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December 2, 2022

The Honorable Ronald D. Kouchi
President of the Senate
and Members of the Senate
Thirty-First State Legislature
State Capitol, Room 409
Honolulu, Hawaiʻi 96813

The Honorable Scott K. Saiki
Speaker and Members of the
House of Representatives
Thirty-First State Legislature
State Capitol, Room 431
Honolulu, Hawaiʻi 96813

Aloha Senate President Kouchi, Speaker Saiki, and Members of the Legislature:

Pursuant to HRS section 27-43.6, which requires the Chief Information Officer to submit applicable independent verification and validation (IV&V) reports to the Legislature within ten days of receiving the report, please find attached the the report received by the Office of Enterprise Technology Services for the State of Hawaiʻi, Department of Accounting and General Services, Enterprise Financial System Project.

In accordance with HRS section 93-16, this report may be viewed electronically at http://ets.hawaii.gov (see "Reports").

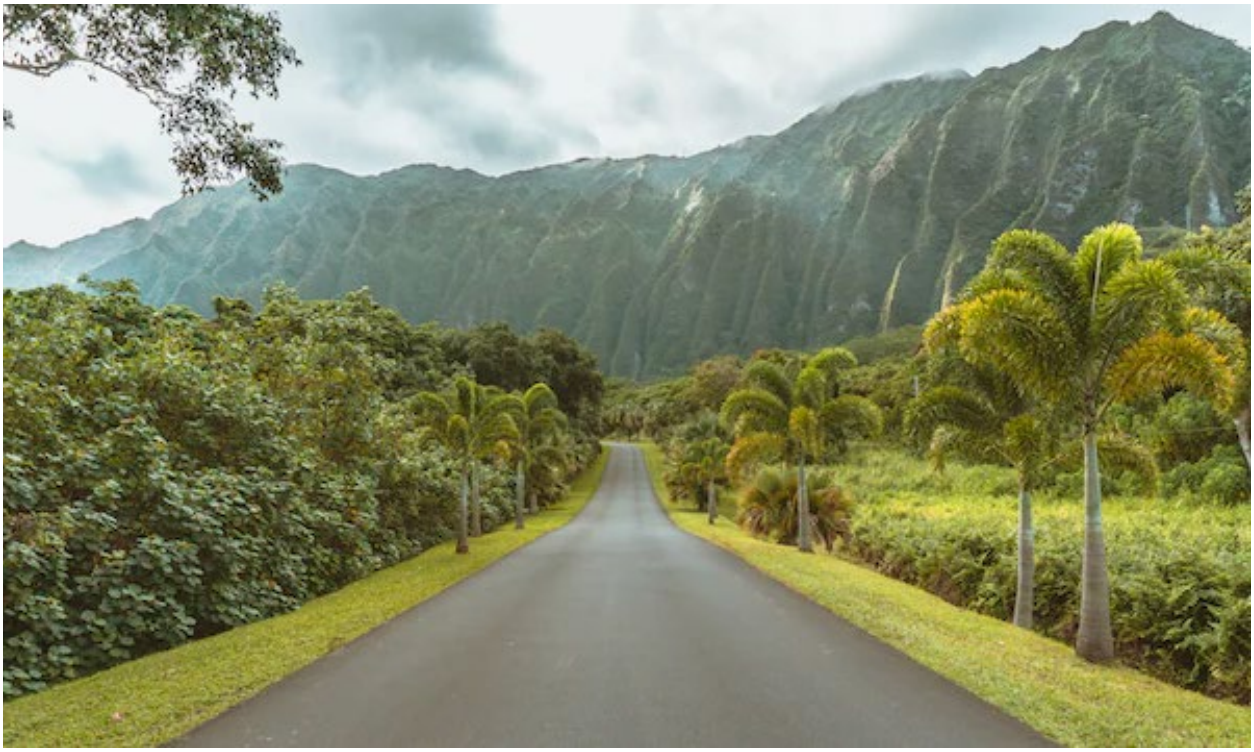
Sincerely,

Douglas Murdock (Dec 2, 2022 15:50 HST)

Douglas Murdock
Chief Information Officer
State of Hawaiʻi

Attachment

BerryDunn



Monthly IV&V Status Report

OF THE

Hawaii Department of Accounting and General Services

Enterprise Financial System Project

November 17, 2022 – For the month of October 2022

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Table of Contents

Table i: Version History of the Plan

Version	Delivered Date	Update Reason
DED1	August 22, 2022	Delivery of Deliverable Expectation Document (DED) by BerryDunn to State of Hawaii for review and feedback
DRAFT	November 7, 2022	Delivery of Draft report by BerryDunn to State of Hawaii for review and feedback
FINAL	November 17, 2022	Delivery of Final report by BerryDunn to State of Hawaii for review and feedback

1.0 Executive Summary

In this section, BerryDunn has provided an overview of the Enterprise Financial System (EFS) Project (EFS Project) and current EFS Project Health Status.

1.1 EFS Project Overview

The EFS Project is designed to modernize and replace many of the State of Hawaii's (State's) financial management systems for executive branch departments. The State is executing a targeted approach to modernizing systems in core enterprise resource planning (ERP) areas. The State separated the large strategic ERP project originally envisioned into transactional pieces to improve the chance of success with each system. To date, the State has modernized human resources, gross-to-net payroll administration and processing, and time and leave management. The EFS Project, representing the finance dimension of ERP, will be the fourth component under this modernization effort.

On November 21, 2021, the State Office of Enterprise Technology Services (ETS) awarded Labyrinth Solutions, Inc. (invenioLSI) the contract for Solicitation RFP-ERP-2020, to implement the proposed system—SAP S/4HANA ERP cloud suite of applications—via a hosted managed service delivery model. The EFS is anticipated to include the following areas:

- Budget/finance
- Accounts payable and purchasing
- Travel and expenses
- Fixed assets
- Project accounting

The State has selected BerryDunn to perform Independent Verification and Validation (IV&V) services, to assist in the State's efforts to identify and reduce risks and issues and implement best practices to help ensure successful implementation of the EFS.

1.2 EFS Project Health Status

Table 1-1 below illustrates the individual health ratings BerryDunn used to rate the EFS Project Critical Components (i.e., key areas of the EFS Project that BerryDunn assessed) and Table 1-2 below illustrates the overall ratings for the EFS Project that BerryDunn used to determine the health of the EFS Project, and their corresponding rating definitions. The overall rating of the EFS Project is reflective of the calculated average of the individual EFS Project Critical Component ratings.

Table 1-1: EFS Project Critical Components Rating Definitions

Rating	Definition
5 – Excellent	No findings were identified by BerryDunn.
4 – Good	One or a few low-severity risk(s)/issue(s), one medium-severity risk/issue, and/or watch list items and/or observations were identified by BerryDunn.
3 – Average	Many low-severity risks/issues, a few medium-severity risks/issues, and/or one high-severity risk/issue was/were identified by BerryDunn and not logged in the EFS Project's risk/issue log and/or lessons learned repository—or have been logged but the plans to address them are not resolving them.
2 – Fair	Many medium-severity risks/issues and/or a few high-severity risks/issues were identified by BerryDunn and not logged in the EFS Project's risk/issue log and/or lessons learned repository—or have been logged but the plans to address them are not resolving them.
1 – Poor	Many medium-severity risks/issues and/or many high-severity risks/issues were identified by BerryDunn and not logged in the EFS Project's risk/issue log and/or lessons learned repository—or have been logged but the plans to address them are not resolving them.

Table 1-2: EFS Project Overall Monthly Status Definition

Rating	Definition
5.0 – 4.5	Excellent health
<4.5 – 4.0	Good health
<4.0 – 3.0	Average health
<3.0 – 2.0	Fair health
<2.0 – 1.0	Poor health

Table 1-3 below shows the health ratings BerryDunn determined for the individual EFS Project Critical Components and overall EFS Project for its initial assessment and this monthly status report. BerryDunn was unable to assess several EFS Project Critical Components because the efforts to be assessed for the correlating Task Items (i.e., specific evaluation criteria for each EFS Project Critical Component—see Appendix A) are not yet underway. As a result, these EFS Project Critical Components are marked with a "N/A" in Table 1-3 below.

Table 1-3: Executive Summary of Health Ratings

EFS Project Critical Components	Initial Rating	First Monthly Rating
EFS Project Management	1	1
Quality Management	3	3
Training	N/A	2
Requirements Management	2	2
Operating Environment	N/A	N/A
Development Environment	N/A	N/A
Software Development	3	3
System and Acceptance Testing	N/A	N/A
Data Management	N/A	N/A
Operations Oversight	N/A	N/A
Overall EFS Project Health Rating (Average of EFS Project Critical Component Ratings):	**2.25**	**2.20**

2.0 EFS Project IV&V Methodology

In this section, BerryDunn has provided details on our EFS Project IV&V Methodology (i.e., EFS Project Critical Components, EFS Project Rating Methodology, and Fact-Finding Process).

2.1 EFS Project Critical Components

BerryDunn has listed the EFS Project Critical Components below:

- EFS Project Management
- Quality Management
- Training
- Requirements Management
- Operating Environment
- Development Environment
- Software Development
- System and Acceptance Testing
- Data Management
- Operations Oversight

These EFS Project Critical Components, as well as their corresponding Task Items and Task Numbers, can be found in Appendix A.

2.2 EFS Project Rating Methodology

In Appendix B, BerryDunn has provided definitions for risk, issue, watch list item, observation, lessons learned perspective, and risk-/issue-related definitions (i.e., impact, probability, and severity), as well as tables defining the:

- Individual health ratings for the EFS Project Critical Components
- Overall health ratings for the EFS Project
- Levels of risk impact
- Levels of risk probability
- Levels of risk severity

- Common attributes for the levels of risk severity
- Common attributes for the levels of issue severity.

2.3 Fact-Finding Process

The subsections below contain descriptions of the fact-finding activities BerryDunn performed as a part of the Monthly Status Report.

2.3.1 Document Review

At the start of this engagement, the State's IV&V Contract Manager granted BerryDunn access to the EFS Project's SharePoint site for viewing EFS Project documentation. BerryDunn reviews EFS Project documents on an ongoing basis to better understand the EFS Project's status and to further inform potential findings and recommendations.

2.3.2 Direct Observation of EFS Project Meetings

BerryDunn attended several of the EFS Project's key recurring meetings to identify findings and potential recommendations for the EFS Project. BerryDunn worked with the EFS Project leadership and BerryDunn's State IV&V Contract Manager to determine the meetings BerryDunn would observe. Below in Table 2-1 is a list of EFS Project meetings BerryDunn observed.

Table 2-1: BerryDunn's Observed Meetings and Related Information

Meeting Date	Meeting Name/Purpose	IV&V Attendee(s)
10/04/2022	EFS Project – Targeted Discussions	Denise Lang
10/05/2022	Executive Briefing for EFS Project	Denise Lang
10/06/2022	System Admin Meeting	Denise Lang
10/06/2022	EFS Team Meeting	Denise Lang
10/07/2022	EFS Project – Targeted Discussions	Jack Kreiser
10/11/2022	EFS Project – Targeted Discussions	Denise Lang
10/12/2022	Risks, Issues, Opportunities, Decisions (RIO-D)	Jack Kreiser
10/12/2022	Project Management Office (PMO) Weekly Meeting	Jack Kreiser
10/13/2022	Development Meeting	Denise Lang
10/14/2022	EFS Project – Targeted Discussions	Jack Kreiser
10/17/2022	PMO Work Plan Review	Denise Lang
10/18/2022	EFS Project – Targeted Discussions	Denise Lang
10/19/2022	OCM (Communications) Meeting	Denise Lang

Meeting Date	Meeting Name/Purpose	IV&V Attendee(s)
10/19/2022	PMO Weekly Meeting	Denise Lang
10/20/2022	System Admin Meeting	Denise Lang
10/20/2022	EFS Team Meeting	Denise Lang
10/21/2022	EFS Project – Targeted Discussions	Denise Lang
10/24/2022	PMO Work Plan Review	Jack Kreiser
10/25/2022	EFS Project – Targeted Discussions	Denise Lang
10/26/2022	RIO-D	Jack Kreiser
10/26/2022	PMO Weekly Meeting	Denise Lang
10/27/2022	Development Meeting	Denise Lang
10/28/2022	EFS Project – Targeted Discussions	Denise Lang
10/28/2022	EFS All Hands	Denise Lang
10/31/2022	PMO Work Plan Review	Jack Kreiser

3.0 Detailed Findings and Recommendations

In this section, BerryDunn has included the findings and recommendations for the risks, issues, observations, watch list items, and lessons learned perspectives (including previously reported findings that remain open) we identified through this month's observed meetings and document review. For each risk and issue identified, BerryDunn provided a severity rating. Please note that observations, watch list items, and lessons learned perspectives do not have correlating severity ratings (see Appendix B for the definitions of these finding terms).

3.1 Updated Risk and Issue Findings and Recommendations

BerryDunn revisited findings from the Initial Assessment Report to determine if risks/issues previously identified by BerryDunn:

- Were closed as resolved by the EFS Project and should be reopened—because their severity has worsened, or impact has manifested in a different way than when BerryDunn first identified them—or if BerryDunn agrees with the State's decision to close the respective risk/issue as resolved
- Were/are being mitigated/remediated by the EFS Project and now have an increased severity or have an impact that has manifested in a different way than when BerryDunn first identified them
- Were and/or are not being mitigated/remediated sufficiently by the EFS Project and are persisting and/or manifesting in a different way

Table 3-1 below details:

- Risks and issues that the State closed, and that BerryDunn agrees with as being resolved
- Risks and issues that the State closed, and that BerryDunn is recommending the State reopen
- Risk and issue refresh findings and correlating recommendations for all open risks/issues

Table 3-1: Updated Risk and Issue Findings and Recommendations

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
Risks/Issues That Are or Are Recommended (by BerryDunn) to be Closed			
(None identified at this time)			
Risks/Issues That Are Open or Are Recommended (by BerryDunn) to be Reopened			
EFS Project Management	**Original Finding:** Key initial EFS Project deliverables have either not been delivered by LSI or have been delivered and not been approved by the State on time. **Severity:** High	**Reference Number:** Issue 28 (IV&V finding added into existing issue) **Status:** In Progress - High	**Updated Finding:** BerryDunn understands invenioLSI submitted all the Project Standards deliverables (e.g., Project Charter, Scope Management Plan, Quality Management Plan) on Monday, October 31, 2022. Furthermore, BerryDunn understands the review and approval process for some of the Project Standards deliverables might involve up to 20 business days for individuals identified on the EFS Project's RACI chart to review, followed by up to an additional 20 business days for the EFS Project Executive Sponsors to review. BerryDunn believes not having these Project Standards deliverables approved will continue to negatively impact the EFS Project, as the crucial direction and guidance these deliverables provide will be further delayed. **Updated Recommendation:** BerryDunn continues to recommend the EFS Project Executive Sponsors and Project Leadership make providing feedback on any gaps in key initial project deliverables and approving remaining deliverables when quality expectations have been met an immediate priority during the Prepare Phase and prior to entering the Explore Phase. To facilitate this process in a timely manner, the EFP Project might consider conducting working sessions with invenioLSI to provide timely and verbal input on the key initial project deliverables and to make edits to

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
			them in real time where appropriate. BerryDunn understands that invenioLSI has documented a process flow for the review/approval process and that the State has worked to assign an owner for coordinating progression of each deliverable through the review/approval process. BerryDunn recommends the State single owner assigned to each deliverable also work with the EFS Project Executive Sponsors to identify additional ways to reduce deliverable review/approval time.
EFS Project Management	**Original Finding:** invenioLSI's deliverables and implementation phases/tasks (and related deadlines/durations) have not yet been confirmed and agreed upon with the State. **Severity:** High	**Reference Number:** Issue 18 (IV&V finding added into existing issue) **Status:** In Progress - High	**Updated Finding:** BerryDunn understands invenioLSI has submitted an updated Deliverable Description Document to the State on Monday, October 31. The EFS Project is currently reviewing the updated Deliverable Description Document confirm whether this deliverable includes sufficient detail on the proposed content of all future deliverables, as the content specific to each deliverable will be included as a DED as part of the EFS Project Executive Sponsors future deliverable review packages (i.e., deliverable along with DED and necessary sign-off forms). BerryDunn also understands the EFS Project is currently working to propose major changes to the implementation phases and timeline. If these proposed changes are approved and agreed upon, the Deliverable Description Document might require further revisions. **Updated Recommendation:** *Please see BerryDunn's recommendation on Reference # Issue 28 in regard to timely completion and approval of Prepare Phase deliverables.*
EFS Project Management	**Original Finding:** The EFS Project's deliverable review	**Reference Number:** Issue 29 (IV&V finding	**Updated Finding:** BerryDunn understands that invenioLSI has documented a process flow for the deliverable review/approval process and that the State has assigned an owner for coordinating

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
	and approval process in not effectively moving deliverables through the approval process. **Severity:** High	added into existing issue) **Status:** In Progress - High	progression of each deliverable through the review/approval process. However, BerryDunn observed there is still not a consensus on the best way to reduce or eliminate feedback loops that delay the review/approval process and is concerned this might continue to delay the EFS Project's progress. **Updated Recommendation:** *Please see BerryDunn's recommendation on Reference # Issue 28 in regard to timely completion and approval of Prepare Phase deliverables.*
EFS Project Management	**Original Finding:** There appears to be misunderstanding in regard to invenioLSI's Organizational Change Management (OCM) approach. **Severity:** Medium	**Reference Number:** Issue 30 **Status:** In Progress - Medium	**Updated Finding:** BerryDunn understands the OCM team has not conducted change management engagement and communication with stakeholders that were originally proposed as part of invenioLSI's approach (e.g., town hall meetings and stakeholder awareness memos). BerryDunn also observed that potential EFS Project stakeholders (i.e., State resources outside of the Department of Accounting and General Services [DAGS] and the Department of Budget and Finance [B&F]) received communications recently from the State Comptroller regarding expectations on adopting the EFS system without these resources having previously received OCM communications or outreach. Based on BerryDunn's observations, it appears the EFS Project has not completed tools (e.g., project website and outreach memos from the EFS Project) or efforts to engage these potential stakeholders and generate awareness of the EFS Project. **Updated Recommendation:** BerryDunn continues to recommend invenioLSI's Project Director increase visibility into invenioLSI's proposed OCM approach, activities, and deliverables with both the invenioLSI and State OCM lead to help with timely completion of OCM deliverables and tasks.

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
			BerryDunn recommends the OCM team conduct outreach to recipients of the State Comptroller's memo to communicate benefits of the EFS Project to help promote awareness and potential stakeholder buy-in. BerryDunn recommends increasing the severity of this issue to High.
EFS Project Management	**Original Finding:** Initial OCM deliverables and related efforts have not been completed on time. **Severity:** High	**Reference Number:** Issue 31 **Status:** In Progress - High	**Updated Finding:** BerryDunn understands that the OCM team has submitted their updated End-User Training Strategy and Communications Strategy plans as part of the Project Standards deliverable. However, other key OCM tasks and documentation (e.g., Change Management Plan, Knowledge Transfer Strategy, Project Team Training Strategy, Project Team Skills Development Strategy, Stakeholder Engagement Strategy, Leadership Alignment and related Workshops, and End User Training Assessment) remain incomplete. BerryDunn observed that these key OCM tasks and documentation are now scheduled to occur during the Explore Phase when stakeholders have already become engaged. **Updated Recommendation:** *Please see BerryDunn's recommendation on Reference # Issue 28 in regard to timely completion and approval of Prepare Phase deliverables.* BerryDunn recommends prioritizing stakeholder identification, OCM engagement efforts, and other Prepare Phase OCM tasks and deliverables prior to exiting the Prepare Phase and entering the Explore Phase—and prior to conducting EFS demonstrations with stakeholders.

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
EFS Project Management	**Original Finding:** There appears to be a misalignment between the EFS Project and Spire Hawaii in regard to EFS Project stakeholder engagement efforts. **Severity:** Low	**Reference Number:** Issue 32 **Status:** In Progress - Low	**Updated Finding:** BerryDunn understands the EFS Project's plan is to hold off on further defining Spire Hawaii's role and responsibilities specifically in regard to stakeholder engagement efforts until after potential changes to the EFS Project's approach is better understood and EFS Project Executive Sponsors have transitioned. **Updated Recommendation:** BerryDunn recommends, given the EFS Project's decision on when to address this issue, the EFS Project and EFS Project Executive Sponsors communicate to Spire Hawaii that they temporarily refrain from conducting stakeholder engagement efforts until their role and responsibilities in this regard can be defined to help prevent misaligned outreach efforts.
EFS Project Management	**Original Finding:** There appears to be misalignment between the EFS Project, Spire Hawaii, and GFOA in regard to efforts on the EFS Project. **Severity:** Medium	**Reference Number:** Issue 33 **Status:** In Progress - Medium	**Updated Finding:** BerryDunn understands the EFS Project has documented an overview of the roles of Spire Hawaii on the EFS Project as part of the EFS Charter, although this does not detail the responsibilities (as it does for State resources listed within the EFS Charter). BerryDunn continues to observe instances in which Spire Hawaii appears to be working on efforts that fall outside of the agreed-upon scope of their role. As an example, BerryDunn does not believe Spire Hawaii's efforts to provide a proposed revised EFS Project timeline to fall under its current role or other requests made by the EFS Project. BerryDunn also observed disagreements arising from deliverable sign-off requests running through Spire Hawaii in addition to directly between the PMO and DAGS. **Updated Recommendation:** BerryDunn recommends Spire Hawaii and the EFS Project hold discussions that include the EFS Project Executive Sponsors to clarify and further document Spire

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
			Hawaii's expected role on the EFS Project in the EFS Charter. BerryDunn also recommends establishing a process for communicating, gaining approval of, and establishing expectations—prior to starting work—should either Spire Hawaii or the EFS Project identify areas where Spire can provide services beyond their documented role. BerryDunn recommends increasing the severity of this issue to High due to further instances of this issue negatively impacting the EFS Project.
EFS Project Management	**Original Finding:** The planned go-live date of November 2023 for the Core Phase might not be achieved. **Severity:** High	**Reference Number:** Risk 45 **Status:** Implement Mitigation - **High**	**Updated Finding:** BerryDunn understands the EFS Project is currently working to modify the implementation approach and timeline, which will require approval from the EFS Project Executive Sponsors. **Updated Recommendation:** BerryDunn agrees with the State's efforts to modify the EFS Project's implementation approach and timeline.
EFS Project Management	**Original Finding:** invenioLSI Deputy Project Directors might not be able to efficiently execute invenioLSI's EFS Project approach. **Severity:** Medium	**Reference Number:** Risk 46 **Status:** Monitor - **Medium**	**Updated Finding:** BerryDunn observed that invenioLSI Deputy Project Directors are completing some key planning EFS Project deliverables. We observed minimal delays in the EFS Project engaging the invenioLSI Project Director for key decisions and approvals. BerryDunn is also aware that invenioLSI has recently onboarded an additional Deputy Project Director. **Updated Recommendation:** BerryDunn recommends the probability of this risk be reduced from 3 to 2 (Unlikely) based on the onboarding of the additional resource. With the reduced probability of the risk, the calculated severity should be reduced to Low. BerryDunn agrees with the EFS Project's approach to continue monitoring this risk until implementation modification efforts are completed.

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
EFS Project Management	**Original Finding:** Functional Primaries are now unable to validate the EFS requirements because they were not involved in requirements gathering and had minimal involvement in reviewing the requirements prior to their posting in the State's EFS RFP. **Severity:** High	**Reference Number:** Risk 48 **Status:** New - High	**Updated Finding:** BerryDunn understands that the EFS Project plans to perform a fit/gap analysis during EFS demonstration and fit/gap analysis sessions to confirm business needs are being met and/or identify those that are not, which might begin before a decision is made on the proposed implementation modifications and remaining stakeholders are added to the EFS Project. **Updated Recommendation:** BerryDunn recommends postponing EFS demonstration and fit/gap analysis sessions until all stakeholders have been identified and engaged and can participate.
EFS Project Management	**Original Finding:** Functional Primaries are minimally available to provide input to the EFS Project due to high vacancy rates. **Severity:** High	**Reference Number:** Issue 26 (IV&V finding added into existing issue) **Status:** Open - High	**Updated Finding:** BerryDunn understands there has not been a change to the availability on Functional Primaries and that Spire Hawaii continues to fill the role(s) of EFS Project representatives for DAGS, although Spire Hawaii's contract will expire in December 2022. While planning is underway to authorize a new RFP for continued EFS Project SME services, there is a significant likelihood of a gap between the end of Spire Hawaii's current contract and the beginning of any new vendor contract. **Updated Recommendation:** BerryDunn recommends postponing EFS demonstration and fit/gap analysis sessions until all EFS Project stakeholders have been identified and engaged during the Prepare Phase and are made available to participate.

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
EFS Project Management	**Original Finding:** The EFS Project has developed a Core Phase schedule prior to allocating the expected State resource hours into the EFS Project Work Plan, confirming these expectations with the State, and ensuring State resources are available as agreed upon. **Severity:** High	**Reference Number:** Risk 47 **Status:** New - High	**Updated Finding:** BerryDunn understands the EFS Project has revised the EFS Project workplan with resources identified to complete each tasks but has analyzed and updated the anticipated number of hours required for each resource to complete these task. **Updated Recommendation:** BerryDunn continues to recommend the EFS Project develop a resourcing plan that estimates how many hours will be required from each EFS Project resource to complete tasks and Complies with EFS Project resource availability (i.e., identify and smooth periods where resources are overallocated).
Quality Management	**Original Finding:** The Executive Sponsors and State EFS Project Leadership feel deliverables provided by invenioLSI to date have not met the State's quality expectations. **Severity:** High	**Reference Number:** Issue 34 **Status:** In Progress - High	**Updated Finding:** BerryDunn understands invenioLSI has submitted several key initial EFS Project deliverables on Monday, October 31, and the EFS Project is currently reviewing to confirm whether these deliverables meet quality expectations. BerryDunn observed a focused effort by invenioLSI to complete the Project Standards deliverables as well as a Deliverable Description Document. Notations in these documents indicate that invenioLSI incorporated the State's feedback into deliverable changes/updates. While BerryDunn observed DEDs were submitted as part of the deliverable packages for the Enterprise Design Document and Master Data Design documents, we did not identify individual DEDs (separate files that contain the contents

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
			approved in the Deliverable Description Document) accompanying the submitted Project Standards deliverables. **Updated Recommendation:** *Please see BerryDunn's recommendation on Reference # Issue 28 in regard to timely completion and approval of Prepare Phase deliverables.*
Requirements Management	**Original Finding:** The EFS Project has not yet identified and documented a comprehensive list of EFS end users and system interfaces, and invenioLSI and the State are not aligned on expectations for who will identify them. **Severity:** High	**Reference Number:** Issue 35 **Status:** In Progress - High	**Updated Finding:** BerryDunn understands the EFS Project has been making progress towards fully identifying EFS end users and system interfaces. BerryDunn is concerned that the EFS Project is beginning EFS demonstration and fit/gap analysis sessions before EFS end users and system interfaces have been fully identified. **Updated Recommendation:** BerryDunn continues to recommend the EFS Project inventory all systems that will need to interface with the EFS and all end users that will interact with the EFS, to better understand the scope/complexity of the EFS Project and help inform its approach. *Please see BerryDunn's recommendation on Reference # Issue 26.*
Requirements Management	**Original Finding:** Not all the specific needs of departments will be met by standard GovOne functionality and will not be identified or addressed during the	**Reference Number:** Risk 16 **Status:** New - High	**Updated Finding:** BerryDunn understands that the EFS Project is rapidly moving into EFS demonstration and fit/gap analysis sessions is planned to occur before remaining stakeholders can be added to the project scope and actively included in the sessions. **Updated Recommendation:** BerryDunn recommends pausing EFS demonstration and fit/gap analysis sessions until all stakeholders have been identified and engaged and can participate.

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
	Explore and Realize phases. **Severity:** High		
Requirements Management	**Original Finding:** The SAP configuration for user security currently planned for the State's implementation might not have the capabilities to meet the State's needs for managing user roles and privileges. **Severity:** Medium	**Reference Number:** Risk 49 **Status:** New - Medium	**Updated Finding:** BerryDunn understands the EFS Project will be using SAP Cloud Identify Services to manage user roles and privileges, which will provide technical capabilities to better meet the State's needs. **Updated Recommendation:** BerryDunn recommends continuing to monitor this risk as the EFS Project works to identify stakeholders and their requirements. BerryDunn recommends lowering the probability of this risk to 2 - Unlikely.
Software Development	**Original Finding:** The EFS Project does not have a clear "Definition of Done" for configuration of the EFS. **Severity:** High	**Reference Number:** Risk 50 **Status:** Implement Mitigation - High	**Updated Finding:** BerryDunn understands the EFS Project plans to address this risk during the Explore Phase. **Updated Recommendation:** BerryDunn continues to recommend the EFS Project develop a Definition of Done during the Prepare Phase to help ensure the EFS Project has a consistent and measurable standard for quality and completeness of the EFS Project before moving into the Explore Phase.
Software Development	**Original Finding:** Some invenioLSI EFS Project resources might not	**Reference Number:** Risk 46 **Status:** Monitor - Medium	**Updated Finding:** BerryDunn observed that invenioLSI resources are demonstrating an understanding invenioLSI's planned implementation approach as it relates to fit/gap analysis and planned system configuration. A demonstrated understanding of

EFS Project Critical Component	BerryDunn's Original Finding	EFS Project Risk/Issue Log Details	BerryDunn's Updated Finding and Updated Recommendation
	be able to efficiently execute invenioLSI's EFS Project approach. **Severity:** Medium		testing, training, OCM, and stakeholder outreach is still pending given the current phase of the EFS Project. However, invenioLSI's planned implementation approach might considerably change if the EFS Project's proposed implementation modifications are approved. If approved, this will require clear communication and outreach to invenioLSI EFS Project resources to confirm understating and alignment. **Updated Recommendation:** BerryDunn recommends continuing to monitor this risk as is the EFS Project continues to define and propose modifications to its approach.
Risks/Issues That Have Manifested From Previous Finding			
(None identified at this time)			

3.2 Updated Observation, Watch List Item, and Lessons Learned Perspective Findings and Recommendations

In Table 3-2 below, BerryDunn has included updated findings and recommendations for the previously reported observations, watch list items, and lessons learned perspectives that remain open.

Table 3.2: Updated Observation, Watch List Item, and Lessons Learned Perspective Findings and Recommendations

EFS Project Critical Component	BerryDunn's Finding(s)	BerryDunn's Recommendation(s)
EFS Project Management	**Original Watch List Finding:** The EFS Project has not documented or communicated its Software Development Life Cycle (SDLC) approach.	**Updated Finding:** No new findings. **Updated Recommendation:** BerryDunn continues to recommend the EFS project define, document, and socialize the EFS Project's SDLC approach in the Prepare Phase prior to entering the Explore Phase.

3.3 New Risk and Issue Findings and Recommendations

In Table 3-3, BerryDunn has listed its new risk and issue findings and recommendations for the Monthly IV&V Status Report. For this review of the EFS Project, BerryDunn identified two new issue findings. For these new findings, BerryDunn determined both to be of high-level severity.

Table 3-3: New Risk and Issue Findings and Recommendations

EFS Project Critical Component	BerryDunn's Finding(s)	BerryDunn's Recommendation(s)
Training	**Issue 1: State EFS Project team members do not have access to an environment in which they are able gain hands-on experience with the system to supplement their web-based training.** **Severity:** High	**BerryDunn's Findings:** BerryDunn observed that the EFS Project team has made multiple requests for an environment that they can use for training—one that is populated with data that can be used for transactions. We are aware that invenioLSI is looking into setting up an environment for the State to use. BerryDunn also notes that invenioLSI's Best and Final Offer indicates the State would have access from day one to their prototype system, which allows hands-on experience with the EFS system. While a sandbox environment that contains the prototype GovOne system was delivered to the State, this environment does not have data that can be used for hands-on training experience. **BerryDunn's Recommendation:** BerryDunn recommends the EFS Project make it a priority during the Prepare Phase to have invenioLSI establish this training environment and implement a plan to populate the environment with usable data. Having an environment that can be used for hands-on training will be an important factor in the success of engaging end users during and after the Explore Phase.

EFS Project Critical Component	BerryDunn's Finding(s)	BerryDunn's Recommendation(s)
Training	**Issue 2: State EFS Project team members have not been provided with role-based learning plans.** **Severity:** High	**BerryDunn Findings:** BerryDunn observed that EFS Project team members have been requesting guidance to determine which web-based training videos are relevant for their roles. We note that technical EFS Project resources find this to be especially critical due the large amount of technical training sessions available in the SAP Learning Center. BerryDunn understands that invenioLSI is in the process of responding to this request and that the request is complicated by State EFS Project technical team members not knowing their expected roles post implementation. Some team members may need to follow more than one learning plan if their post-implementation role is not fully defined at this time. **BerryDunn Recommendations:** BerryDunn recommends invenioLSI complete the development of learning plans during the Prepare Phase based on expected post implementation roles. We recommend the State EFS Project team assign those learning plans to State team members based on their key focus areas. BerryDunn also recommends the State EFS Project team prioritize defining post-implementation roles for team members.

3.4 New Observation, Watch List Item, and Lessons Learned Perspective Findings and Recommendations

In Table 3-4 below, BerryDunn has listed its new observation, watch list item, and lessons learned perspective findings and recommendations for the Monthly IV&V Status Report. For this review of the EFS Project, BerryDunn identified one new observation finding and recommendation.

Table 3-4: New Observations, Watch List Items, and Lessons Learned Perspective Findings and Recommendations

EFS Project Critical Component	BerryDunn's Finding(s)	BerryDunn's Recommendation(s)
Project Management	**Observation Item 1:** BerryDunn observed that many—but not all—of the EFS Project Workstreams have demonstrated effective project communication by adhering to an increased schedule of team meetings and implementing meeting best practices including providing agendas, recording, distributing meeting notes, and tracking action items in an Action Item Log.	**BerryDunn's Recommendation:** BerryDunn recognizes the increased effectiveness in this area but notes that there are opportunities for further improvement by having all workstreams (e.g., OCM and Functional) fully adopt these practices. BerryDunn recommends the EFS Project PMO communicate the importance of consistently applying these practices across the EFS Project and working toward 100% compliance across all EFS Project workstreams.

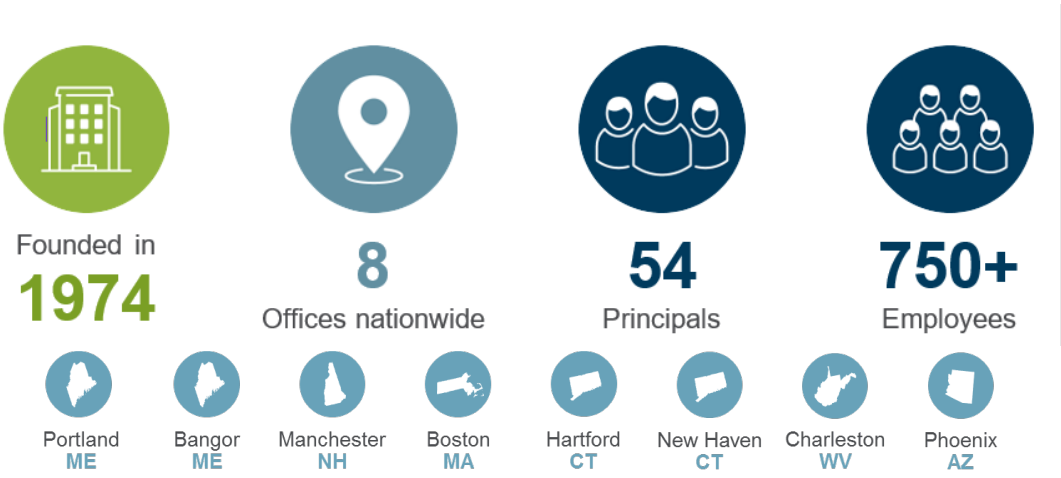
4.0 BerryDunn

BerryDunn is a national consulting and certified public accounting firm with a Government Consulting Group dedicated to serving state and local government agencies. BerryDunn was formed in 1974 and has experienced sustained growth throughout its 48-year history. Today, BerryDunn employs 750+ personnel with headquarters in Portland, Maine—and office locations in Arizona, Connecticut, Massachusetts, New Hampshire, and West Virginia. The firm has experienced professionals who provide a full range of services, including IT consulting; management consulting; and audit, accounting, and tax services.

BerryDunn's State Government Practice Group provides a variety of independent services to state agencies in need of understanding the health and effectiveness of their programs and processes. To assist in these efforts, BerryDunn provides an independent and proven audit methodology—in conjunction with state-established processes, tools, and templates—which includes a clear and actionable mitigation strategy.

BerryDunn regularly performs audits of IT and business organizations and their processes, as well as the interactions they have with other agencies and departments. Independent audits and project assessments are core to our consulting practice, and our project teams have conducted enterprise-wide strategic risk assessments, project audits, and project health assessments for public-sector clients for more than 32 years.

Figure 4-1: BerryDunn Overview



5.0 Appendix A: EFS Project Critical Components

Below in Table 5-1 is a list of all EFS Project Critical Components, and their related task numbers and descriptions, that BerryDunn used to assess the EFS Project during the Monthly IV&V Status Report period.

Table 5-1: EFS Project Critical Components, and Related Task Numbers and Descriptions

EFS Project Critical Component	Task #	Task Description
EFS Project Management		
EFS Project Sponsorship	PM-1	Assess and recommend improvement, as needed, to assure continuous executive stakeholder buy-in, participation, support and commitment, and that open pathways of communication exist among all stakeholders.
EFS Project Sponsorship	PM-2	Verify that executive sponsorship has bought-in to all changes which impact EFS Project objectives, cost, or schedule.
Management Assessment	PM-3	Verify and assess EFS Project management and organization, verify that lines of reporting and responsibility provide adequate technical and managerial oversight of the EFS Project.
Management Assessment	PM-4	Evaluate EFS Project progress, resources, budget, schedules, workflow, and reporting.
Management Assessment	PM-5	Assess coordination, communication, and management to verify agencies and departments are not working independently of one another and following the communication plan.
EFS Project Management	PM-6	Verify that an EFS Project Management Plan is created, has been accepted, and is being followed. Evaluate the EFS Project management plans and procedures to verify that they are developed, communicated, implemented, monitored, and complete.
EFS Project Management	PM-7	Evaluate EFS Project reporting plan and actual EFS Project reports to verify EFS Project status is accurately traced using EFS Project metrics.
EFS Project Management	PM-8	Verify milestones and completion dates are planned, monitored, and met.
EFS Project Management	PM-9	Verify the existence and institutionalization of an appropriate EFS Project issue tracking mechanism that documents issues as they arise, enables communication of issues to proper stakeholders, documents a mitigation strategy as appropriate, and tracks the issue to closure. This should include but is not limited to technical and development efforts.
EFS Project Management	PM-10	Evaluate the system's planned life-cycle development methodology or methodologies (waterfall, evolutionary spiral, rapid prototyping,

EFS Project Critical Component	Task #	Task Description
		incremental, etc.) to see if they are appropriate for the system being developed.
Business Process Reengineering	PM-11	Evaluate the EFS Project's ability and plans to redesign business systems to achieve improvements in critical measures of performance, such as cost, quality, service, and speed.
Business Process Reengineering	PM-12	Verify that there engineering plan has the strategy, management backing, resources, skills, and incentives necessary for effective change.
Business Process Reengineering	PM-13	Verify that resistance to change is anticipated and prepared for by using principles of change management at each step (such as excellent communication, participation, incentives) and having the appropriate leadership (executive pressure, vision, and actions) throughout their engineering process.
Risk Management	PM-14	Verify that an EFS Project Risk Management Plan is created and being followed. Evaluate the EFS Projects risk management plans and procedures to verify that risks are identified and quantified and that mitigation plans are developed, communicated, implemented, monitored, and complete.
Change Management	PM-15	Verify that a Change Management Plan is created and being followed. Evaluate the change management plans and procedures to verify they are developed and communicated,
Communication Management	PM-16	Verify that a Communication Plan is created and being followed. Evaluate the communication plans and strategies to verify they support communications and work product sharing between all EFS Project stakeholders; and assess if communication plans and strategies are effective, implemented, monitored, and complete.
Configuration Management	PM-17	Review and evaluate the configuration management (CM) plans and procedures associated with the development process.
Configuration Management	PM-18	Verify that all critical development documents, including but not limited to requirements, design, code and JCL are maintained under an appropriate level of control.
Configuration Management	PM-19	Verify that the processes and tools are in place to identify code versions and to rebuild system configurations from source code.
Configuration Management	PM-20	Verify that appropriate source and object libraries are maintained for training, test, and production and that formal sign-off procedures are in place for evaluating acceptability of and approving deliverables.

EFS Project Critical Component	Task #	Task Description
Configuration Management	PM-21	Verify that appropriate processes and tools are in place to manage system changes, including formal logging of change requests and the review, prioritization, and timely scheduling of maintenance actions.
Configuration Management	PM-22	Verify that mechanisms are in place to prevent unauthorized changes being made to the system and to prevent authorized changes from being made to the wrong version.
Configuration Management	PM-23	Review the use of CM information (such as the number and type of corrective maintenance actions over time) in EFS Project management.
EFS Project Estimating and Scheduling	PM-24	Evaluate and make recommendations on the estimating and scheduling process of the EFS Project to ensure that the EFS Project budget and resources are adequate for the work- breakdown structure and schedule.
EFS Project Estimating and Scheduling	PM-25	Verify the schedules to assure that adequate time and resources are assigned for planning, development, review, testing, and rework.
EFS Project Estimating and Scheduling	PM-26	Examine historical data to determine if the EFS Project/department has been able to accurately estimate the time, labor, and cost of software development efforts.
EFS Project Personnel	PM-27	Examine the job assignments, skills, training, and experience of the personnel involved in program development to verify that they are adequate for the development task.
EFS Project Personnel	PM-28	Evaluate the staffing plan for the EFS Project to verify that adequate human resources will be available for development and maintenance.
EFS Project Personnel	PM-29	Evaluate the State's personnel policies to verify that staff turnover will be minimized.
EFS Project Organization	PM-30	Verify that lines of reporting and responsibility provide adequate technical and managerial oversight of the EFS Project.
EFS Project Organization	PM-31	Verify that the EFS Project's organizational structure supports training, process definition, independent Quality Assurance, Configuration Management, product evaluation, and any other functions critical for the EFS Project's success.
Subcontractors and External Staff	PM-32	Evaluate the use of sub-contractors or other external sources of EFS Project staff (such as IS staff from another State organization) in EFS Project development.
Subcontractors and External Staff	PM-33	Verify that the obligations of sub-contractors and external staff (terms, conditions, statement of work, requirements, standards, development milestones, acceptance criteria, delivery dates, etc.) are clearly defined.

EFS Project Critical Component	Task #	Task Description
Subcontractors and External Staff	PM-34	Verify that the subcontractors' software development methodology and product standards are compatible with the system's standards and environment.
Subcontractors and External Staff	PM-35	Verify that each subcontractor has and maintains the required skills, personnel, plans, resources, procedures, and standards to meet their commitment. This will include examining the feasibility of any offsite support of the EFS Project.
Subcontractors and External Staff	PM-36	Verify that any proprietary tools used by subcontractors do not restrict the future maintainability, portability, and reusability of the system.
State Oversight	PM-37	Verify that State oversight is provided in the form of periodic status reviews and technical interchanges.
State Oversight	PM-38	Verify that the State has defined the technical and managerial inputs the subcontractor needs (reviews, approvals, requirements, and interface clarifications, etc.) and has the resources to supply them on schedule.
State Oversight	PM-39	Verify that State staff has the ultimate responsibility for monitoring EFS Project cost and schedule.
Quality Management		
Quality Assurance	QA-1	Evaluate and make recommendations on the EFS Project's Quality Assurance plans, procedures, and organization.
Quality Assurance	QA-2	Verify that QA has an appropriate level of independence from EFS Project management.
Quality Assurance	QA-3	Verify that the QA organization monitors the fidelity of all defined processes in all phases of the EFS Project.
Quality Assurance	QA-4	Verify that the quality of all products produced by the EFS Project is monitored by formal reviews and signoffs.
Quality Assurance	QA-5	Verify that EFS Project self-evaluations are performed and that measures are continually taken to improve the process.
Quality Assurance	QA-6	Verify that QA has an appropriate level of independence; evaluate and make recommendations on the EFS Project's Quality Assurance plans, procedures, and organization.
Quality Assurance	QA-7	Evaluate if appropriate mechanisms are in place for EFS Project self-evaluation and process improvement.
Process Definition and	QA-8	Review and make recommendations on all defined processes and product standards associated with the system development.

EFS Project Critical Component	Task #	Task Description
Product Standards		
Process	QA-9	Verify that all major development processes are defined and that the defined and approved processes and standards are followed in development.
Process Definition and Product Standards	QA-10	Verify that the processes and standards are compatible with each other and with the system development methodology.
Process Definition and Product Standards	QA-11	Verify that all process definitions and standards are complete, clear, up-to-date, consistent in format, and easily available to EFS Project personnel.
Training		
User Training and Documentation	TR-1	Review and make recommendations on the training provided to system users. Verify sufficient knowledge transfer for maintenance and operation of the new system.
User Training and Documentation	TR-2	Verify that training for users is instructor-led and hands-on and is directly related to the business process and required job skills.
User Training and Documentation	TR-3	Verify that user-friendly training materials and help desk services are easily available to all users.
User Training and Documentation	TR-4	Verify that all necessary policy and process and documentation is easily available to users.
User Training and Documentation	TR-5	Verify that all training is given on-time and is evaluated and monitored for effectiveness, with additional training provided as needed.
Developer Training and Documentation	TR-6	Review and make recommendations on the training provided to system developers.
Developer Training and Documentation	TR-7	Verify that developer training is technically adequate, appropriate for the development phase, and available at appropriate times.

EFS Project Critical Component	Task #	Task Description
Developer Training and Documentation	TR-8	Verify that all necessary policy, process and standards documentation is easily available to developers.
Developer Training and Documentation	TR-9	Verify that all training is given on-time and is evaluated and monitored for effectiveness, with additional training provided as needed.
Requirements Management		
Requirements Management	RM-1	Evaluate and make recommendations on the EFS Project's process and procedures for managing requirements.
Requirements Management	RM-2	Verify that system requirements are well-defined, understood and documented.
Requirements Management	RM-3	Evaluate the allocation of system requirements to hardware and software requirements.
Requirements Management	RM-4	Verify that software requirements can be traced through design, configuration and test phases to verify that the system performs as intended and contains no unnecessary software elements.
Requirements Management	RM-5	Verify that requirements are under formal configuration control.
Security Requirements	RM-6	Evaluate and make recommendations on EFS Project policies and procedures for ensuring that the system is secure and that the privacy of client data is maintained.
Security Requirements	RM-7	Evaluate the EFS Project's restrictions on system and data access.
Security Requirements	RM-8	Evaluate the EFS Project's security and risk analysis.
Security Requirements	RM-9	Verify that processes and equipment are in place to back up client and EFS Project data and files and archive them safely at appropriate intervals.
Requirements Analysis	RM-10	Verify that an analysis of client, State and federal needs and objectives has been performed to verify that requirements of the system are well understood, well defined, and satisfy federal regulations.
Requirements Analysis	RM-11	Verify that all stakeholders have been consulted to the desired functionality of the system, and that users have been involved in prototyping of the user interface.

EFS Project Critical Component	Task #	Task Description
Requirements Analysis	RM-12	Verify that all stakeholders have bought-in to all changes which impact EFS Project objectives, cost, or schedule.
Requirements Analysis	RM-13	Verify that performance requirements (e.g. timing, response time and throughput) satisfy user needs.
Requirements Analysis	RM-14	Verify that user's maintenance requirements for the system are completely specified.
Interface Requirements	RM-15	Verify that all system interfaces are exactly described, by medium and by function, including input/output control codes. data format, polarity, range, units, and frequency.
Requirements Analysis	RM-16	Verify those approved interface documents are available and that appropriate relationships (such as interface working groups) are in place with all agencies and organizations supporting the interfaces.
Requirements Allocation and Specification	RM-17	Verify that all system requirements have been allocated to either a software or hardware subsystem.
Requirements Allocation and Specification	RM-18	Verify that requirements specifications have been developed for all hardware and software subsystems in a sufficient level of detail to ensure successful implementation.
Reverse Engineering	RM-19	If a legacy system or a transfer system is or will be used in development, verify that a well-defined plan and process for reengineering the system is in place and is followed. The process, depending on the goals of the reuse/transfer, may include reverse engineering, code translation, re-documentation, restructuring, normalization, and re- targeting.
Operating Environment		
System Hardware	OE-1	Evaluate new and existing system hardware configurations to determine if their performance is adequate to meet existing and proposed system requirements.
System Hardware	OE-2	Determine if hardware is compatible with the State's existing processing environment, if it is maintainable, and if it is easily upgradeable. This evaluation will include, but is not limited to, CPUs and other processors, memory, network connections and bandwidth, communication controllers, telecommunications systems (LAN/WAN), terminals, printers, and storage devices.
System Hardware	OE-3	Evaluate current and EFS Projected vendor support of the hardware, as well as the State's hardware configuration management plans and procedures.

EFS Project Critical Component	Task #	Task Description
System Software	OE-4	Evaluate new and existing system software to determine if its capabilities are adequate to meet existing and proposed system requirements.
System Software	OE-5	Determine if the software is compatible with the State's existing hardware and software environment, if it is maintainable, and if it is easily upgradeable. This evaluation will include, but is not limited to, operating systems, middleware, and network software including communications and file-sharing protocols.
System Software	OE-6	Current and EFS Projected vendor support of the software will also be evaluated, as well as the State's software acquisition plans and procedures.
Database Software	OE-7	Evaluate new and existing database products to determine if their capabilities are adequate to meet existing and proposed system requirements.
Database Software	OE-8	Determine if the database's data format is easily convertible to other formats, if it supports the addition of new data items, if it is scalable, if it is easily refreshable and if it is compatible with the State's existing hardware and software, including any on-line transaction processing (OLTP) environment.
Database Software	OE-9	Evaluate any current and EFS Projected vendor support of the software, as well as the State's software acquisition plans and procedures.
System Capacity	OE-10	Evaluate the existing processing capacity of the system and verify that it is adequate for current statewide needs for both batch and on-line processing.
System Capacity	OE-11	Evaluate the historic availability and reliability of the system including the frequency and criticality of system failure.
System Capacity	OE-12	Evaluate the results of any volume testing or stress testing.
System Capacity	OE-13	Evaluate any existing measurement and capacity planning program and evaluate the system's capacity to support future growth.
System Capacity	OE-14	Make recommendations on changes in processing hardware, storage, network systems, operating systems, COTS software, and software design to meet future growth and improve system performance.
Development Environment		
Development Hardware	DE-1	Evaluate new and existing development hardware configurations to determine if their performance is adequate to meet the needs of system development.

EFS Project Critical Component	Task #	Task Description
Development Hardware	DE-2	Determine if hardware is maintainable, easily upgradeable, and compatible with the State's existing development and processing environment. This evaluation will include, but is not limited to, CPUs and other processors, memory, network connections and bandwidth, communication controllers, telecommunications systems (LAN/WAN), terminals, printers and storage devices.
Development Hardware	DE-3	Current and EFS Projected vendor support of the hardware will also be evaluated, as well as the State's hardware configuration management plans and procedures.
Development Software	DE-4	Evaluate new and existing development software to determine if its capabilities are adequate to meet system development requirements.
Development Software	DE-5	Determine if the software is maintainable, easily upgradeable, and compatible with the State's existing hardware and software environment.
Development Software	DE-6	Evaluate the environment as a whole to see if it shows a degree of integration compatible with good development. This evaluation will include, but is not limited to, operating systems, network software, CASE tools, EFS Project management software, configuration management software, compilers, cross-compilers, linkers, loaders, debuggers, editors, and reporting software.
Development Software	DE-7	Language and compiler selection will be evaluated with regard to portability and reusability (ANSI standard language, non-standard extensions, etc.).
Development Software	DE-8	Current and EFS Projected vendor support of the software will also be evaluated.
Software Development		
High-Level Design	SD-1	Evaluate and make recommendations on existing high-level design products to verify the design is workable, efficient, and satisfies all system and system interface requirements.
High-Level Design	SD-2	Evaluate the design products for adherence to the EFS Project design methodology and standards.
High-Level Design	SD-3	Evaluate the design and analysis process used to develop the design and make recommendations for improvements. Design standards, methodology and CASE tools used will be evaluated and recommendations for improvements made.
High-Level Design	SD-4	Verify that design requirements can be traced back to system requirements.

EFS Project Critical Component	Task #	Task Description
High-Level Design	SD-5	Verify that all design products are under configuration control and formally approved before detailed design begins.
Detailed Design	SD-6	Evaluate and make recommendations on existing detailed design products to verify that the design is workable, efficient, and satisfies all high-level design requirements.
Detailed Design	SD-7	The design products will also be evaluated for adherence to the EFS Project design methodology and standards.
Detailed Design	SD-8	The design and analysis process used to develop the design will be evaluated and recommendations for improvements made.
Detailed Design	SD-9	Design standards, methodology and CASE tools used will be evaluated and recommendations made.
Detailed Design	SD-10	Verify that design requirements can be traced back to system requirements and high-level design.
Detailed Design	SD-11	Verify that all design products are under configuration control and formally approved before coding begins.
Job Control	SD-12	Perform an evaluation and make recommendations on existing job control and on the process for designing job control.
Job Control	SD-13	Evaluate the system's division between batch and on-line processing with regard to system performance and data integrity.
Job Control	SD-14	Evaluate batch jobs for appropriate scheduling, timing and internal and external dependencies.
Job Control	SD-15	Evaluate the appropriate use of OS scheduling software.
Job Control	SD-16	Verify that job control language scripts are under an appropriate level of configuration control.
Code	SD-17	Evaluate and make recommendations on the standards and processes currently in place for code development.
Code	SD-18	Evaluate the existing code base for portability and maintainability, taking software metrics including but not limited to modularity, complexity, and source and object size.
Code	SD-19	Code documentation will be evaluated for quality, completeness (including maintenance history) and accessibility.
Code	SD-20	Evaluate the coding standards and guidelines and the EFS Project's compliance with these standards and guidelines. This evaluation will include, but is not limited to, structure, documentation, modularity, naming conventions and format.

EFS Project Critical Component	Task #	Task Description
Code	SD-21	Verify that developed code is kept under appropriate configuration control and is easily accessible by developers.
Code	SD-22	Evaluate the EFS Project's use of software metrics in management and quality assurance.
Unit Test	SD-23	Evaluate the plans, requirements, environment, tools, and procedures used for unit testing system modules.
Unit Test	SD-24	Evaluate the level of test automation, interactive testing and interactive debugging available in the test environment.
Unit Test	SD-25	Verify that an appropriate level of test coverage is achieved by the test process, that test results are verified, that the correct code configuration has been tested, and that the tests are appropriately documented.
System and Acceptance Testing		
System Integration Test	ST-1	Evaluate the plans, requirements, environment, tools, and procedures used for integration testing of system modules.
System Integration Test	ST-2	Evaluate the level of automation and the availability of the system test environment.
System Integration Test	ST-3	Verify that an appropriate level of test coverage is achieved by the test process, that test results are verified, that the correct code configuration has been tested, and that the tests are appropriately documented, including formal logging of errors found in testing.
System Integration Test	ST-4	Verify that the test organization has an appropriate level of independence from the development organization.
Pilot Test	ST-5	Evaluate the plans, requirements, environment, tools, and procedures for pilot testing the system.
Pilot Test	ST-6	Verify that a sufficient number and type of case scenarios are used to ensure comprehensive but manageable testing and that tests are run in a realistic, real-time environment.
Pilot Test	ST-7	Verify that test scripts are complete, with step-by-step procedures, required pre-existing events or triggers, and expected results.
Pilot Test	ST-8	Verify that test results are verified, that the correct code configuration has been used, and that the tests runs are appropriately documented, including formal logging of errors found in testing.
Pilot Test	ST-9	Verify that the test organization has an appropriate level of independence from the development organization.

EFS Project Critical Component	Task #	Task Description
Interface Testing	ST-10	Evaluate interface testing plans and procedures for compliance with industry standards.
Acceptance and Turnover	ST-11	Acceptance procedures and acceptance criteria for each product must be defined, reviewed, and approved prior to test and the results of the test must be documented. Acceptance procedures must also address the process by which any software product that does not pass acceptance testing will be corrected.
Acceptance and Testing	ST-12	Verify that appropriate acceptance testing based on the defined acceptance criteria is performed satisfactorily before acceptance of software products.
Acceptance and Turnover	ST-13	Verify that the acceptance test organization has an appropriate level of independence from the subcontractor.
Acceptance and Turnover	ST-14	Verify that training in using the contractor-supplied software will be on-going throughout the development process, especially If the software is to be turned over to State staff for operation.
Acceptance and Turnover	ST-15	Review and evaluate implementation plan.
Data Management		
Data Conversion	DM-1	Evaluate the State's existing and proposed plans, procedures and software for data conversion.
Data Conversion	DM-2	Verify that procedures are in place and are being followed to review the completed data for completeness and accuracy and to perform data clean-up as required.
Data Conversion	DM-3	Determine conversion error rates and if the error rates are manageable.
Data Conversion	DM-4	Make recommendations on making the conversion process more efficient and on maintaining the integrity of data during the conversion.
Database Design	DM-5	Evaluate new and existing database designs to determine if they meet existing and proposed system requirements.
Database Design	DM-6	Recommend improvements to existing designs to improve data integrity and system performance.
Database Design	DM-7	Evaluate the design for maintainability, scalability, upgradable, concurrence, normalization (where appropriate) and any other factors affecting performance and data integrity.

EFS Project Critical Component	Task #	Task Description
Database Design	DM-8	Evaluate the EFS Project's process for administering the database, including backup, recovery, performance analysis and control of data item creation.
Operations Oversight		
Operational Change Tracking	OO-1	Evaluate system's change requests and defect tracking processes.
Operational Change Tracking	OO-2	Evaluate implementation of the process activities and request volumes to determine if processes are effective and are being followed.
Customer and User Operational Satisfaction	OO-3	Evaluate user satisfaction with system to determine areas for improvement.
Operational Goal	OO-4	Evaluate impact of system on program goals and performance standards.
Operational Documentation	OO-5	Evaluate operational plans and processes.
Operational Processes and Activity	OO-6	Evaluate implementation of the process activities including backup, disaster recovery and day-to-day operations to verify the processes are being followed.

6.0 Appendix B

Table 6-1 illustrates the individual ratings for the EFS Project Critical Components that BerryDunn used to determine the health of the EFS Project, and their corresponding rating definitions, for each Monthly IV&V Status Report.

Table 6-1: EFS Project Critical Components Rating Definitions

Rating	Definition
5 – Excellent	No findings were identified by BerryDunn.
4 – Good	Watch List Items and/or Observations were identified that may or may not result in risks and/or issues.
3 – Average	Many low-severity risks/issues, a few medium-severity risks/issues, and/or one high-severity risk/issue was/were identified by BerryDunn and not logged in the EFS Project's risk/issue log and/or lessons learned repository—or have been logged but the plans to address them are not resolving them.
2 – Fair	Many medium-severity risks/issues and/or a few high-severity risks/issues were identified by BerryDunn and not logged in the EFS Project's risk/issue log and/or lessons learned repository—or have been logged but the plans to address them are not resolving them.
1 – Poor	Many medium-severity risks/issues and/or many high-severity risks/issues were identified by BerryDunn and not logged in the EFS Project's risk/issue log and/or lessons learned repository—or have been logged but the plans to address them are not resolving them.

Table 6-2 below illustrates the overall ratings for the EFS Project that BerryDunn used to determine the overall health of the EFS Project, and the corresponding rating definitions, for each Monthly IV&V Status Report. The overall health rating of the EFS Project reflects the average of the individual ratings for all the EFS Project Critical Components ratings.

Table 6-2: EFS Project Overall Health Ratings and Related Definitions

Rating	Definition
5.0 – 4.5	Excellent health
4.5 – 4.0	Good health
4.0 – 3.0	Average health
3.0 – 2.0	Fair health
2.0 – 1.0	Poor health

Table 6-3, below, provides definitions for risk and issue (and all risk/issue-related definitions—i.e., impact, probability, and severity), watch list item, observation, and lessons learned

perspectives that BerryDunn used to identify and rate findings for each Monthly IV&V Status Report.

Table 6-3: Finding-Related Definitions

Term	Definition
Risk	An uncertain event or condition that, if it occurs, has a positive or negative effect on one or more EFS Project objectives. A risk is therefore an event or condition that might occur in the future.
Issue	An event or condition that is occurring in the EFS Project and having a negative effect on its objectives, standards, and/or requirements. An issue is therefore an event or condition that is currently occurring.
Impact	The effect that a risk will have on the EFS Project if it occurs or the effect that an issue is having on the EFS Project.
Probability	The likelihood of risk impact occurring on the EFS Project.
Severity	A measurement of an EFS Project risk (that considers the impact and probability) or issue that demonstrates the potential or actual effect on the EFS Project.
Observation	An event or situation in the EFS Project that might be noteworthy. Should the event or situation continue to occur, the observation might then be escalated and recorded as a watch list item.
Watch List Item	An event or situation in the EFS Project that might warrant monitoring to determine its potential impact (if any). These events or situations should be scrutinized and analyzed to determine if the item might need escalation to a risk or an issue, or if the watch list item resolves on its own.
Lessons Learned Perspective	Additional perspective(s) from BerryDunn on the EFS Project's lessons learned, including recommendations/guidance/considerations.

Table 6-4 below provides definitions for the different levels of risk impact ratings that BerryDunn used for each Monthly IV&V Status Report.

Table 6-4: Risk Impact Rating Definitions

Risk Impact Rating	Definition
5 – Severe	Very significant impact on the EFS Project.
4 – Significant	Significant impact on the EFS Project.
3 – Moderate	Some impact in key areas of the EFS Project.
2 – Minor	Minor impact overall on the EFS Project.
1 – Slight	Minor impact on secondary areas of the EFS Project.

Table 6-5 provides definitions for the different levels of risk probability ratings that BerryDunn used for each Monthly IV&V Status Report.

Table 6-5: Risk Probability Rating Definitions

Risk Probability Rating	Definition
5	Near Certainty (80% – 100%)
4	Highly Likely (60% – 80%)
3	Likely (40% – 60%)
2	Unlikely (20% – 40%)
1	Remote (0% – 20%)

The Risk Severity Matrix in Table 6-6 illustrates the method BerryDunn used to determine risk severity (i.e., probability rating multiplied by impact rating), for any risks BerryDunn identified for each Monthly IV&V Status Report.

Table 6-6: Risk Severity Matrix

Risk Severity Level (Probability x Impact)					
Probability	**Impact**				
—	**1 – Slight:**	**2 – Minor:**	**3 – Moderate:**	**4 – Significant:**	**5 – Severe:**
1 – Remote:	**1 – Low**	**2 – Low**	**3 – Low**	**4 – Low**	**5 – Medium**
2 – Unlikely:	**2 – Low**	**4 – Low**	**6 – Medium**	**8 – Medium**	**10 – Medium**
3 – Likely:	**3 – Low**	**6 – Medium**	**9 – Medium**	**12 – Medium**	**15 – High**
4 – Highly Likely:	**4 – Low**	**8 – Medium**	**12 – Medium**	**16 – High**	**20 – High**
5 – Near Certainty:	**5 – Medium**	**10 – Medium**	**15 – High**	**20 – High**	**25 – High**

Table 6-7 on the following page provides common attributes for the different levels of risk severity ratings (from Table 6-6 above) that BerryDunn used for each Monthly IV&V Status Report.

Table 6-7: Risk Severity Rating Common Attributes

Risk Severity Value	Risk Severity Rating	Common Attributes
15 – 25	High	• Major disruption to EFS Project likely • Change in EFS Project approach required • Mitigation to EFS Project risk required • Management attention toward EFS Project risk required
5 – 12	Medium	• Some disruption in EFS Project • Consider an alternative EFS Project approach • Mitigation to EFS Project risk recommended • Management attention toward EFS Project risk recommended
1 – 4	Low	• Minimal disruption to EFS Project likely • Oversight required to help ensure EFS Project risk remains Low • Mitigation to EFS Project risk may not be necessary • Monitor the EFS Project risk

Table 6-8, below, provides common attributes for the different levels of issue severity ratings that BerryDunn used for each Monthly IV&V Status Report.

Table 6-8: Issue Severity Rating Common Attributes

Issue Severity Rating	Common Attributes
High	• Major disruption to EFS Project occurring • Change in EFS Project approach required
Medium	• Medium disruption to EFS Project occurring • Consider an alternative approach in remediating EFS Project issue
Low	• Minimal disruption to EFS Project occurring • Oversight required of EFS Project issue • Remediation tasks recommended to help ensure EFS Project issue impact remains Low