nights and weekends using appropriate tools to confirm that users of the system will not have any disruption.

3.2.13 Help Desk Activities

RFP reference: 3.2.13, Help Desk Activities, Page 43

The Vendor should propose a Help Desk to provide DW/DSS user support and should describe the support that is offered, including specifying the hours of availability, and how 24 hour on-call support will be provided. Normal Bureau hours are Monday through Friday, 8:00a m – 5:00p m EST.

Proposed support should respond to user questions, direct problems to the proper resolution entity and provide technical support to users (e.g., interpret query error messages, help with simple query creation, verify system availability, etc.). Vendors should also propose support that helps users retrieve desired data; selectively view and present data; format and save reports; develop specialized reports; develop alternative ways to group and present; or other services that enhance the understanding of reports and query results.

The Vendor should propose a COTS product to track, classify and report back to BMS on help desk contacts. If the Vendor proposes such a system, the Vendor should describe the data that would be captured and the reports that could be made available to BMS.

A Help Desk for end users will be established to provide real time support on work days (Monday through Friday except State holidays) during normal business hours (8:00 a.m. – 5:00 p.m. EST) and on an on-call basis during non-standard business hours. The Help Desk will be staffed with knowledgeable resources that understand the system, the features, Cognos functionality, and the BMS data model. The BMS DW/DSS help desk is face of the DW/DSS to users. It is critical that users receive timely and accurate responses to their DW/DSS questions and that the information meets their needs. The success of the help desk is based in human interactions, how people are treated, and the information they receive.

Help Desk Approach

Deloitte's approach to help desk management focuses on the resolution of user issues and (if necessary) the restoration of normal service operations as quickly as possible while minimizing the impact on day-to-day operations for BMS. Our help desk processes facilitates efficient resolution of application issues reported by end-users.

Our approach is designed based on Information Technology Infrastructure Library (ITIL) standards and:

- Focuses on end-to-end service support

- Provides single point of contact for users

- Enables user requests (issues, enhancements or questions) to flow seamlessly to completion

- Leverages resources for cost-effective service delivery

- Supports continuous process improvement and quality initiatives

- Measures adherence to SLAs

Help Desk Support

The transition to any new system can be difficult for users. These transitions always generate a lot of questions from users, so having help desk staff that know the system and can answer questions is important. The table below details some of the problems that DW/DSS users typically encounter and our suggested approach for answering these questions.

Types of Issue	Sample Resolution Approach
Error Messages	- Review help desk materials for similar error and solution guidelines - Recreate the error and work with user to resolve
Query Creation	- Reference available training materials on the creation of simple queries - Leverage help desk scripts to help pinpoint where in the process they have difficulty
System Availability	- Reference system schedule for standard availability - Review project plan to identify upcoming releases that may impact system availability
Retrieving Data	- Confirm user access for desired data - Reference available training materials such as job aids and Web-based training modules
Presentation of Data	- Discuss users business objective and how they want to display the data - Provide suggestions on other output formats that may be more feasible
Reports	- Confirm desired report output and user machine has necessary software - Direct users to available training materials on report output

These are only a few examples of the issues that BMS DW/DSS users may face, but Deloitte recognizes that help desk staff members have to be well versed not only on how to provide good customer service and have Medicaid knowledge to assist users in understanding the report outputs.

Developing an Effective Help Desk Guide

It is imperative that our help desk staff is properly plugged in to the project. Two months prior to go-live, we will deliver a Help Desk Guide that will serve as a reference tool for our help desk staff. The Help Desk Guide will contain the following types of information:

- Help Desk scripts to assist help desk staff in supporting callers; scripts will enforce consistency and will help **overcome any** frustration that end-users might encounter when calling the Help Desk

- Standard error messages and how to interpret them

- Providing guidance on how to develop simple queries

- How to verify system availability

- Frequently Asked Questions (FAQs)

- Call routing/escalation procedures to other State Help Desks when request are non-DW/DSS related

- **Procedures for communicating information to all DW/DSS users when a global issue is identified**

- Standard workarounds and "tips and tricks" for resolving requests that cannot be resolved immediately

- Help Desk reporting requirements and reporting procedures, including those required to create the Help Desk (Triage) Ticket Reports and any other reports that may be required for the Help Desk status report meetings

Help Desk Application

To track and report help desk calls, we recommend the use of our Automated Tracking System (ATS). ATS is successfully being used on the West Virginia RAPIDS project. ATS is a Web-enabled tool that was developed to assist in the management of various activities during the implementation of major applications, client policy changes, and general maintenance. This system uses a centralized, shared database located on a dedicated database server. Activities within ATS are organized into distinct modules and the primary module we will use for system support and maintenance is the issue module.

Additionally, ATS provides numerous progress reports (list, summary/detail, subsystem, type, priority, etc.) regarding help desk calls. These reports can be used to track call volume, identify similar issues faced by end users, and general help desk metrics. Figure 3.2-18 is a sample screen shot of the ATS tool.

Help Desk Ticket Information

In order to leverage the robust reporting capabilities of ATS, help desk staff will capture basic DW/DSS user information such as name, telephone number, and email address. In addition, ATS will capture technical information such as:

- Detailed description of the problem

- Date and time submitted and date and time closed

- Case type – this identifies the type of call that is made to the help desk

- The call resolution and time spent on a call

- Associated MITA business area

Moreover, ATS will automatically generate a help desk ticket number for reference purposes and tracking. Furthermore, these fields can be customized to BMS' business needs.

Lastly, the collection of the aforementioned data elements can be used as inputs to generate ATS help desk reports. The help desk lead or other authorized users can generate ad hoc reports based on BMS reporting needs.

Some standard reports include:

- Number of calls logged on a weekly/monthly/quarterly basis

- Queue information weekly/monthly

- Number of calls sorted by date

- Call types and resolutions weekly, monthly summary

- Weekly Summary of open issues,

3.2.14 Project Management Methodology

RFP reference: 3.2.14, Project Management Methodology, Page 43

The Vendor should propose the use of an industry standard project management methodology and should describe in detail how the Vendor plans to apply that methodology to the completion of DW/DSS DDI, and how components of the methodology are applied to the operations and enhancement period. In their description, the Vendor should include the controls, tasks, procedures and communication mechanisms that are used to manage the numerous tasks identified in this RFP, and the Vendor's approach to practicing the project management disciplines necessary to achieve project goals. The Vendor should recognize in writing that their methodology and approach should interact effectively with the overarching BMS Project Plan and that the Vendor should work cooperatively with BMS' Project Management Office.

In their proposal, the Vendor should describe their methodology within the major project stages of:

1. Project Initiation and Planning,
2. Project Execution and Control, and
3. Project Closeout.

The methodology should incorporate:

- Weekly status reports,
- Monthly summary reports,
- Status meetings, and
- Process for acquiring BMS acceptance of a deliverable.

The Vendor's proposed process for acquiring deliverable acceptance by BMS should include, but not necessarily be limited to, discussion of the process for agreeing upon measurable acceptance criteria for each deliverable and documenting that those criteria have been met, adequate time for BMS review of deliverables (typically at least 10 business days), the timeline (typically 10 business days) and process for remediating deficiencies and the format to be used for BMS signatory approval.

The Vendor should include sample reports, forms and deliverable formats in a separate section at the back of their proposal.

Project management is the engine that drives the project toward its intended goals, and a good Project Management Methodology (PMM) is essential to provide leadership and vision; to execute work plan steps effectively and efficiently; and to address difficult issues as they arise. We believe that core values of our firm are our effective methodologies and approaches to integrating with our clients' strategic goals and how we actively collaborate with our client project teams. In support of these core values, Deloitte recognizes that our methodologies and approaches will support the overarching BMS Project Plan and that we will work collaboratively with BMS' Project Management Office.

Deloitte's ████████████████████████████████████ includes an integrated thread of Project Management that is based on the Project Management Institute's Project Management Body of Knowledge (PMBOK). ██
██
████████████████████████████████████

- **Prescriptive.** The methodology contains tools, detailed procedures, templates, and sample products for creating project management deliverables in various stages of the project. These project management tools assist in initiating, planning, executing, controlling, and closing the project.

- **Scalable.** Its modular design maximizes the method's applicability to most projects, regardless of duration or size.

- **Applicable.** PMM4 methodology is a standard for each Deloitte project; and therefore constructed to apply to the entire spectrum of Deloitte projects. Our standard methodology is augmented with additional deliverables specific to West Virginia BMS.

- **Practical.** We focus on actual experiences and solutions, avoiding mere theoretical approaches.

The following figure highlights the key project management activities and tools we will use to manage and control each aspect of the project; and we will tailor our approach to support the specific needs and vision articulated by BMS for the DW/DSS procurement project.

Quality Management
- Quality assurance plan and schedule
- Use of PMBOK best practices
- Rigorous trackability and testing
- Detailed technical standards and procedure manuals

Procurement Management
- Acquire goods and services from vendors/suppliers
- Manage contracts

Scope
- Disciplined change management plan and evaluation
- Web-based tools for collaboration team tracking and reporting
- Established expectations for deliverables and work products

Communication
- Understanding of BMS priorities, goals, and objectives
- Established communication procedures
- Bi-weekly and monthly status reports
- Informal and formal communication
- Informal and formal reviews and project deliverable communication

Organization/Personnel
- Provide the right people when needed
- Cross-train people so there is no critical dependency
- Provide ongoing education and training
- Integrated project teams

Cost Management
- Maintain financial plan
- Manage scope to meet requirements
- Proactive tracking and reporting
- Manage invoicing and receivable processing

Issue Management
- Prevention through planning philosophy
- Identify, prioritize, and manage issues at each level
- Escalate issues when necessary
- Web-based tracking and reporting tools

Risk Management
- Customized risk management plan
- Proactive identification and monitoring
- Extensive repository of knowledge risks facilitates monitoring effort
- Formal contingency plans
- Web-based tracking and reporting tools

Time Management
- Use of structured project plan in MS Project
- Bi-weekly project plan updates
- Integrated project plan and reporting

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Figure 7-5.

Initiate. During this process our team works with the West Virginia BMS DW/DSS team to review and document business requirements for the project. We work with you to refine the high-level strategy for each of the included tasks and develop a detailed strategy for the completion of each task.

Plan. During this process, our team facilitates detailed planning sessions with BMS DW/DSS staff. While performing the planning process activities, our project team remains cognizant of the underlying objective of the project and more importantly the overall mission of the project. The plan process includes confirming (and revising, as needed) the project objective, and outlining the scope of work and documenting the constraints, assumptions, and risks of the development project. We then create and/or update the Project Management Plan and the corresponding work plan according to our process framework templates. These components identify the timeline for the project and carefully present milestone dates for deliverables and/or work products.

Execute. The execute process is where our team focuses a majority of the work towards implementing the Project Management Plan. We deliver project status reports and other communications throughout the execution phase to inform stakeholders of project status and progression of the work.

Control. During the control process, the Deloitte Project Manager monitors the progress of the project against the defined plan and develops corrective action plans to avoid or resolve any variations that are observed. The control processes include risk, issue, and change identification management and resolution processes.

Close. During this process, the Deloitte team verifies that the project objectives were met, validates the final deliverables with the West Virginia BMS DW/DSS project director, conducts final knowledge transfer activities and captures any lessons learned.

Deloitte has demonstrated the effectiveness of our project management approach in over 100 distinct, large-scale health care and State Government projects throughout the country. In support of the processes in each of the stages in the ████████████████████████████, our team will leverage the Deloitte Project Management Center (PMC) that provides a centralized Web-based platform to manage all phases of a project: delivering preconfigured dashboards for project startup, predefining workflows, confirming easy accessibility and information-sharing among all parties, and producing real-time reports. The Deloitte PMC provides pursuit materials to jump-start and carry out projects from start to finish. The following figure highlights the benefits of the PMC which enables our team to quickly launch our project management efforts without having to "recreate the wheel."
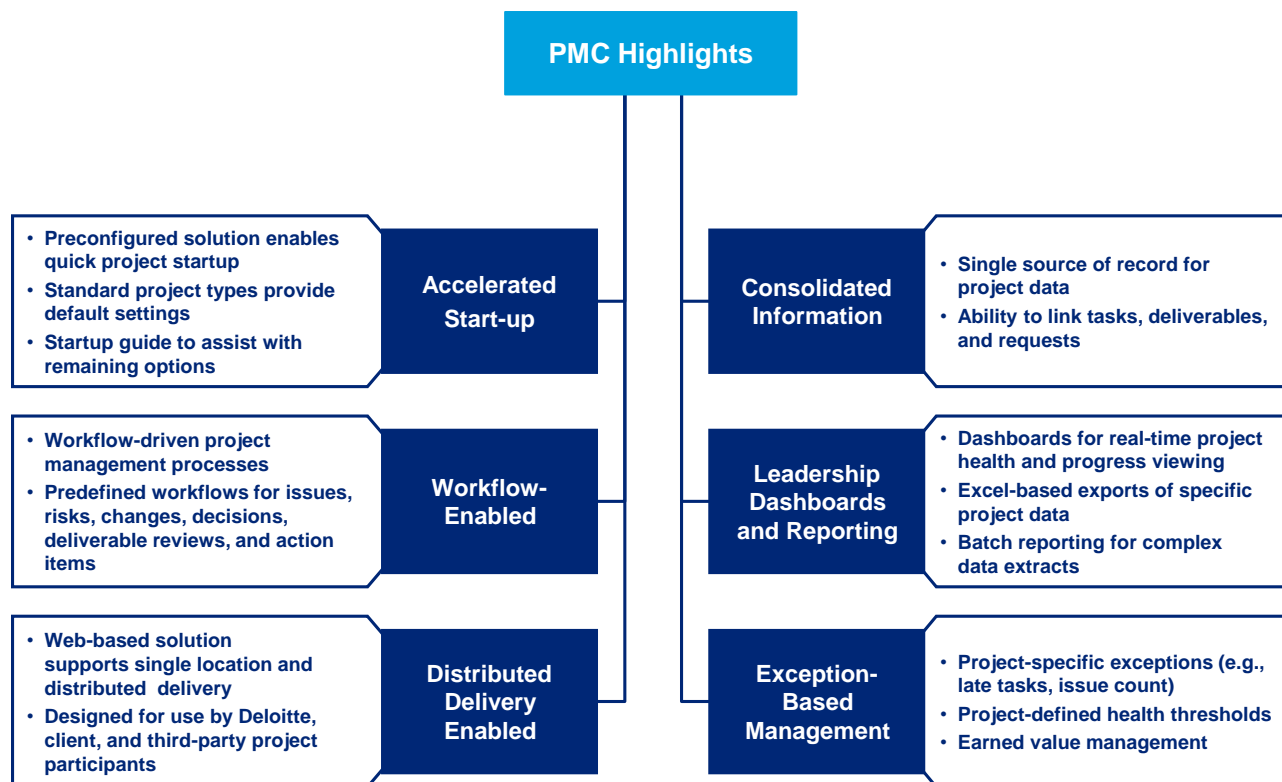
WV_DW_DSS-023

Figure 7-6. Project Management Center.
Project Management Center provides a centralized platform for managing and delivering a Deloitte-run project.

Using the Deloitte PMC brings immediate benefit to both the Deloitte team and BMS, as we can "hit the ground running" and not have to spend a significant amount of time establishing a project management office. This is particularly important to the BMS DW/DSS project given the tight time frame for implementation, which is identified as being twelve months from contract start date.

Project Management Center Benefits to BMS	
• Reducing the time to initiate projects	• Enabling concurrent project data access and maintenance
• Centralizing project information and enables distributed delivery with Web-based user portals	• Facilitating the standardization of project management processes across the organization via workflows

Deloitte will participate in audit activities, such as attending meetings, running reports, providing documentation, and providing access to all system components and modules as requested to do so by BMS.

Management Control Tools

The project management center provides the team with detailed functionality for clients in maintaining logistical control over projects, and developing a logical and structured approach to deliverable production and change management. Among these tools are eRoom, issue and risk management tracking, deliverable review workflows, work plan management, resource tracking and management, and an executive dashboard summary. Moreover, we have developed standardized bi-weekly status reports; steering committee reports, and meeting agenda and meeting minute templates. Details of the management control tools are detailed below.

eRoom

Deloitte employs a Web-based tool, eRoom, to serve as a secure, central repository for the DW/DSS project documents and artifacts. The eRoom is provided free of charge for the duration of the project. Our team has used eRoom on almost every health and human services project to protect the confidentiality of project data and electronically store project documentation. During project initiation, Deloitte works with BMS to develop the most fitting structural layout for the project eRoom.

Issue Management

Managing issues that arise throughout the project life cycle is an important part of project management. Through the experience that we have learned on other DW/DSS related projects, our team has developed the following strategy for addressing and escalating problems and issues as they arise. The following figure is an example of how we will manage issues for BMS related to DW/DSS project activities.
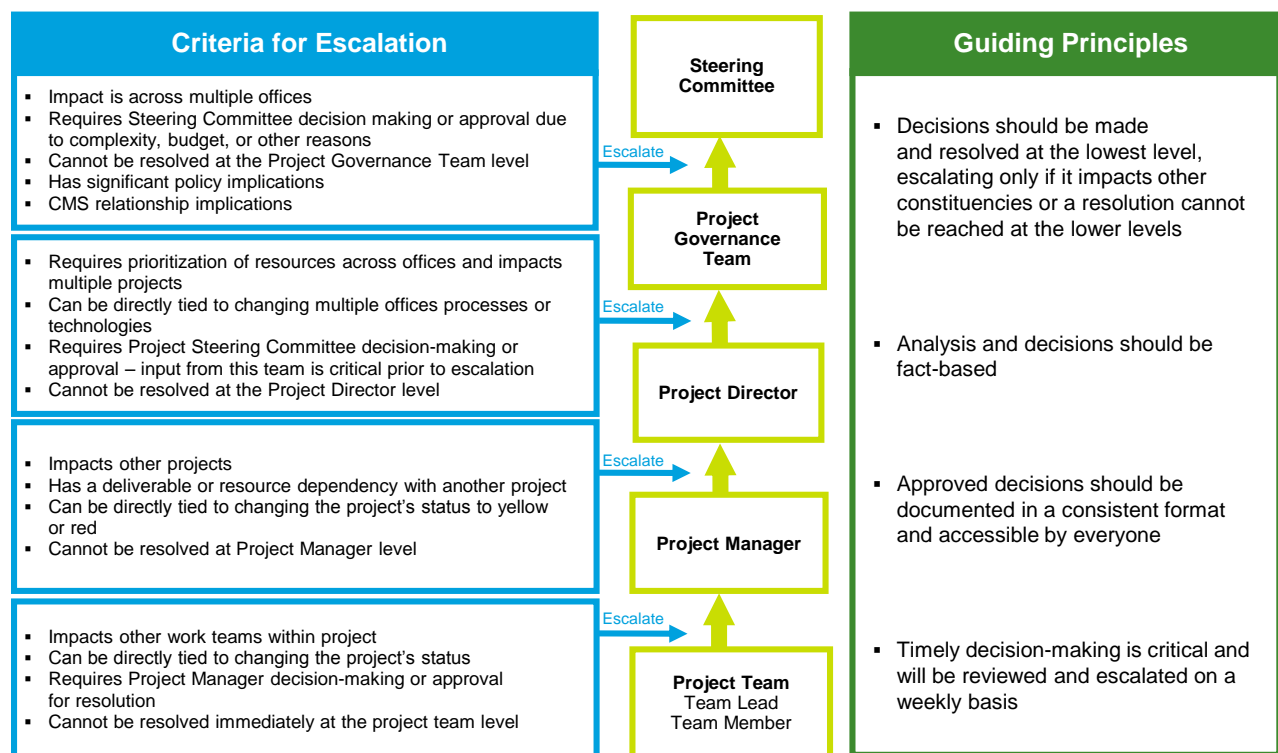
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Figure 7-7. Project Escalation.
Issues should be resolved at the project team level whenever possible.

Once an issue is escalated from the project leads to the project manager, the responsible project lead will draft an approach for resolution and suggest a corrective action plan to address the issue and how a similar situation can be avoided in the future based on lessons learned. Also, through the Deloitte Project Management Center, the team can track issues and subsequently print an issue dashboard for status reporting purposes.

Risk Management

Our team understands the importance of identifying and managing risks in order to achieve the tasks identified in the RFP. Our team brings an established risk management plan that has worked successfully on other projects of similar magnitude and scope. In addition, we provide risk identification and mitigation strategies that have been effectively used on similar projects. Our approach benefits BMS by employing leading practices for mitigation of such risks. Deloitte approach to risk management is a two prong approach; risk analysis and risk management.

The figure that follows identifies three components of risk analysis and three responses to managing the analyzed risks.

Risk Analysis	Risk Management
Identifies potential problem areas and quantifies the risks: • **Risk Identification –** Identity and categorize the risks to the project • **Risk Estimation –** Estimate the chance of a potential loss • **Risk Evaluation –** Evaluate the overall consequences of the risk to the project and enterprise	Responds to the analyzed risks: • **Risk Planning –** Plan methods to control risks and respond to risks that occur • **Risk Control –** Implement methods to control risks through reduction or protection • **Risk Monitoring –** Monitor the actual risks and the execution of risk mitigation plans, then refine the plans as required

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Figure 7-8. Risk Analysis and Risk Management.
Risk analysis results and risk management plans should be updated periodically. By identifying potential problem areas and responding to analyzed risks, the project will be done on time and within budget.

Quality Management

Quality management will confirm that DW/DSS deliverables conform to quality standards as established by the BMS and the project team. It consists of:

- **Quality Planning.** Identify quality standards that are relevant to the project and determine how to satisfy them

- **Quality Assurance.** Conduct periodic evaluations of project documentation to confirm quality standards are being followed

- **Quality Control.** Monitor specific outputs for standards compliance and identify opportunities to correct unsatisfactory or non-compliant documents and/or deliverables

The foremost goal is to help deliver quality deliverables based on the agreed upon deliverable templates reviewed with BMS project management. Quality establishes the degree to which the programmatic needs of the project are being fully met. This is a key component in a prevention-based management approach to maintaining quality standards. We define quality in two ways: the standards for the development of key deliverables and the timely completion of assigned tasks and milestones. Through the Deloitte Project Management Center, we leverage the deliverable review management functionality. This functionality is a workflow-enabled review and tracking of deliverable review comments. By using the Deloitte Project Management Center deliverable review workflow process, our team's project manager and partner can monitor the status of BMS deliverables throughout the process. The deliverable review workflow process

includes regular checkpoint meetings with our project management team to confirm the quality of work performed and that all requirements are met.

Deliverable Production

We work proactively with BMS throughout the project to review initial expectations, gain input and buy-in on initial drafts and collaboratively walk through final presentations to help confirm that the content accurately reflects the activities of the engagement and efficiently summarizes our findings, recommendations, and next steps. The key components of our approach for deliverable production follow.

Deliverable Template

As earlier in this section, Project Initiation will establish documentation standards for project work products. Included with the documentation standards is a deliverable template and agreed upon naming conventions for work productions.

The deliverable production process starts with the deliverable template which is used to create the deliverable expectation document. Our team will schedule a deliverable expectation review session to walk through the proposed outline for the selected deliverable. This meeting allows the Deloitte team to confirm the State's expectations regarding deliverable content, addresses the scope of work and gives the State a "sneak preview" as to what to expect with the final deliverable. In this stage, reviewers and acceptance criteria are defined for each deliverable by BMS and Deloitte. Deloitte will deliver all identified project deliverables to BMS as identified in the RFP.

Deliverable Quality Assurance

The BMS project deliverables are the milestones for each phase of the project and are subject to Deloitte's internal quality management processes prior to official submission for BMS review. This process includes reviews by the team lead for each activity, as well as reviews by the project manager and/or the project partner at critical points during the deliverable development.

Deliverable Walk-Through

Prior to officially submitting deliverables to BMS for formal review, the Deloitte team will host a deliverable presentation to BMS management. The purpose of the presentation is reconfirm that the deliverable aligns with the original deliverable expectation document; all issue and decisions associated with the deliverable have been addressed and recorded in the appropriate tool; and the submission of the deliverable is on-time as detailed in the project work plan. The presentation of project deliverables as detailed in the RFP is required and will be included in the project schedule.

Deliverable Submission and Review

In order to help facilitate the State's review of project deliverables, Deloitte will provide a deliverable comment log with each project deliverable to allow the State to document deliverable feedback in an easy-to-communicate format. This comment log will accompany the deliverable through the deliverable's review and feedback loop. Deloitte recommends allocating ten (10) business days for each draft deliverable review. For the final State review, Deloitte proposes a five (5) business day review period. While this review period we suggest is shorter than the review cycle for draft deliverables, it is our expectation that based on our iterative

and collaborative approach for completing project deliverables, the State should have "no surprises" once the final deliverable is received. The final deliverable will include changes based on feedback received during previous reviews internally and with the State. As such, the deliverable review time for official deliverables can be significantly shortened and the time can be allocated to other activities already in progress.
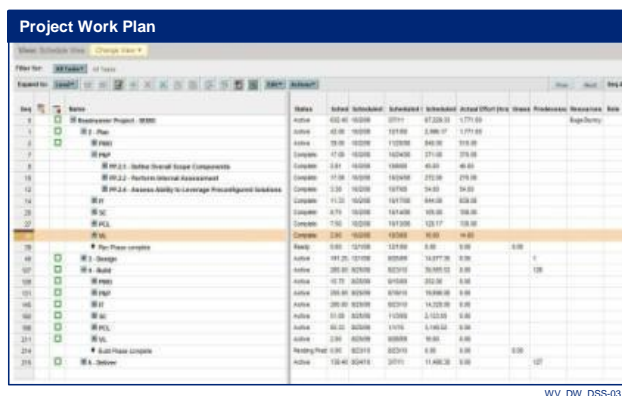
In the event that the State's review results in a decision that the deliverable is non-compliant, the Deloitte team will address the State's comments regarding the deliverable being non-compliant and will address these issues within 10 business days and re-submit the deliverable to the State. Prior to resubmission, our team will schedule a deliverable review session to outline how the team addressed the State's concerns. Following the deliverable review session, we will resubmit the deliverable with the comment log to BMS for a second review and subsequent approval.

Resource Tracking

To track resource assignments, we leverage the resource task entry, resource calendar, resource dashboard, project resource usage and project capacity and load functionality in the Deloitte PMC. This functionality enables BMS to review:

- Resource-based view of work calendars and assigned tasks

- Resource dashboards showing capacity, load, and assignments

- Manage resource capacity by groups and provide a breakdown to individual resources

- View the scheduled and actual effort by resource by period down to the assigned Task level

As part of our resource management and overall project management efforts to confirm the quality of the work and that are requirements are met; we develop a Microsoft Project Plan based on the timeline established by HHSC. We will work with BMS to finalize a baseline of milestone dates and deliverable completion dates within the first 10 calendar days of the project as detailed in the RFP.

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Figure 7-9. Sample Project Work Plan.

For all deliverables, we schedule deliverable review meetings to confirm the outline and format of the deliverable with BMS project management. By scheduling deliverable review meetings in advance of the official deliverable submission helps BMS with the official review once the deliverable is received because consensus regarding the deliverable content is achieved before the actual submission thus expediting the review process. The figure above is a screen shot of a project work plan which we can continuously review and update through the PMC.

Status Reporting

Deloitte employs a standard bi-weekly status report format that is informative, actionable, and succinct. Reports such as the one pictured below help the project team and BMS leadership gauge the progress and status of each phase of the assessment and keep the critical stakeholders informed of any issue– both positive and negative – that can affect the project. An example of a bi-weekly status report is illustrated in the following figure.

Project:	West Virginia DW/DSS		Prepared By: John Gahr, PM	
Delivery Status	**G** [G]Tracking to Plan **Y** [Y] Behind Schedule **R** [R] Significantly Behind Schedule	Client Project Manager	<insert client contact>	
Reporting Period	Mm/dd/yy – mm/dd/yy	Deloitte Project Manager	John Gahr	
Meeting Date	Mm/dd/yy	Distribution	<insert the names of all the folks this is distributed to>	

Executive Summary

<The Executive Summary should contain a brief description of what is contained in the body of the status report along with any high-level analysis of data, risks, issues, or actions. Additionally, this section should summarize the work conducted over the last reporting period and describe any major milestones or significant revelations/learnings.>

Issues/Risks Requiring Management Attention

<List any risks or issues that require additional/specific attention. List these numerically and be sure to assign a resource to them.>

Accomplishments/Lessons Learned for This Reporting Period

<Detail the accomplishments, learnings, trainings, etc that have taken place over the last reporting period. List these numerically.>

Planned Activities for Next Reporting Period

Overall Project Percent Complete By Phase

Phase	Last Period Percent Complete	Current Period Percent Complete	Change
INITIATE			
PLAN			
EXECUTE			
CONTROL			

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Figure 7-10. Sample Bi-weekly Status Report.

This format is extremely effective, but will be modified to address BMS reporting requirements. Bi-weekly status report meetings are scheduled with the project management team, along with the team leads and other invited team members as appropriate. The objective is to present team status updates, unearth critical issues and plan next steps. During each meeting, the project managers are responsible for guiding the discussions and presenting materials presented in the bi-weekly status report.

Deloitte uses demonstrated and time-tested methods for documenting and communicating the results of various meetings and workgroup sessions. These methods include the extensive use of detailed meeting agendas and subsequent follow-up with meeting participants by distribution of the minutes of the session. These tools help confirm that the appropriate stakeholders are included in the process and that their concerns and ideas are documented and appropriately acted upon. An effective use of agendas and minutes of meetings decrease the likelihood of extensive conflict over scope and expected deliverables and can introduce an agreed upon method of accountability for the actions of the team.

3.2.15 Configuration Management Methodology

RFP reference: 3.2.15, Management Configuration Methodology, Page 44

The Vendor should propose a configuration management methodology and describe the processes, configuration management tools and procedures the Vendor uses to control the migration of any hardware or software (system and application) to the production environment. The description should include the configuration management system and the use of proven promotion and version control procedures for the implementation of modified system modules; COTS products; system software (e.g. Operating Systems (OS)); network; files (including documents); databases; and hardware.

The Vendor should also provide in their proposal:

- A description of how the Vendor controls multiple activities occurring simultaneously across multiple environments (e.g., development, test, UAT, training, production and business continuity);

- A description of tools and business processes to control software development, including check in/checkout procedures and a responsibility audit trail;

- A description of business processes and procedures for controlling the migration of code from design through coding, testing phases (e.g., unit, integration, acceptance) and promotion into production; and

- A description of the organizational structure to control all system development and maintenance.

Configuration management is a critical facet of project development and overall project management. Deloitte's configuration management (CM) methodology provides a regimented process to track when code changes, who changed it, why it was changed, and when it should be promoted to an environment. This is critical to confirm BMS' business and technical requirements translate into the desired system functionality. Additionally, the ability to trace not only code, but changes to requirements, system documentation, and project plans is imperative to successfully managing a software development project.

With experience from hundreds of successful system implementations, Deloitte has proven methodologies for configuration and change management. Additionally, we have extensive experience from several implementations in the Medicaid and DW/DSS market space. Our standard method and processes have been certified compliant to CMMI Level 3 process maturity expectations based on the Software Engineering Institute's (SEI) Capability Maturity Model Integration (CMMI®).

Our configuration management plan will approach these needs through a combination of automated configuration management tools and well defined processes which are proven and refined. Our approach follows industry standard best practices and emphasizes traceability of changes from initial development baselines through change request processes and effective release management.
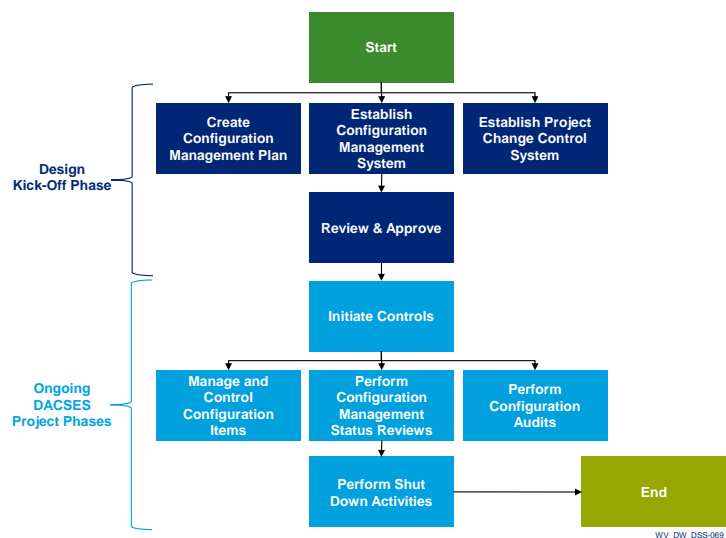
Configuration Management Process Overview

The Deloitte developed configuration management plan will be an extensive document that governs the version management of all project deliverables. Our configuration management plan will benefit BMS for the following reasons:

- **Sound Deliverable Version Control Procedures.** Our plan will encompass the project deliverables that Deloitte and BMS agree should be controlled. It lays out procedures for each type of deliverable, from DW\DSS source code through management deliverables such as project plans. This will provide BMS with traceability of project and system changes, audit ability, and control of each baseline.

- **Regimented Source Code Management.** Our plan lays out a regimented approach to source code management that is based on our established processes and the use of industry standard tools. It will institute the proper "check-in"/"checkout" procedures, approvals, branching procedures, and versioning requirements. This will benefit BMS by facilitating strict configuration control and build management across multiple environments, which means that the business can be confident that the software/functionality in a particular environment will be directly traceable to the corresponding requirements for the release.

- **Detailed DW\DSS Production Releases Procedures.** Our plan will layout the proper controls and required BMS approvals for releasing DW\DSS code through the development and testing environments and into Production. It also specifies procedures that will allow us to quickly restore a previous version of the application in the event those issues arise in a code release. This will benefit BMS by establishing strict promotion authority and rollback procedures.

- **Utilization of Automated Tracking Tools.** Our plan will bring together the right mix of automated tools to track different deliverables as required by BMS. Use of specialized tools benefits BMS through reduced time spent versioning, accepting, storing, and releasing project deliverables.

BMS will benefit through significantly reduced risk by leveraging many lessons we have learned on previous system implementations. We will use our experience from managing other large systems development and implementation projects to outline the items we feel need to be covered in the Project Configuration Management Plan.

Configuration Management Tasks

Some key configuration management and control tasks that will be elaborated in the plan are highlighted in the figure below. During the Design Kick-Off Phase, we will work with BMS to tailor our standard configuration management tasks meet specific organizational or environmental requirements. These tasks will detail how different tools and processes will be used to form the configuration management system. During subsequent phases of the project, the configuration management team will help confirm that procedures outlined in the configuration management plan are followed. They will use a combination of configuration audits, management review meetings, and control data from automated tools to monitor project performance.


Figure 7-11. Configuration Management Tasks.
The constant review of the Configuration Management Process saves the entire project valuable time and resources by reducing associated risks and increasing the productivity of the teams dependent on configuration management activities.

The configuration management plan will detail configuration activities across the DW\DSS project. The plan is designed in concert with the Change Management process. The change management process defines the policies and procedures for authorizing a change to a baseline and provides the approved change request as input to the configuration management process. The configuration management process defines how this change is to be managed through the project life cycle.

Management and Control Procedures

To confirm that the build is of high quality and is completed on schedule, most development teams have to work in parallel and may have to share objects from the same repository. Deloitte will follow the proposed code delivery process flow as shown in the figure that follows.
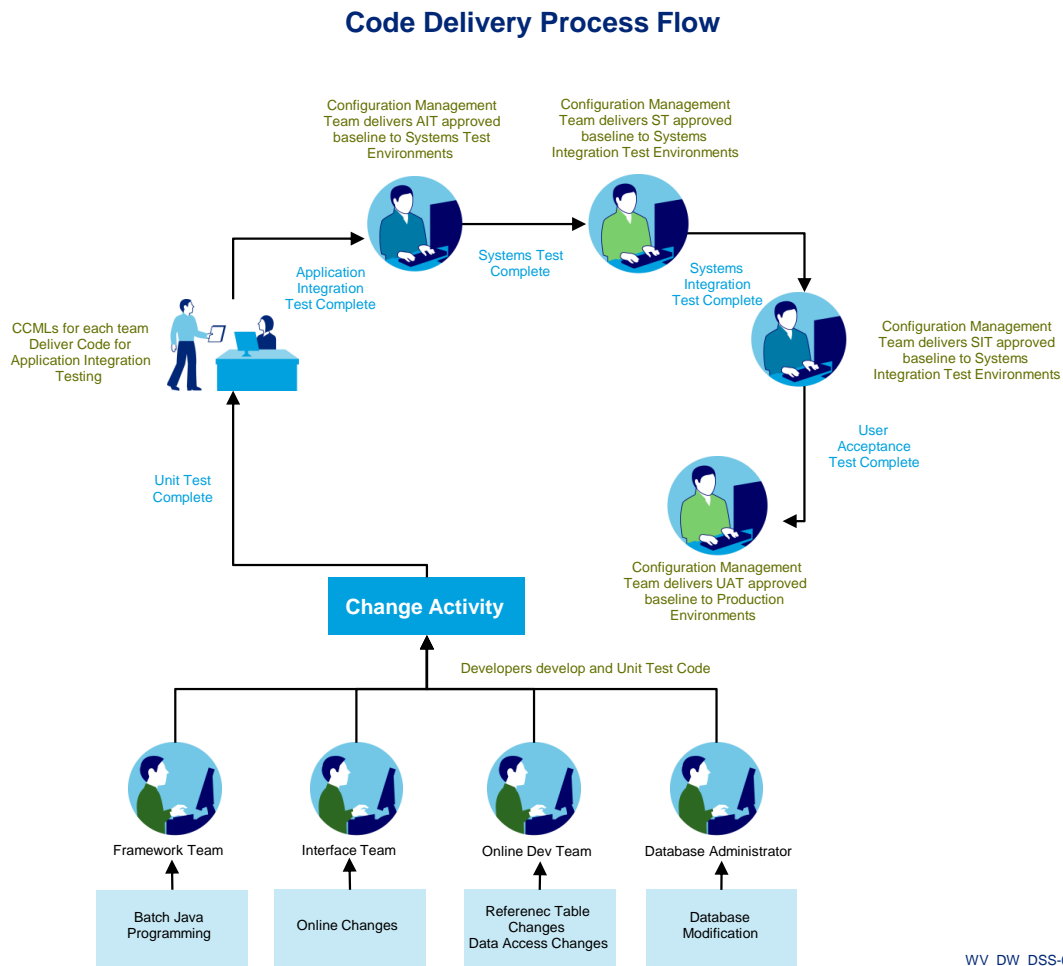
Code Delivery Process Flow

Figure 7-12. Code Delivery Process Flow.

This approach enables us to create a dependency between related changes for the DW/DSS solution so that the delivery of changes to higher environments is a tightly coupled package rather than isolated code changes.

Automated Tracking and Storage Tools

Managing the amount and variety of source code component and project deliverables for a project of the size and complexity of the DW\DSS project requires the use of software tools. We understand BMS has serious concerns with confirming that the source code is only released to the production environment after broad testing and BMS approval.

Deloitte will help alleviate this concern by using Microsoft's integrated Visual SourceSafe (VSS) software which will help manage the tracking, versioning and deploying of software and other project deliverables. Additionally Deloitte commonly uses tools such as Rational **ClearCase** to work with VSS to manage complex configurations and will use that tool or equivalent to manage the variety of objects required to effectively manage the quality of movements between environments. Deloitte agrees that BMS retains ownership of all data, procedures, programs and all materials gathered or developed under the contract with West Virginia, that source code will be held in escrow with a third-party agent acceptable to the State and that BMS holds a perpetual license for all system components upon termination of the Vendor's contract.

Below we detail the **Team Build** features of VSS which will allow the Deloitte team to manage the software build process:

- **Build Definition.** Provides an interface that lets the user define the build steps and build parameters needed for the user's builds. The builds can be defined to be on-demand, rolling, or continuous integration where each check-in causes a build to be queued according to its priority.
- **Build Queue.** Provides a queue for the requested builds. Each build has an associated priority and the builds are built in accordance to the priority and the date/time position in the queue.
- **Build Execution.** Leverages the build definition to build the product and generate build outputs. It runs the build steps, including the execution of test code; it updates work items; and it calculates the build metrics.
- **Build Report.** Provides a view into the execution of the build. The report lists the overall build status including detailed build steps; work items resolved, code changes, and summary of test execution.

Check-out Procedures

In VSS, a reserved check-out involves locking the CI's to prevent competing changes to the same CI's before the current changes are saved in VSS. On the other hand, unreserved check-outs allow multiple copies of the CI to be simultaneously checked-out requiring a merge to occur at check-in. While reserved check-outs help to maintain the integrity of the CI's, it also slows the development process, whereas unreserved check-outs speed development time at the cost of introducing risk and complexity in merging. A new version of the CI is created during each check-out. A version tree helps to illustrate the history of changes to a CI. Application developers are responsible for checking out CI's from VSS. CI's cannot be checked out of VSS without a VSS activity. The VSS record ties all of the related VSS activities together to provide traceability.

Check-in Procedures

Upon completion of changes to a CI, developers check-in the CI. Checking in the CI will increment the corresponding version number.

Promotion of Components

Deloitte recognizes that coordinating the promotion of various interdependent components of the DW\DSS solution is critical to achieve a complete build. Development activities rarely ever happen in isolation. During the development of the DW\DSS, the development team may need to make changes to java files, jsp files,

database schema, and reference tables. While developers may be ready to test their changes in isolation, for a true integrated test, it is essential for all these components to be ready. Our approach employs industry-leading practices to achieve coordinated promotion of DW\DSS application components. We do this in two steps:

- **Step 1.** VSS activity types are used to package all code and configuration changes for a related change request.

- **Step 2.** VSS baselines create a single build for deployment in multiple test environments.

By packaging all the code, configuration changes and different activity types that are dependent on the change request, we create a dependency between related application changes so that the application code cannot proceed to higher environments without the corresponding configuration or database changes.

Configuration Status Accounting and Auditing

The configuration status accounting is an element of configuration management that consists of recording and reporting the information needed to manage the DW\DSS configuration effectively. This information includes a listing of the accepted configuration identification, the status of proposed changes to the configuration, and the implementation status of accepted changes.

The goal of configuration audits is to confirm that the changes to the configuration items were made according to the Configuration Management Plan. Our proposed configuration management tool (VSS) and our proposed defect tracking tool (ATS) will provide the information required in the configuration verification process.

Functional configuration audit is an examination of test records to confirm that functional characteristics of the system comply with its requirements. The physical configuration audit is an examination conducted to confirm that a configuration item, as built, conforms to the technical documentation that defines it.

These audits will produce a report that will document the deficiencies noted during the audit, as well as recommendations by the auditors for any corrective actions. These reports will be submitted to and reviewed by BMS.

Build and Release Management and Delivery

Build management refers to the action of assembling software components into a workable software system. While version control is at individual file level, build management deals with versions at the software system level. Release management is closely tied to build management. Release management is the process of moving a version of build into a higher environment.

Release promotions include development environment to testing, and finally to the production and training environments for DW\DSS project. Deloitte's Configuration Management Plan will provide meticulous guidelines for the migration activity including the appropriate levels of approval.

Summary

Deloitte will work with BMS to develop the right configuration management solution that fits the project's needs. The true value of the Configuration Management is derived by implementing the right business processes, using the right tools, to create an orderly and well-managed migration of solution components, leading to a successful project implementation of the DW\DSS system. Setting up a structured migration procedure based experience gained from Deloitte's previous engagements leads to effective maintenance of project artifacts. Deloitte will use its experience to help confirm that BMS is satisfied with the configuration management of the DW\DSS project.

3.2.16 System Development and Change Management Methodologies

RFP reference: 3.2.16, System Development and Change Management Methodologies, Page 45

The Vendor should propose an industry standard System Development Methodology (SDM) and an industry standard Change Management Methodology, including a tracking system and process for assessing changes on other standard deliverables, such as Disaster Recovery Plan, existing processes, and other relevant documentation.

The Vendor should describe their proposed SDM, including any differences between its application to a large project and small project, software changes, database changes or metadata changes. The Vendor should describe their standards and methodology for developing and maintaining project and system documentation, including documentation of data source systems.

The Vendor should describe their proposed System Change Management Methodology which would be applied to enhancements, added functions or new requirements, how the change is carried through to existing file structures, data sets, processing logic and reports, and how those changes are validated and documented.

| Task	Deliverable
Developer Metadata Process Design	Metadata Process Design
Develop Master Data Functional Specifications	Master Data Management Functional Specifications
Develop Data Sourcing Approach	Data Sourcing Approach

Change Management Methodology

The core component to keeping the solution at its highest quality is through employing effective software and configuration change control procedures. Deloitte's EIM methodology provides the foundation needed to properly manage changing software and configuration items.

Changes to the code or configuration enter this process through several different routes. The first is via a work task on the work plan. As initial development occurs, work tasks are assigned to the various developers on the project team. As they begin their work, they enter the software change control process. The second route is via an approved change request. Once a change request is approved, its impact is evaluated. If the change impacts the code base or configuration, the work task is created and assigned to a developer who again enters the change control process. The final route is as a result of an identified defect. Once a defect is identified and confirmed as valid, a developer is assigned to fix the defect and once again enter the change control process.
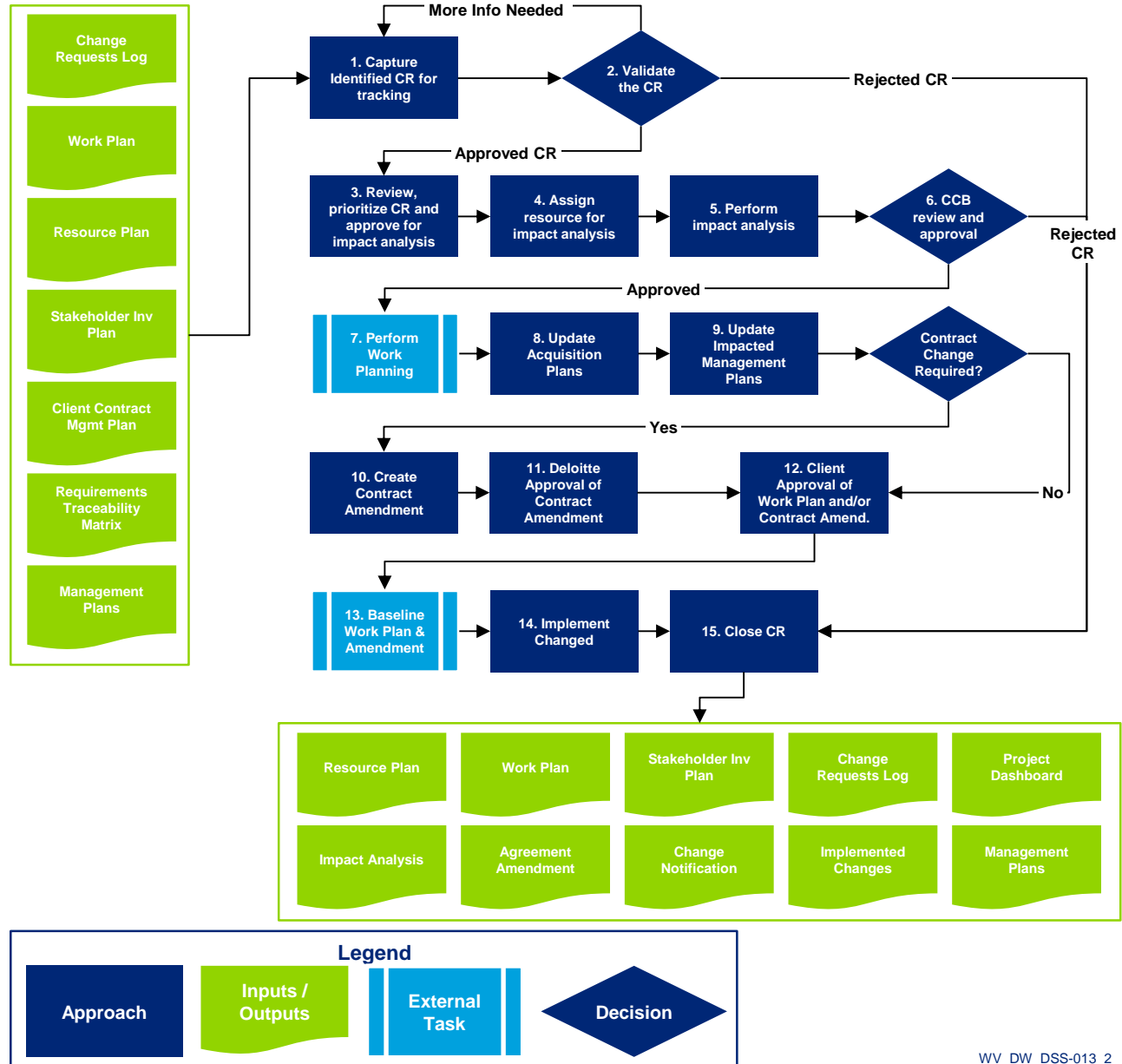
Figure 7-14. Change Management.

Following the formal change control process helps the task of making sure all potential changes are fully documented, analyzed, and implemented. The formal process also takes into account all stakeholders and making them aware of potential changes to the scope of the project. Deloitte and our clients have found this approach to be effective in managing change, maintaining project scope through thoughtful analysis, and considering potential impacts of change requests. This approach has also helped in maintaining awareness of issues related to change and the implications associated with implementing or deferring change for the end users, the development team, and the project schedule and costs.

The high-level steps associated with Deloitte's approach to change control management include:

Change Management Steps	Key Activities
1. Capture Identified CR for tracking	Capture identified change request using the PMC tool.
2. Validate CR	Coordinate appropriate actions within their areas of responsibility to classify, analyze, and define the impact of the request
3. Review, prioritize CR and approve for Impact analysis	Update the entry in the PMC tool with priority and any other necessary review comments.
4. Assign Resource for Impact Analysis	Assign CR to a project team member for impact analysis.
5. Perform Impact Analysis	Determine CR impact on: Project scope, work plan and schedule, and project budget and effort. This impact analysis includes an assessment of changes necessary to other deliverables. Once this is done, update the CR record with the results.
6. CCB Review and Approval	Review the CR impact analysis and approve, reject, defer, or escalate the CR.
7. Perform Work Planning	Plan and re-plan project activities, where necessary.
8. Update Acquisition Plans	Update/reconcile the acquisition plans to align with the work plan.
9. Update Impacted Management Plans	Update the impacted management plans based on the changing project needs.
10. Create Contract Amendment	Determine if the approved CR represents a deviation from the terms of the contract. If a contract change is required, an amendment will be created.
11. Deloitte Approval of Contract Amendment	Agreement Amendment submitted for Deloitte Leadership and Deloitte Legal approval.
12. Client Approval of Work Plan and/or Contract Amendment	Client reviews the work plan and/or contract updates.
13. Baseline Work Plan and Amendment	Re-baseline the updated (and approved) Work Plan and Agreement Amendment (if applicable).
14. Implement Changes	Implementation follows the normal systems development methodology. See next section below for detailed steps and example.
15. Close CR	Update the record in the PMC tool. Communicate the results to all stakeholders.

Change Request Implementation Example

The implementation of a change request will follow the same steps whether it is an added function, enhancement, or new requirement. This process will incorporate all phases of the software development life cycle: Requirements Gathering, Design, Development, Test, and Deployment. An example of a change request that may be necessary for the BMS DW/DSS solution would be inclusion of new source data.

For example, BMS may wish to use data from a new pharmacy available to members. Specific data values that need to be captured could include the member name, drug name, co-pay, and prescriber.

The first step is to identify and validate the source systems. It is known that the data exists, however the exact location, format, and content needs to be confirmed. This step will also determine the requirements for the following phases.

The next steps will design and develop the data transfer, mappings, and reporting. This phase may include new design and development, or updates to existing file structures, data sets, and processing logic. The data will first be extracted to a landing area. A programmatic function will move the data to the landing area at a regular interval. Once the data has entered the landing area, ETL mappings to the data warehouse will load the data. At this time, the data will potentially be summarized and integrated to Cognos. Last, the data will need to be presented in a new or existing report.

All steps of the data transformation will include unit testing to validate the requirements at each phase. The overall requirement will be system tested as well. Additionally, User Acceptance Testing (UAT) will be conducted to confirm that the data contents and format conform to the requirements.

Other deliverables, such as system documentation, may be impacted by the change request. These items will have been identified during the Impact Assessment step. Throughout the Implementation step, these deliverables will be updated as necessary. For example, during the design phase a previously submitted functional design may need to be modified. When the initial updates have been made, the design will be submitted to BMS for approval. If BMS provides any comments, these will be addressed and the design will be resubmitted. Once the document is approved, the status will be updated in the PMC tool.

Change Request Tracking Tool

The Project Management Center (PMC) will be used for the Change Management System. Using this tool will provide an efficient system to:

- Catalog the documented change requests and paperwork

- Track the requests through the system

- Determine the required approval levels for varying changes

- Support the integrated change control policies of the project

3.2.17 Quality Management Plan

RFP reference: 3.2.17, Quality Management Plan, Page 45

The Vendor should propose a Quality Management Plan which demonstrates a proactive mind-set towards analyzing and assessing the quality and accuracy of data and performance and which incorporates a formal quality management methodology. The Vendor should describe in detail their quality assurance process of checking to ensure that the warehouse, their related services, and deliverables are developed to meet all specified RFP requirements, and that data is accurate at implementation and on an ongoing basis. The plan and methodology should include checklists, metrics and tools the Vendor plans to use to measure and assess the quality and accuracy of their performance of day-to-day operations responsibilities and how the Vendor plans to correct any deficiencies. The quality measurement process applies to plans and documents, programs, operational functions, and data and reports. Content of the Quality Management Plan should address:

1. Requirements adherence,
2. SLA and KPI adherence, with a comprehensive section focused on Data Quality,
3. Data warehouse project documentation,
4. Source systems documentation,
5. Business intelligence and data warehouse documentation,
6. End-user training,
7. End-user support,
8. Performance monitoring, and
9. Change control management.

Deliverable

3.2.17.1 A Quality Management Plan within ten (10) calendar days of contract startup.

We believe that quality is not a step in the process, rather it is ingrained throughout the project life cycle. Deloitte places a high value on quality of our delivery and to support ongoing monitoring and support. Quality management is an ongoing process that begins before the initial project planning spanning the entire project system development life cycle to fruition.

Quality is first and foremost the responsibility of project team members and project leadership. The quality management plan incorporates Deloitte's quality standards and processes in addition to client quality standards. Deloitte quality standards define the mechanisms and event triggers for the various quality management and monitoring processes, typical triggers include completing milestones.

To provide Bureau of Medical Services (BMS) with the highest level of services for the WV DW/DSS, Deloitte will employ a Quality Assurance framework , ████████████████████████, that is comprised of supporting processes, procedures, and metrics. This framework allows us to deploy a consistent approach to controlling and improving the quality of deliverables and reducing project/program risk. Our quality management processes help to confirm that the project satisfies and meets the necessary standards of all constituents. This methodology is executed through our Quality Management Plan (QMP), which documents how we meet, comply with, and continually monitor, the quality standards established in the project start-up activities.

Key factors for Quality Management

- Early Definition of Expectations and Specifications of Deliverables and Work Products
- Informal and Formal Reviews and frequent Deliverable Communication
- The Right Balance of Input between Internal and External Stakeholders
- An Objective Evaluation of Project Progress in order to Adjust and Improve

Deloitte's commitment to quality management and continuous improvement is demonstrated by our CMMI Maturity Level 3-assessed processes, our adoption and application of Project Management Institute (PMI) effective practices embodied in the Project Management Body of Knowledge (PMBOK), our adherence to the guiding principles of continuous quality improvement, and our proven experience with stakeholder management and governance. Deloitte will provide a formal Quality Management Plan within 10 calendar days of contract execution that includes a methodology and process for sampling, auditing and continuous quality improvement and which reflects that the Vendor is responsible for the quality of the data and the reports created from that data

Approach to Quality Management

Our Quality Management process uses a combination of internal and external Quality Management reviews. Internal reviews are conducted by the QRM Manager, with the support of the Project's Team Leaders, and focused on deliverable completeness and conformance to standards; answering the question of "Are we doing things right?"
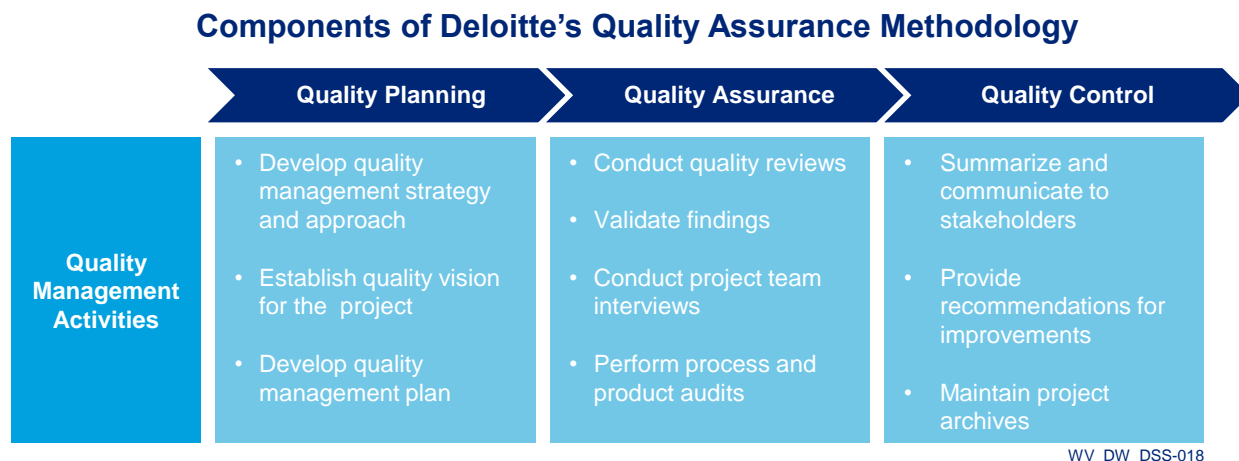
External reviews are conducted by third party reviewers. These reviews will be focused on completeness of the overall project and designed to answer the question *"Are we doing the right things?"* The Quality Management Plan (QMP) is the backbone of the Quality Management Process. The QMP is a living document through the course of a project and serves as a central repository for quality management information. The QMP is also used as a tool to define stakeholder expectations and set appropriate policies and procedures at the beginning of the project.

The quality management procedures will be embedded in our DW/DSS project deliverable process so that BMS can be confident that the right resources and focus is being put on this important aspect of the WV DW/DSS project. Our dedicated quality assurance team will work closely with and assist DW/DSS project management during the course of the project.

The figure that follows provides a graphical representation of the quality assurance approach that will be used to maintain project quality. Quality assurance activities include an independent internal review of deliverables, processes, and services to maintain quality, in relation to the reviews, standards, metrics, checklists, data repositories, and reports that will be utilized.

Components of Deloitte's Quality Assurance Methodology

	Quality Planning	Quality Assurance	Quality Control
Quality Management Activities	• Develop quality management strategy and approach • Establish quality vision for the project • Develop quality management plan	• Conduct quality reviews • Validate findings • Conduct project team interviews • Perform process and product audits	• Summarize and communicate to stakeholders • Provide recommendations for improvements • Maintain project archives

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Figure 7-15. Key Components of Deloitte's Quality Assurance Methodology.

The Quality planning stage, as shown in the Figure 7-15, identifies each of the quality assurance activities. In a similar manner, subsequent stages including the quality assurance stage defines actions that will be performed by project team members within each deliverable, process, or service. The results from QA activities performed along with the measurement data collected in the quality assurance stage, are analyzed in the Quality control stage, where the results are used to proactively and efficiently control the quality of subsequent deliverables, processes, or services.

Quality Planning

Quality Planning. Quality planning confirms an active effort to monitor and control project quality in order to achieve a high level of customer satisfaction. Planning activities will be conducted for each deliverable, process, or service throughout the project life cycle. The following table lists inputs and outputs of the quality planning stage.

Plan Stage Inputs	Plan Stage Outputs
Project Governing Materials. The requirements from the BMS procurement process (e.g., ITN, questions and answers, clarifying information) and the specifics listed within this proposal provide the details of the WV DW/DSS project's deliverables, processes, or services	**Project Team Member Assignments.** Project team member efforts will be assigned to specific deliverables, processes, or services in alignment with the independent review functions previously stated.
Project Schedule. The project schedule provides a timeline of the tasks that will be performed during the project, including QA activities for deliverables, processes, and software	**Specific QA Activities.** The specific QA activities access the quality of, and recommend quality improvements to specific WV DW/DSS Project deliverables, processes, or services. Instructions and any checklists needed to perform each specific QA activity will be included within the related activity documentation.
Project Standards. **Project specific standards for deliverables, processes, and services used in the project**	**Project Schedule Revisions.** Revisions to the project schedule will be made to reflect the specific QA activities, if necessary.

Plan Stage Inputs	Plan Stage Outputs
Feedback or QA Process Improvements. Formal and informal feedback from BMS about the quality of Deloitte deliverables processes, software, or improvements in the QA process arising from such QA process activities.	**Quality Management Plan Document.** Definitions that describe the base measures that will be collected and how those base measures will be used within the quality assurance process are documented here for specific deliverables, processes, or services.

Based on industry-wide quality control best practices and specific requirements outlined in the RFP, we will define the appropriate quality measurements and standards and then communicate these to relevant BMS stakeholders. The quality standards, quality assurance approach and activities and quality control approach and activities will be documented in the QMP.

As part of the QMP Deloitte will address how each deliverable and activity is effectively managed to the highest quality and follow our quality management process. Included within this plan and subsequent activities is the management of

1. Requirements adherence

2. SLA and KPI adherence, with a comprehensive section focused on Data Quality

3. Data warehouse project documentation

4. Source systems documentation

5. Business intelligence and data warehouse documentation

6. End-user training

7. End-user support

8. Performance monitoring

9. Change control management

This section provides description of information contained within deliverables associated with Quality management.

- **Quality Management Plan.** A quality management plan will be submitted to BMS as stated within the RFP requirements. The plan will be updated as needed following changes to the quality management process.

Quality Management Deliverable	
Deliverable Structure and Content	The Quality Management Plan documents the quality requirements and standards - key components, resources, tools, and events that will be employed to maintain quality through the life of the WV DW/DSS project.
Tools Used	Microsoft Word, Excel and Project
Timeline	Initial Quality Management Plan(QMP) within ten (10) calendar days of contract startup

- **Metrics for Deliverable, Process, and Service Reviews.** A table and subsequent description which provides some examples of quality assurance metrics and related activities, organized by quality assurance categories.

Deliverable, Process, and Service Metrics

QA Category	QA sub-category	QA Measure	Project Phase
Deliverable	Deliverable Timeline	Timeliness of deliverables: Compares planned versus actual deliverable date	All phases of the project
	Requirements	Requirements Mapping: Verifies that all requirements are addressed	All phases of the project
	Standards	Standard Adherence Measure: Verifies adherence to documentation and design standards.	All phases before submission of the deliverable
	Deliverable Content	Deliverable (Content) Quality Verify all comments from the review comment log are addressed	All Phases of the project when comments are received

Measures and Metrics for Project Management

QA Category	QA sub-category	QA Measure	Project Phase
Management Process	Milestone Performance	Milestone Dates: Conformance to defined start and end dates of planned activities or events	All phases of the project Measured biweekly
	Issue Management	Problem Report Status: Measures total problems compared to the number resolved	Weekly during testing
	Development Status Reporting	Test Status: Comparison of test cases executed to number of passed test cases	Weekly throughout development and testing phases
	Change Control	Verify new requirements are addressed through appropriate channels as defined in the project plan	After Requirements Definition throughout subsequent phases

Measurement Metrics for SDLC Activities

QA Category	QA sub-category	QA Measure	Project Phase
Scope of Services	Requirements	Measure of change in requirements scope(requirements added, modified, deleted) and its impact on functionality	Requirements Definition and subsequent phases
	System Functionality	Number of defects; Average age of defects; Category of defect	Testing
	Maintenance	Maintenance Activities: Refresh windows for ETL load, database upgrades	Post-Go-Live (frequency will be biweekly status reports) Completion of each maintenance action
	Audits	Process Audit Findings: Measures consistency in implementing defined processes	Testing
	Rework	Measures number of defect injections post testing phase.	Post UAT Testing

Measurement metrics for services

QA Category	QA sub-category	QA Measure	Project Phase
Services	Maintenance and support	Service Level Agreement (SLA) Compliance	Post-Go-Live (frequency will be monthly status reports)
		Schedule Adherence Measure	End of each phase
Training	Training Evaluation	Training Effectiveness	Final Preparation Training Delivery
		User Satisfaction	Post Go-Live

Quality Assurance

Quality Assurance stage is intended to evaluate each Deloitte deliverable, process, or service so that the system quality objectives of the WV DW/DSS project are met.

As work products are developed on a continual basis, we confirm that they are effectively monitored for project conformance based on the processes outlined by management and included in the QMP. We evaluate project performance against customer expectations to make certain that it meets/exceeds quality standards developed during the planning process.

One method used in the Quality Assurance process is to use standard checklists to validate that the deliverables meet expectations. Checklists are also used to mark the end of a project stage and to validate all processes within that stage have completed within quality standards. Routine quality peer reviews will be conducted by team members to confirm that work products meet BMS contract requirements and include leading best practices and industry standards.

Figure 7-16. Sample Quality Assurance Checklist Document.

Throughout the entire project a rigorous planning, testing and validation program will be implemented governing the infrastructure, hardware, communications and software components. For each component a test plan and performance criteria will be devised, the test will be executed by test teams, validated against the acceptance criteria and documented. The following table lists key inputs and outputs of the quality assurance stage.

Quality Assurance Stage Inputs	Quality Assurance Stage Outputs
Standards, Processes and Policies. Process definitions, design standards, and adherence measurement policies outlined in the Quality Management Plan	**QA Activity Results.** QA results in the form of comments, annotated copies of QA checklists, test case results or other means appropriate to the evaluation of the deliverable, process, or service
Quality Assurance Checklist. A comprehensive Quality Assurance checklist detailing expected quality standards for every component/thread of the project.	**QA Discrepancy.** Defects in deliverables, or services, deviations from established project processes, or deficiencies in established project processes are examples of QA discrepancies
Specific QA activities. The specific QA activities such as test execution, defect tracking, document review that need to be carried out in the execute stage.	**Documentation of QA Records.** At the end of the life cycle of a deliverable, process, or service, the QA team collects the measurement records retained during the project life cycle

Quality Control

Controlling quality consists of analyzing the results of QA activities, formulating and analyzing measurements from reported base measures, and making recommendations to improve quality based on analyzed results.

Ongoing quality control refers to the routine monitoring and documentation of project outcomes in order to identify quality issues and determine the steps we must undertake to eliminate or mitigate unsatisfactory results. All tests and outcomes used in the certifications of software and hardware will be tracked which will support our quality control process and will use metrics defined in the QMP as our baseline against which our performance will be measured. Inputs and outputs of the control stage are provided in the table that follows.

Control Stage Inputs	Control Stage Outputs
Quality Activity Results. Results of measurements and tests from the execute stage	**Quality Improvement Recommendations.** Quality improvement recommendations to correct discrepancies (deliverable, product, or service defects, along with process deviations or deficiencies) or to otherwise improve a deliverable, process, or service
QA Discrepancy Reports. Defects in deliverables, or services, deviations from established project processes	**Remediation of QA Results.** QA functions that provide results that fall outside of acceptable ranges will be brought to the attention of Project Management. Our QA Manager will work with Project Management to properly identify and categorize procedural improvements, risks or issues. Project Management, will then follow-up with the appropriate project owner, and likewise with the appropriate members of BMS.
QA Measurement Records. Comprehensive documentation of deliverable, process, or service	**QA Readiness Recommendations.** Recommendations about the readiness of deliverables or software for official submission to BMS.

Roles and Responsibilities

This section defines the roles and responsibilities required for quality assurance activities, and identify the individuals who will perform, review, approve, and support the quality assurance activities.

Roles	Responsibilities

Project team members	• Support quality processes within the project
	• Execute ongoing quality control (i.e., self-reviews)
	• Execute peer review quality activities in the aspects of the project related to
	  − Process execution on the project
	  − Deliverable development
	  − Code development and testing
	• Participate in the quality issue resolution activities, as directed by the QA Manager

Project manager	• Supports the quality processes within the project and fosters a quality-focused environment • Participates in the quality issue resolution activities, as directed by the QA Manager • Confirms that ongoing quality control takes place • Performs in-depth reviews of key deliverables as appropriate
QA manager	• Accountable for helping to ensure that the project's quality assurance activities are being conducted in accordance with the quality management plan • Responsible for executing QA activities related to gathering and reporting on quality measures and metrics in accordance with the DW/DSS quality management plan • Identifies quality issues and serves as the lead in Deloitte quality issue resolution meetings • Schedules and monitors the results of quality reviews within the Deloitte project team • Forwards Quality Assurance feedback to the Deloitte deliverable owner, the Project Management team members, and to the Deloitte team as a whole • Facilitates quality improvement together with project manager • Coordinates quality review sign-offs

Data Quality Management

Deloitte recognizes that Data Quality Management, a component of Quality management, is critical to the BMS DW/DSS project. BMS requires an effective approach to data quality management, encompassing accuracy, integrity, cleanliness, completeness and consistency of data. This is a foundational component of the overall program. This section will serve as a guide for current and future implementation phases to conduct profiling and analysis of data sources to determine their usability for inclusion within the data warehouse .

Data Quality Management is the capability to provide governance, ownership, quality and integrity of data that satisfies the business functions and technical requirements of the enterprise. Data Quality is typically measured in terms of accuracy, consistency, relevance, integrity, accessibility and serviceability. It is absolutely critical to monitor and track the quality of data being processed within the Data Warehouse.

Data quality management is a component of the overall Quality management thread that serves to oversee and administer data quality across the different work streams on the WV DW/DSS project. This section provides information on Deloitte's data quality framework that outlines the expectations of the process, technology, roles and responsibilities necessary to meet and exceed the data quality goals.

Deloitte will provide a detailed Reconciliation Plan within 45 calendar days of contract execution, which is reconciled to financial control totals, that includes processes to automatically maintain data integrity and verify/reconcile data against the source systems, including payment data, and accounts for discrepancies.
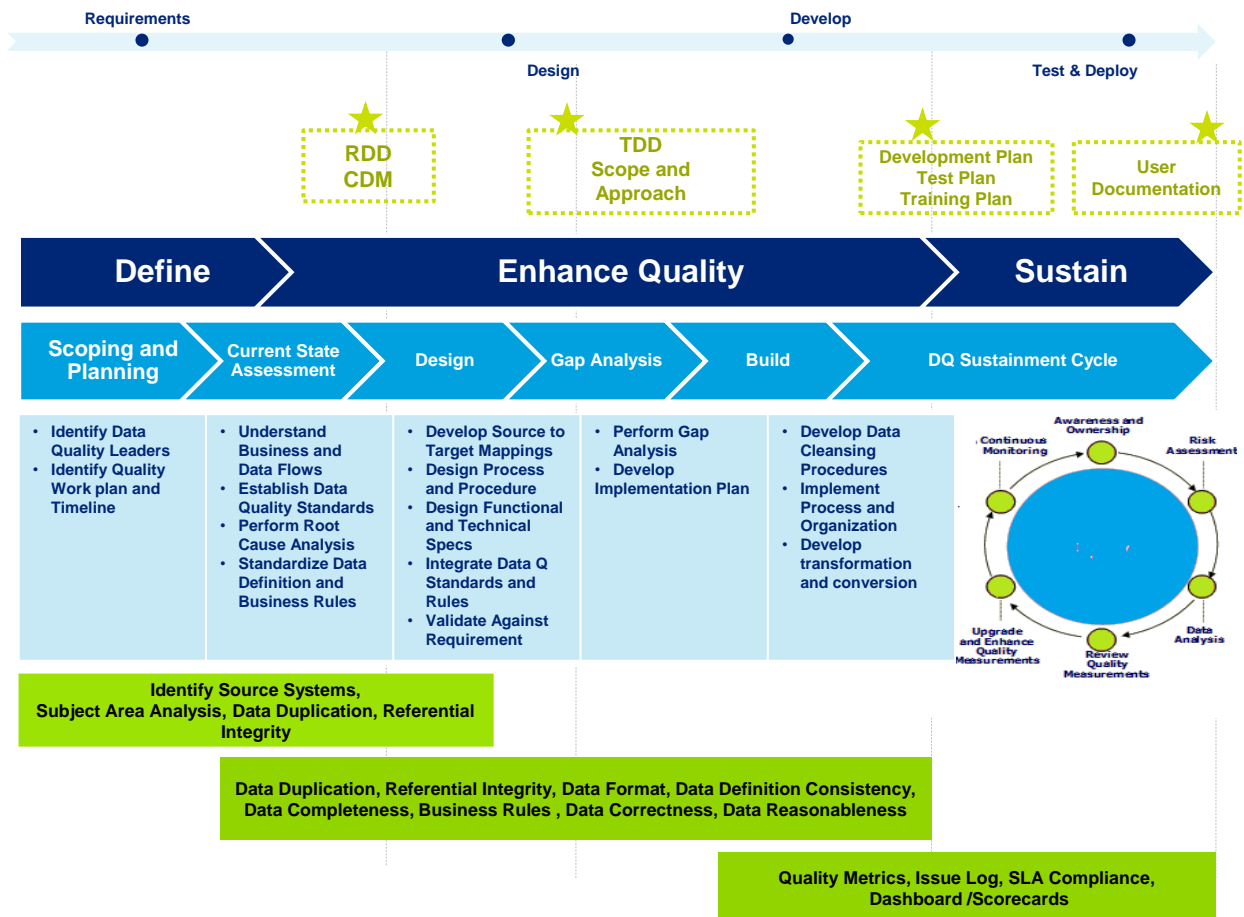
Data Quality Approach

Data Quality can be broadly defined as the ability of data to satisfy the stated business, system, and technical requirements of an organization. Data Quality is typically measured in terms of completeness, timeliness, accuracy and consistency.

The overarching goal of data quality is to confirm that data are fit for their intended uses in operations, decision making and planning. This implies that quality does not necessarily mean "zero defect", and is especially true for data quality. Data quality is not an end-state, but rather an ongoing process as seen in Figure 7-17. Discipline around process, technology and people are required to promote the highest levels of data quality. A fundamental principle of quality management is to detect and fix defects as close to the source as possible, so that data conforms to expected quality levels at implementation. Once the source of the defect has been identified, preventive measures will be implemented. Although defect prevention programs may require substantial investments, prevention is the least costly response to defects.

Deloitte's data quality approach serves to comply with the following best practices with respect to Data Quality Management.

- **Profile Data More Deeply and More Often.** Up front, this yields better planning and fewer errors down the road. When possible, profiling tools will be used for better productivity.

- **Find Solutions in Software Tools, Plus Adjustments to Business Processes.** Look to data-quality tools for invaluable automation of defect correction, matching, standardization, and appending. Also look for improvements in how end users handle data via applications, since this is where most data defects arise.

- **Establish Both Proactive and Reactive Processes for Data Quality.** Proactively seek out problems and opportunities with respect to identified data quality issues.

- **Emphasize Data Compliance.** The accuracy and completeness of regulatory reports or datasets is critical. This can be adhered to by defining a comprehensive business rule set in consultation with business Subject Matter Experts.

- **Recognize That Any Project Touching Data Will Reveal Data-Quality Issues and Opportunities.** This includes business and technology initiatives like business intelligence, customer relationship management, data integration and in-flight MDW system change projects. When designing or revising projects, include staff and project time devoted to assessing and acting on data quality.

Aligned with this approach, Deloitte's Data Quality Framework provided as a part of the Quality Management Plan is a guideline of elements required within the Data Quality Management Program for the WV DW/DSS. As shown in Figure 7-17 it defines the people, process, technology and governance aspects of Data Quality activities in detail, as they apply to individual components on the project. It provides the foundation for building, transforming, and sustaining data quality throughout the data life cycle.

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Figure 7-17. Data Quality Framework.

The primary drivers behind the development of this approach are:

- The need to have a method of formalizing measurement of conformance to data quality standards.

- To provide the ability to baseline the levels of data quality and provide a mechanism to identify as well as analyze the root causes of data issues.

- To provide the ability to effectively establish and communicate to the data user and business community the level of confidence they should have in their data, which necessitates a means for measuring, monitoring, and tracking data quality.

The framework consists of three main stages - Define, Enhance and Sustain. The Define stage specifies aspects that are concerned with defining the foundational elements as well as putting in place the operational structure. The Enhance Quality stage describes the implementation of the quality strategy identified and outlined in the Define stage. It consists of the Current-state Assessment, Gap Analysis, Design and Build and Test sub-stages. The Sustain stage of the framework highlights areas that need to be iteratively considered in order to sustain the Data Quality Management Program. Decisions made in the Enhancement stage need to be re-visited to adapt to a changing business. It is important that there be awareness and appropriate assignment of ownership of Data Quality issues.

3.2.20 Operations Management Manual

Vendors should propose an Operations Management Manual for the operational support of the DW/DSS.

Components of this manual should include:

- Operations Plans – inclusive of, but not limited to:
    - Resource and Staffing Plan,
    - Configuration Management Plan,
    - Document Management Plan,
    - Data Retention and Archive Plan,
    - Quality Management Plan,
    - Security, Privacy and Confidentiality Plan,
    - Business Continuity Plan (including Failover, Backup/Recovery and Disaster Recovery), and
    - Data Reconciliation Plan.
- Operations Management Plan, including plans associated with SLA compliance, and
- Operations Controls, Monitoring and Reports.

The Operations Management Manual should include all standards (including Service Level Agreements and Key Performance Indicators), policies and procedures for operating the DW/DSS and all DW/DSS components.

Deliverable

- 3.2.20.1 An Operations Management Manual within forty-five (45) calendar days of contract startup.

Deloitte proposes to create and deliver within forty-five (45) calendar days of contract start-up an Operations Management Manual. The manual will be structured in three major sections: Operations Plans; Operations Management Plan; and, Operations Controls, Monitoring and Reporting Procedures. The table below elaborates on the specific content of each section.

Section	Proposed Content
Operations Plans	
Resource and Staffing Plan,	The resource and staffing plan will be composed of three major sections (in addition please see our response to Section 3.2.3 Project Staffing for our proposed resources and staffing):
	• **Organization Structure** illustrating the management structure, reporting relationships and interfaces between the Deloitte team, the State and the major stakeholders.
	• **Roles and Responsibilities** of each role in the organization chart in the form of RACI chart which will inventory the individual activities to be performed, the work products that are planned to result from these activities and the decision rights that are associated with the role. Where appropriate the key contacts dependencies within the team and with the State or the major end user groups will also be defined to provide context for the role.
	• **Staffing Plan** specifically a schedule of the planned roll-on and roll-off of personnel and the knowledge transfer activities that are planned to enable new staff, existing team members or members of the State team to continue to perform the roles and responsibilities assigned to the position. As outlined below we will report on changes in personnel on a regular basis.
Configuration Management Plan	The configuration management plan will be composed of seven major sections (in addition, please see our response to Section 3.2.15 Configuration Management Methodology):
	• **Roles and Responsibilities** for the team members engaged in managing configuration items (CI), maintaining them as changes are made to the system, and accounting for an auditing the accuracy of CIs overtime.
	• **System Characterization** including a description of the known CIs that exist at the time of the implementation of the system for the solution software and hardware, RICE-W items, documentation, data, and user groups.
	• **Configuration Item Definition and Baseline** specifically the functional CI baseline which includes all of the system specifications and standards, testing, QC, change management plans and training plans; the allocated baseline of detailed architectural and physical specifications and configurations, conversion plans, process flows and diagrams and training materials; and the product baseline which is unique to each release of software being developed and potentially promoted into the production environment.

Section	Proposed Content
Operations Plans	
	• **Configuration Management Process,** specifically the work steps required from the time a change or enhancement to the production is requested to the time the change is promoted to production with specific emphasis on how each CI baseline is revised and updated once the change is made final.
	• **Controlling and Corrective Action Processes** to manage the revision of the configuration items held for the production system. The controlling procedures will include a discussion of naming standards for CIs, and management of software development libraries.
	• **Configuration Management Records** including the development and maintenance of repositories for change and enhancement requests, releases, data, reporting, and quality control and audit results.
	• **Configuration Management Responsibilities of the Change Management Board.**
Document Management Plan	The document management plan will describe the repository to be created to manage the limited number of document types not already included as CIs in the configuration management plan. The plan will describe the logical organization of the repository, the document scope, document naming convention, and controls on authoring, versioning and rendering outside of the repository. Typically the documents included in the scope of document management are related to the recurring project management monitoring and reporting activities (e.g., status reporting, meeting minutes).
Data Retention and Archive Plan	The Data Retention and Archive Plan will address requirements for how current data must be in the event a failure occurs and data must be recovered along with the time requirements for recovering from a failure. The plan identifies the most cost-effective approach to archiving and data retention. The plan identifies the safest location for data archival and data destruction complies to all legal and regulatory rules.
Quality Management Plan	The quality management plan will be composed of five major components (in addition, please see our response to Section 3.2.17 Quality Management Plan):
	• **Roles and Responsibilities** of the team members and the State (or its agent) in the planning, management, and control of quality as it relates to the development of specific deliverables and the delivery of service on a recurring basis as part of the maintenance and support of the system and users.
	• **Scope of Quality Management** specifically the governance framework, processes and procedures, documentation, and areas for designated for quality management and control including project management and scheduling, resource management and scheduling, change control and configuration management, software development and maintenance, hardware maintenance, data management and maintenance, security, privacy and confidentiality including ongoing adherence to industry, State and Federal standards (as applicable).
	• **Quality Management Approach and Standards** including the recurring review of quality, the audit approach and development of findings, review with the State, and the plan for remediation of agreed upon areas for improvement or correction.
	• **Surveillance Plan** specifically the schedule of quality reviews by area of project activity, the audit program (i.e. control points, questions, evidentiary standards) to be used to review each area, and the party responsible for the review.
	• **Remediation Approach** specifically, by audit finding, the approach to be used by the project team to cure the quality weakness and demonstrate that quality has been restored and the schedule on which this is to be completed.

Section	Proposed Content
Operations Plans	
Security, Privacy and Confidentiality Plan	The security, privacy and confidentiality plan will be composed of 7 major components (in addition, please see our response to Section 3.2.18 Security, Privacy and Confidentiality Plan): • **System Environment,** specifically a discussion of physical and logical architecture of the network, application and database, interfaces, data and physical environment used by the system and the major user groups with access to the system. • **Applicable Laws, Regulations and Standards** that define the security requirements for the system and the recurring certification and accreditation activities that must be undertaken to maintain the recognized security and integrity of the solution. • **Information Sensitivity and System Criticality** specifically the levels of confidentiality, integrity and availability to be provided for each tier of the system and the various types of data accessed, held within, or created by the system. • **Management Controls,** Planning and Security Assessment Procedures for the physical and logical environments, data, physical media, and personnel Including the tools, hardware and software used to create the security architecture. • **Operational Controls** including awareness and training procedures; policies, procedures and protocols, integration of security into the change and configuration management procedures, and contingency and disaster/business continuity procedures. • **Technical Controls** including procedures for access, identification and authentication of support staff, users, the State and other stakeholders and procedures and infrastructure in place to secure communications and the system itself. • **Monitoring and Response** including the policies and procedures to used to monitor the integrity of the data warehouse solution and the activities to be executed in cases where security has been compromised. This section will clearly delineate the responsibilities of Deloitte, the State, the BMS, its users and vendors in cases of a security breach.
Business Continuity Plan (including Failover, Backup/Recovery and Disaster Recovery)	The operations plan for disaster recovery and business continuity (please see our response to Question 3.2.19) will be composed of six major sections: • **Concept of Operations** in which we will describe the system (software, hardware, solution architecture, vendor maintenance agreements, dependent State systems and infrastructure, key State contacts and communications/escalation procedures) to be maintained in the event of a declared disaster; • **User Communities** (major user groups, key user contact information, required system functionality, specific security and system access concerns) to be maintained in the event of a declared disaster; • **Planning Principles** used in developing the disaster recovery and business continuity plan including back-up methods employed; the alternate site (location, physical and logical infrastructure available, physical and logical controls and security in place, and an inventory of the hardware and software that are available for use in the event of a declared disaster); • **Notification Phase Activities** to be executed in the event of a disaster including business impact analysis, damage assessment procedures, outage notification procedures and communication methods, plan notification procedures and plan activation procedures as well as key roles and responsibilities and success/escalation plans to be followed in the event one or more key responders are unavailable. • **Recovery Phase Activities** including critical path activities and recovery plans for specific disaster scenarios (e.g., loss of primary site, loss of hardware, loss of data. loss of application or database software). • **Disaster Recovery Planning and Testing Activities** including annual plan updates/refreshes, annual plan testing including key roles and responsibilities, test scenarios, and anticipated test results in terms of restoration time frames and restoration quality/completeness.
Data Reconciliation Plan	The Data Reconciliation Plan includes an approach to validate the correctness, consistency, completeness, format and duplication of data as it migrates from source files to landing area to staging area to data warehouse to reporting environment.
Operations Management Plan	The operations management plan will be structured in 5 major sections: • **Governance, Organization, Roles and Responsibilities** including a discussion of the governance framework within which support services will be delivered, the organization structure and reporting relationships and the key roles and responsibilities (elaborated in the Staffing and Personnel Plan discussed above) for the State, the Deloitte team and major stakeholder groups. • **System Operations** including a discussion of hours of operation and standard maintenance windows when one or more components of the system will be unavailable, system infrastructure hosting and back-up restore, support and maintenance processes and procedures and routine maintenance activities and tools.

Section	Proposed Content
Operations Plans	
	• **Incident Management, Response and Resolution,** and Reactive/Proactive Problem Management for incidents reported by end users and those identified by the Deloitte team as a consequence of its routine maintenance activities.
	• **Disaster Recovery and Business Continuity,** specifically a high-level overview of the process described above with emphasis on the notification and recovery phases and the communications and escalation procedures to be used by the team.
	• **Reporting and Monitoring** as it relates to the achievement of service levels agreements and other performance indicators used to measure the effectiveness and efficiency of system operations.
Controls, Monitoring and Reporting Procedures	We propose to implement and maintain operational controls, monitoring and reporting procedures in four major domains: • **Project Management Indicators.** In this domain we will report on a regular basis (as outlined in our proposed governance structure) on the following key areas of project management: − Issues as they are identified and maintained in an issue log maintained by the project management office. Each issue, as identified, will be documented, assigned an owner, a resolution strategy and, a planned date for resolution. Issues will be reviewed by both Deloitte and the State as a regular consequence of the governance and management of this project ; − Risks as they are identified and maintained in a risk log maintained by the project management office. Each risk, accompanied by a mitigation plan and assessment of the probability of occurrence and impact if it occurred will be reviewed on a regular basis by both Deloitte and the State; and, • **Service Level Agreements and Key Performance Indicators.** On a regular basis we will report on our performance against the service level agreements and key performance indicators. The report will document the performance achieved during the reporting period; the degree to which Deloitte met, exceed or failed to achieve the service levels; and,. In cases where we failed to meet the service levels, our proposed plan to cure the failure and restore performance to a level where service levels will be met in the next reporting period. • **Resources and Staffing.** On a regular basis we will report changes in staffing – either existing staff leaving the project or new staff joining the project and the roles and responsibilities that will be affected by the personnel change. In addition, when staff leave or join the project our reporting will address the specific steps we will undertake to transfer knowledge to other Deloitte staff or State staff as dictated by the position, role and responsibilities affected. Should changes in organization structure be contemplated these changes will be highlighted as a part of this reporting as well. • **Performance against Work Plan.** On a regular basis we will report on three aspects of our performance against the establish work plan: − Tasks Completed in the last weekly or bi-weekly period and the deliverables now available to use; − Tasks Planned for the next weekly or bi-weekly period including a review of the key dependencies that may exist and the specific deliverables (if any) planned to result from these activities; − Overdue Tasks which have either not been started as planned or are estimated to require additional time and/or effort to complete. This reporting item will be accompanied by sufficient documentation to permit management decision making regarding the replanned timeline and/or committed effort to enable the completion of the activities.

3.2.21 Service Level Agreements and Key Performance Indicators

In their proposal the Vendor should describe their understanding of the role that SLAs and KPIs play during Operations through defining and managing the relationship between the Vendor and BMS. The Vendor should propose how it plans to meet the service level requirements presented in Appendix 7 – Service Level Agreements and Key Performance Indicators and describe the monthly report card which is submitted to BMS. The Vendor should also propose its approach to remediating performance by the following month's report card when KPI metrics have not been met.

In this section, we provide our response to key performance expectations. We will discuss specific parameters relating to these expectations, metrics and SLAs during contract negotiations for further clarity and agreement. A correction action report will be produced when the Key Performance Indicator metrics are not achieved to remedy the issue.

Our Proposed DW/DSS Solution Meets Required Performance Expectations

Deloitte is confident in our ability to execute upon the key performance indicators identified in Appendix 7.
███
███████████████████████

Deloitte's Service Level Framework

Managing overall project performance and performance standards is an integral part of our Quality Assurance methodology. ██
██████████████████████████████████ Performance standards are not an afterthought once the system is configured and deployed; rather it is embedded in all phases of the project. For more information regarding our quality assurance methodology, please refer to *Section 3.2.17, Quality Management Plan.* Deloitte brings an established Service Level Framework to implement, maintain, measure, evaluate, report, and revise the performance standards throughout the life of the contract. This process is repeatable; essentially, performance standards measure work performance and promotes continuous improvement, while providing BMS with insight into the quality, efficiency, and timeliness of the overall service delivery. Deloitte's Service Level Framework has been developed as an iterative process that is responsive to service delivery performance, as well as changes in the business and system environment. Our processes provide the ability to effectively report out on performance standards and to provide an early-warning mechanism for potential violations, which allows our team to take proactive actions to resolve issues when required.

Validation of Performance Expectations

During this effort, all parties have an opportunity to articulate their understanding of the identified performance standards and agree upon a common definition. This collaboration is critical for the effective development of performance expectations. It is particularly important as it pertains to system availability metrics as Deloitte recognizes the involvement of the hosting provider in meeting agreed upon performance expectations.

Capturing Performance Standard Baseline Metrics

We propose the use of an initial "characterization phase" during the post-implementation period to baseline agreed upon performance standard metrics pertaining to the system, user support, and reporting. The purpose of the characterization phase is to confirm, revise, and finalize the service levels for applications management. Typically, the characterization phase runs for six months and concludes with the establishment of new or revalidated performance standards for aspects of application support and maintenance activities. After the conclusion of the phase Deloitte reviews the results with BMS and determine if adjustments to the performance standards need to be implemented.

DW/DSS features that Benefit West Virginia BMS

- **A Proven Service Level Framework.** Focuses on continuous IT improvement and business outcome enablement through effective maintenance processes

- **Iterative.** Provides a constant evaluation loop by which we refine and improve the processes and report on performance standards

- **Experience Meeting Similar Performance Requirements.** We bring our experience meeting similar performance requirements in 11 other states to WV

Ongoing Monitoring and Reporting against Performance Expectations

In accordance with RFP requirements, we provide a quality assurance plan which defines how the agreed upon performance expectations (during contract negotiations) will be monitored and achieved. Deloitte provides a monthly performance report to the DW/DSS Project Manager based upon agreed upon performance standards. The following figures represent examples of our performance reports.

Performance Standards Detail - WV/DSS Project – January 2012

System Availability and System Repsonse

System Availability	Target	Acutal	Status		Comments
Up Time Planned hours of Operation	99.80%	98.90%	🟩		
Up Time Planned Off Hours	99.50%	100.00%	🟩		
Test Region Uptime	99.80%	96.78%	🟥		Trouble shooting MS Windows Patch
System Response	**Target**	**Acutal**	**Status**		
Web page Processing Request with out DB access	99.80%	99.90%	🟩		
Seach processing time < 4 seconds	98.00%	97.80%	🟨		JSP bug identified. Currently integration test
Screen Print requests < 3 seconds	98.00%	98.12%	🟩		

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Figure 7-18. Sample Performance Standards Detail Report.
A detailed report that provides insight into the measurement of each of the individual performance standards.

The ongoing monitoring activities drive continuous improvement and innovation. Performance standards are a barometer for success across multiple facets of the project. This process identifies and highlights both areas that are functioning without issue and areas that require attention.

Our Framework emphasizes periodic reviews (Quarterly) to determine their efficacy for accurately measuring performance. We collaborate with BMS to determine what performance standards continue to be accurate and if there are changes required to the goals/targets. Deloitte provides the source data to facilitate the discussion and collaborate with BMS on decisions relating to changes in the framework. This closed loop process encourages continuous improvement as the system and business processes evolve over time.

Corrective Action Report (CAR)

Deloitte understands that failure to perform in accordance with established Key Performance Indicators results in a loss to BMS. Failure to meet the Key Performance Indicators identified in the Service Level Agreements located in Appendix 7 may result in BMS retaining a percentage of the total monthly administrative fee as identified in each SLA and deduct said amounts from the fees due for services satisfactorily performed.

Deloitte acknowledges the importance of producing a CAR to resolve the issues identified during ongoing monitoring of KPI's. Our team will monitor the SLA's and produce the CAR report as shown below to BMS. The CAR will list the KPI, issue description, associated risks to system, resolution and proposed action. Our team will work with BMS and prioritize (Red and Yellow) the CARs and address accordingly.

Corrective Action - WV/DSS Project – January 2012

Red Status Performance Standards:			

Issue Description	Corrective Actions		Due:	Owner
	1			
	2			
	3			
	4			
	5			

Yellow Status Performance Standards:			

Issue Description	Corrective Actions		Due:	Owner
	1			
	2			
	3			
	4			
	5			

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Figure 7-19. Sample Corrective Action Report.

Meeting Your Performance Expectations

In RFP Appendix 7, BMS has set a proposed set of performance expectations for measurement of the vendor's effectiveness. We understand these measurements in principle, and it is our understanding, based on the RFP that these SLAs will be reviewed, clarified and finalized for specifics during contract negotiations.

A. System Availability

Key Performance Indicator – Availability	
Environment	**KPI Metric**
Production – Normal Business Hours	Downtime less than or equal to .5%
Production – Other	Downtime less than or equal to 1%
Failover	Downtime less than or equal to 1%
Test	Downtime less than or equal to 5%
Vendor Network Connectivity	Downtime less than or equal to 1%

System availability during established windows of operation is imperative to smooth operation. Providing a platform with a high level of availability offers users an uninterrupted experience. Deloitte has both an extensive experience as well as an excellent record of accomplishment of implementing reliable systems with around the clock availability. We are aware that given the mission critical nature of BMS, it is essential for the application to be available and up and running during the mutually agreed upon, designated operational window. Deloitte works diligently in collaboration with BMS to promote and adhere to the State's established and mutually agreed upon batch, maintenance, and stability windows. We recognize that application stability is an essential factor to maintaining critical business systems and consistently work with the State to maintain stability while introducing new functionality.

Deloitte monitors system down time on a daily basis and a graphical report is generated to show the actual system availability vs. the performance standard level. We apply system load testing techniques and multiple use-case scenarios in order to identify performance-tuning opportunities prior to system deployment.

This approach identifies areas of risk in the environment and allows the Deloitte team to address any availability risk that may arise.

The following table identifies the System Availability performance standards from Appendix 7 of the RFP. We have identified the performance standard, the calculation of the standard and reporting recommendations to track the performance standard. Upon contract award and project initiation, Deloitte and BMS will meet to fully define each of the performance standards from the RFP, agree upon the calculation of the performance standard and identify the report timeframes for each performance standard.

Performance Standard	Determination/Calculation	Reporting
1. 99.5% availability of the production system during normal business hours as agreed to during negotiations.	**Available hours.** 7 days, 24 hours per day, 365 days per year, excluding scheduled outages. **Calculation.** Total available hours divided by total hours in measurement period based on the measurement criteria; excluding factors outside of Deloitte's control.	Monitor Daily/ Report Monthly
2. 99% availability of the production system during non-business hours as agreed to during negotiations.	**Available hours.** 7 days, 24 hours per day, 365 days per year, excluding scheduled outages. **Calculation.** Total available hours divided by total hours in measurement period based on the measurement criteria; excluding factors outside of Deloitte's control.	Monitor Weekly/ Report Monthly
3. 99% availability of the failover system as agreed to during negotiations.	**Available hours.** 7days, 24 hours per day, 365 days per year, excluding scheduled outages. **Calculation.** Total available hours divided by total hours in measurement period based on the measurement criteria; excluding factors outside of Deloitte's control.	Monitor Daily/ Report Monthly
4. Failover events must be concluded in less than 10 minutes	**Elapsed Time Report.** Measuring the time between detection and resolution of failover event.	Monitor Daily/ Report Monthly
5. 95% availability of the test regions during scheduled times	**Environment Availability Log Report.** Measuring the system availability, downtime and exceptions.	Monitor/Report during testing phase
6. 99% availability of Vendor Network Connectivity	**Available hours.** 7 days, 24 hours per day, 365 days per year, excluding scheduled outages. **Calculation.** Total available hours divided by total hours in measurement period based on the measurement criteria; excluding factors outside of Deloitte's control.	Monitor Daily/ Report Monthly

B. System Performance

Key Performance Indicator – Performance

KPI metric: 95% or more of benchmark query run times are within expected completion times.

Deloitte acknowledges the importance of building quality software product to meet required system performance metrics. During the Design phase, we place an emphasis on performance considerations and scalability. Deloitte understands the need to have solid infrastructure foundation (servers, storage, interconnect, physical database, etc.) to provide unparalleled query response time. Sound infrastructure represents a critical success factor for all analytic products included in the solution. Project success is possible and most likely probable if this fundamental capability exists. However, a sustainable project success will very likely be impossible if a high performing database platform is not delivered. In addition to evaluating a sound infrastructure, during the Development phase we iteratively deploy components of the overall solution to test both functionality and response.

Our rigorous Testing phase creates scenarios that identify potential performance gaps. We test the application in an environment that emulates production giving the team accurate data to evaluate performance. Monitoring the performance of the application during this phase affords us the opportunity to proactively address issues that arise before deployment.

The following table identifies the performance standards from Appendix 7 of the RFP. We have identified the Performance Standard, the calculation of the standard and reporting recommendations to track the performance standard. During contract negotiations, we will work to further clarify and specify each of the Performance Standards from the RFP, agree upon the calculation of the performance standard and identify the report timeframes for each performance standard. We will incorporate the final agreed upon standards in our overall performance standard plan, which would include establishing/modifying benchmark runtimes, critical tables, and schedule for execution of benchmark queries.

Performance Standard	Determination/Calculation	Reporting
1. 95% or more of benchmark query run times are within expected completion times.	The response time of all requests are logged and compared with the established benchmark run times.	Monitor Daily/ Report Monthly

C. Data Quality

Key Performance Indicators - Data Quality
KPI metric: DW/DSS data is reconciled 100% to control totals. Any and all discrepancies are resolved within 10 calendar days of the transfer of the monthly automated DW/DSS tables.
KPI metric: BMS is notified of data quality defects within twenty-four (24) hours of discovery.
KPI metric: Corrections to the database are applied within 24 hours of receipt of instruction from the Bureau.

Deloitte recognizes that criticality of data quality and provides an effective data quality management plan referenced in *Section 3.2.17, Quality Management Plan*. The following table identifies the performance standards from Appendix 7 of the RFP. During contract negotiations, we will work to further clarify and specify each of the Data Quality Standards from the RFP.

Performance Standard	Determination/Calculation	Reporting
1. DW/DSS data is reconciled 100% to control totals. Any and all discrepancies are resolved within 10 calendar days of the transfer of the monthly automated DW/DSS tables.	Compare the monthly control totals used to complete the Quarterly Expenditure Report as executed in the DW/DSS with the control totals produced from the weekly and monthly files produced through the MMIS	Report Monthly
2. Resolution of discrepancies within 10 days	Calculate the number of days between the reconciliation date and resolution date	Report Monthly
3. BMS is notified of data quality defects within twenty-four (24) hours of discovery.	ATS Report identifying the defect discovery date and defect log date	Report Monthly
4. Corrections to the database are applied within 24 hours of receipt of instruction from the Bureau.	ATS Report identifying the defect resolution date and receipt of instruction from the Bureau	Report Monthly

D. Problem Management

Key Performance Indicators – Problem Management
KPI metric: 95% of problems are resolved within the established timeframes.
KPI metric: BMS is notified of 100% of problems within the established timeframes.

Problems are an inevitable part of software development for every project team—large or small. One of the critical success factors to effectively manage maintenance activities across systems is to provide access to all problems and promote transparency within BMS. Deloitte proposes Automated Tracking Tool (ATS) as the tool to manage problems. ATS makes problem tracking personalized and painless, so the team focuses energy on what matters most: a solid production system and user experience. ATS may be customized to categorize the problems into three levels of severity such as Catastrophic, Major and Ordinary. Configure ATS reports to catalog problems, provide customized reports of error logs based on profiles, and configure notification messages. Problems identified in lower environments (i.e., Development or Test) are addressed through the applicable system development life cycle phases. For additional information please refer to *Section 3.2.12, Enhancements and Modifications*.

The following table identifies the performance standards from Appendix 7 of the RFP. During contract negotiations, we will work to further clarify and specify each of the Problem Management Standard from the RFP; agree upon the problem management plan content documenting different problem severity levels, response time by severity levels, communication plan to notify BMS of the problems.

Performance Standard	Determination/Calculation	Reporting
1. 95% of problems are resolved within the established timeframes	ATS Report identifying the problem log date and the problem resolution date	Report Monthly
2. BMS is notified of 100% of problems within the established timeframes	ATS Report identifying the problem discovery date and problem log date	Report Monthly

Deloitte agrees to perform according to approved Service Level Agreements (SLA) and identified Key Performance Indicators (KPIs) with associated metrics in the areas of system availability, performance, data quality, and problem management. Vendor must consent to retainage of a percentage of payment if agreed-upon KPI metrics are not achieved.