January 4, 2022

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

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

Dear 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 reports to the Legislature within ten days of receiving the report, please find attached the report the Office of Enterprise Technology Services received for the State of Hawaii Department of Education’s FMS Modernization Project.

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

Sincerely,

Douglas Murdock
Chief Information Officer
State of Hawai‘i
FMS Modernization Project

Department of Education (DOE)

IV&V Monthly Status Report – Final
For Reporting Period: May 16 – June 15, 2021

Draft Submitted: July 1, 2021
Final Submitted: August 2, 2021
Overview

• Executive Summary
• IV&V Findings and Recommendations
• IV&V Status
• Appendices
  • A – IV&V Findings Log & Priority Ratings
  • B – Standard IV&V Inputs
  • C – IV&V Details
Executive Summary

The project is currently progressing through the final production build of the Aukahi Financial Management System (FMS) and is on-track for the planned July 16th soft launch and the July 19th go-live date. The project OCM team has been sending system users weekly “Countdown” newsletters to keep them informed and help them prepare for using the new system. The project has essentially taken what is called a minimum viable product (MVP) approach for their initial release in order to maintain their aggressive schedule and quickly move off their failing legacy FMS. The newsletter and other OCM efforts should help with user buy-in given that the system will lack some features and present some usability challenges at go-live. After go-live, the project intends to work quickly to fill these gaps and address other user concerns that arise.

IV&V remains concerned that few details have been provided as to how user support will be conducted post go-live and whether current efforts to develop and implement a comprehensive support plan can be effectively completed prior to go-live. Given the previously reported DOE project leads limited capacity, uncertainty around comprehensive testing, and the shortened window for the production build smoke test, IV&V remains concerned the project team could be overwhelmed with managing excessive post go-live bugs and help desk tickets. IV&V has observed incremental improvements to the SI’s quality of work but remains concerned that potential configuration missteps could still disrupt go-live and lead to an increase in the number of bugs post go-live.

The project continues to contend with multiple Oracle Financial (OF) platform challenges including a time zone bug that displays dates to users in UTC (Coordinated Universal Time) time instead of HST (Hawaii Standard Time). Oracle has stated they will repair one instance of this bug but have made no commitment to fix other instances in the future. Therefore, even after the one time zone bugs is repaired in November, users will continue to contend with UTC dates in other areas of the system, which could lead to user confusion and frustration, inaccurate reporting, and potentially customer/vendor confusion.

IV&V also remains concerned that the SI has yet to complete the project Requirements Traceability Matrix (RTM), ambiguity with the SI’s agreed upon scope of work, and that DOE may not be fully prepared to maintain or fully support the system post go-live.
The project continues to accept risks associated with the aggressive schedule in order to quickly move off their failing legacy FMS system. IV&V, DOE PMO, and DOE support personnel remain concerned that few details have been provided as to how user support will be provided post go-live and whether current efforts to develop and implement a comprehensive support plan can be effectively completed prior to go-live. Though the technical go-live production build appears to be progressing well, IV&V is concerned that a comprehensive operational readiness checklist has yet to be developed, managed, and tracked. This checklist can help bring order to the flurry of activities as go-live approaches and can help to assure important tasks are not overlooked. IV&V and DOE leadership have some uncertainty around the effectiveness of system testing as test script development may have been rushed, which could elevate the number of help desk tickets in the weeks following go-live.

DOE has accepted the risk that the SI will not provide a fully resourced project plan for pre-go-live activities. IV&V recommends DOE request the project develop a fully resourced project plan for post go-live activities so they can effectively determine and communicate to users when functionality that has been delayed until post go-live will be delivered, and when workarounds can be replaced with system features.

The SI has stated they will meet all contractual requirements at no additional cost to DOE (without drawing on O&M funds), whether they can complete them within the 90-day warranty period or not. However, it appears the SI has yet to complete the Requirements Traceability Matrix (RTM) that would ensure and/or provide evidence that each requirement has been met and validated through testing, prior to go-live. Previously executed change requests may have left some ambiguity regarding the agreed upon SI scope of work. IV&V recommends DOE make efforts to reach a common understanding of the project scope of work, validate whether all contractually required requirements are included in the RTM, and then validate that each RTM requirement has been sufficiently met by the SI. For contractual requirements that are no longer needed, IV&V recommends DOE consider negotiating "swaps" of deprecated requirements for new requirements that were not part of the scope of the current contract.
Executive Summary (cont’d)

<table>
<thead>
<tr>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Category</th>
<th>IV&amp;V Observations</th>
<th>M</th>
<th>M</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Human Resources Management</td>
<td>IV&amp;V remains concerned that key DOE project participants continue to operate at their maximum capacity and that the pre-go-live flurry of activities could result in further sacrifice of quality or schedule slippage. IV&amp;V remains concerned that there is currently no objective way to determine SMEs remaining workload and whether they will be able to complete assigned tasks prior to go-live. The DOE PM will likely be out indefinitely starting sometime close to 7/11/2021, therefore Gartner has added an additional PM resource to the project team to compensate. However, the Gartner contract for PM resources ends 7/23/2021 and it remains unclear who will assist the project with managing the growing backlog of post go-live support activities or whether these duties will fall to DOE SMEs that are already at capacity. Many SMEs continue to work at a high level of intensity on project tasks, logging 10-12 hour workdays. As more details of the post go-live support plan are becoming available, the potential for DOE SMEs becoming overwhelmed with user support requests is increasing. IV&amp;V recommends the DOE support infrastructure team address this concern in their plans and work to minimize the impact to key DOE SMEs. DOE leadership and IV&amp;V remain concerned that the SI has been unable to replace unproductive SI resources which have put an additional burden on overtaxed DOE SMEs as they, at times, need to compensate for their lack of productivity or lack of task management skills. However, DOE SMEs have reported, and IV&amp;V has observed, that the SI’s quality of development work has improved incrementally. Still, IV&amp;V and DOE SMEs remain concerned that development missteps still lead to an increase in the number of bugs post go-live.</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
</tbody>
</table>
## Executive Summary (cont’d)

<table>
<thead>
<tr>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Category</th>
<th>IV&amp;V Observations</th>
</tr>
</thead>
</table>
|     |     |     | Project Management & Organization | IV&V remains concerned that some of the SI PM challenges the project continues to experience could negatively impact the management of the potentially extensive number of post go-live activities, as well as activities that have been pushed out to just before go-live. DOE has reported instances where SI changes to the post go-live production build checklist have been poorly communicated, which required DOE SMEs to make additional efforts to manage project communications. IV&V and the DOE PMO remain concerned that the go-live checklist critical path is being manually tracked by the SI, which, if not managed well, could increase the risk of an unsuccessful go-live.  

IV&V remains concerned the Operations and Maintenance (O&M) plan and the post go-live support plan have yet to be finalized this close to go-live. If they are not completed soon, DOE may not be fully prepared to maintain or fully support the system post go-live. DOE has recently appointed a resource to lead the post go-live support plan development effort and they have made some early progress. However, it remains unclear if DOE will be able to execute their plan in time to provide comprehensive user support prior to go-live and meet user expectations. IV&V recommends the DOE post go-live support plan address minimizing the impact to key DOE SMEs who will likely be pre-occupied with resolving system issues the first few weeks after go-live. Key DOE SMEs continue to demonstrate elevated levels of understanding of system functionality and provide guidance to SI resources on process improvements. Some Knowledge Transfer (KT) sessions continue to get pushed out to just prior to or just after go-live.  

The project has now completed most planned instructor-led training sessions. DOE SMEs and IV&V remain concerned with the number of users that did not attend their scheduled courses that must now rely on recorded sessions, and that some attendees have reported that training may be insufficient to fully prepare users. If a significant number of users are unable to effectively use the system by the planned go-live date, the project could experience an unsuccessful go-live. DOE is reportedly making efforts to ensure all users, at minimum, view the recorded sessions. Further, many DOE users have become accustomed to hands-on training that could better prepare them for system usage, however, the project was unable to provide comprehensive hands-on training, likely due to the accelerated schedule and complications related to the COVID pandemic. The project will provide users with a sandbox environment for hands on testing and training, but it will not be available to users until after go-live. |
## Executive Summary (cont’d)

<table>
<thead>
<tr>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Category</th>
<th>IV&amp;V Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>M</td>
<td>M</td>
<td>Quality Management</td>
<td>The project is now executing the fourth and final (production) build of the system from the ground up. With the multiple build iterations, the SI appears to be increasing the quality of their configuration efforts. IV&amp;V remains concerned that the project continues to advance to subsequent project phases (now the production build) without completing exit and entrance criteria. For example, the project elected to move forward with the production build despite incomplete conversion and interface functionality, and despite not having completed all planned UAT and RST test scripts. The project has accepted the risk that some system tests will be delayed, and that some functionality will be implemented late into the production build in order to keep to their scheduled go-live date. Some interfaces have yet to be completed and fully tested and some may be delayed until after go-live. Late introduction of functionality into the final production build is a bad practice and could lead to unexpected bugs or an unsuccessful go-live.</td>
</tr>
</tbody>
</table>
Executive Summary (cont’d)

<table>
<thead>
<tr>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Category</th>
<th>IV&amp;V Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>M</td>
<td>M</td>
<td>System Architecture &amp; Design</td>
<td>Oracle had stated that the previously reported time zone bug will be treated as an enhancement and not a bug. However, Oracle has since agreed to repair, at no cost, one instance of the time zone bug that would be most impactful for users (planned delivery is their November 2021 quarterly release). Until then, users will continue to contend with dates displayed in UTC (Coordinated Universal Time) time instead of HST (Hawaii Standard Time). For example, purchase orders that are submitted after 2 PM HST will show the next day’s date instead of the current date. Also, certain user queries will at times return inaccurate results if the queries are based on UTC time, which would require the user to consider the UTC time zone when setting search parameters and properly analyze the search results. Even after the one instance of the time zone bug is repaired in November, users will continue to contend with UTC dates in other areas of the system, which could lead to user confusion and frustration, inaccurate reporting, and potentially customer/vendor confusion. Further, it remains unclear why Oracle and the SI has required DOE SMEs to research and log a ticket for each instance of the time zone bug rather than analyzing the bug themselves. Typically, system-wide bugs of this nature are consolidated into a single ticket that can be applied system-wide to display all dates in HST. IV&amp;V recommends DOE leadership escalate to Oracle executive leadership and insist efforts be made to prioritize and comprehensively repair an obvious bug that likely affects a broad customer base, not just DOE. As DOE SME’s knowledge of system security continues to grow, they are better able to assist the (primarily) single SI security resource and mitigate some security risks. DOE SMEs continue to report, and IV&amp;V has observed, that the SI security resource continues to struggle with effective communications, which has led to DOE SME frustration and could lead to inaccurate security configurations, which could lead to multiple user security related issues at go-live and increase the potential for fraud. It remains unclear whether the current security configurations fully support separation of duties and the principle of lease permissions (PoLP).</td>
</tr>
</tbody>
</table>
IV&V identified 12 findings (8 issues and 4 risks) for this reporting period. The following chart breaks down the findings by type/category/priority.

Findings by Type

Open Risks/Issues by Category/Priority

- SYSTEM ARCHITECTURE & DESIGN: 3 High
- COST & SCHEDULE MANAGEMENT: 1 Medium, 1 High
- QUALITY MANAGEMENT: 1 Medium, 1 High
- PROJECT ORGANIZATION & MANAGEMENT: 2 Medium, 1 High
- HUMAN RESOURCE MANAGEMENT: 2 Medium
# IV&V Findings and Recommendations (cont’d)

## Summary of IV&V Open Risks/Issues Criticality

<table>
<thead>
<tr>
<th>Category</th>
<th>Type</th>
<th>#</th>
<th>Finding Title</th>
<th>Criticality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost &amp; Schedule Management</td>
<td>Issue</td>
<td>3</td>
<td>Adoption of an aggressive schedule could lead to poor system quality, user frustration, stretch DOE resources beyond their capacity, and bad press.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Issue</td>
<td>4</td>
<td>Delayed finalization of the Project Management Plan (PMP) and schedule could lead to stakeholder confusion and less than informed planning and ultimately lead to reduced productivity and project delays.</td>
<td>Medium</td>
</tr>
<tr>
<td>Human Resource Management</td>
<td>Issue</td>
<td>2</td>
<td>Over reliance on a few skilled and overtaxed DOE project resources could lead to significant project disruption.</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Issue</td>
<td>5</td>
<td>SI staffing challenges could reduce project productivity and system design quality, and lead to schedule delays.</td>
<td>Medium</td>
</tr>
<tr>
<td>Project Organization &amp;</td>
<td>Risk</td>
<td>6</td>
<td>COVID-19 State-wide shutdown could hinder project activities and negatively impact the project schedule and budget.</td>
<td>Closed</td>
</tr>
<tr>
<td>Management</td>
<td>Risk</td>
<td>8</td>
<td>Inefficient project management practices could lead to overall lack of productive project activities and ultimately schedule delays.</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Risk</td>
<td>11</td>
<td>Insufficient knowledge transfer (KT) and M&amp;O planning prior to go-live could lead to project delays and diminished quality of post go-live support.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Risk</td>
<td>14</td>
<td>Training material development may be extensive and could lead to project delays or reduce the effectiveness of training</td>
<td>Medium</td>
</tr>
<tr>
<td>Quality Management</td>
<td>Issue</td>
<td>10</td>
<td>Inadequate release management processes could lead to significant rework and schedule delays.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Risk</td>
<td>12</td>
<td>Insufficient testing strategy and planning could lead to poor test quality, including incomplete and invalid test results.</td>
<td>Medium</td>
</tr>
<tr>
<td>System Architecture &amp; Design</td>
<td>Issue</td>
<td>7</td>
<td>Oracle Financials environment constraints could lead to schedule delays and leave the project unable to meet development, testing, and training objectives.</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Issue</td>
<td>9</td>
<td>User provisioning and security model complexities could lead to unmet user expectations, unfulfilled business objectives, and schedule delays.</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Issue</td>
<td>13</td>
<td>Integration with older (antiquated technology) systems could be unexpectedly complicated and lead to schedule delays.</td>
<td>Medium</td>
</tr>
</tbody>
</table>
**IV&V Findings and Recommendations (cont’d)**

### Cost & Schedule Management

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
</table>
| 3  | **Issue** - Adoption of an aggressive schedule could lead to poor system quality, user frustration, stretch DOE resources beyond their capacity, and bad press: In October of 2018, the aging DOE FMS failed, was offline for several weeks, and led to significant disruption of critical operations. As a result, the DOE quickly procured and launched this project with the goal of replacing their FMS as quickly as possible to avoid a similar event. The project is currently executing an aggressive, accelerated timeline with a January 2021 go-live date. This accelerated schedule incurs risks that the DOE has deemed acceptable given the potential larger risks associated with another legacy FMS failure. In order to speed implementation, the project has elected to implement a cloud-based Oracle Software-as-a-Service platform based on a pre-configured template, leverage Agile SDLC methods, limit the amount of new or improved functionality, and scaled back some project documentation and early analysis. The accelerated schedule could lead to:  
• Lack of thorough consideration of required business process changes resulting from the new system  
• User confusion and frustration due to the added burden of learning a new system with new processes, unmet expectations for improvements, and significant disruption to their daily duties  
• Over allocation of project resources and users  
• Significant OCM and Training efforts with limited time to plan and execute  
• Project decisions to cut corners to meet milestones and DOE expectation  
• Unproductive working sessions due to insufficient analysis efforts  
• Limited time to react to or resolve issues that may arise  
• Poor system design  
• A flurry of chaotic stakeholder activity as the project progresses closer to go-live. If this risk is realized, negative user feedback could lead to inflammatory media coverage which could negatively impact legislative, board of education, and public support. The project has stated they will only go live if the system sufficiently supports DOE operations and users are able to do their jobs.                                                                                                  | High               |
## IV&V Findings and Recommendations (cont’d)

### Cost & Schedule Management (cont’d)

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td><strong>Issue</strong> - Delayed finalization of the Project Management Plan (PMP) and schedule could lead to stakeholder confusion and less than informed planning and ultimately lead to reduced productivity and project delays. The project is currently operating under a draft Project Management Plan (PMP) and project schedule. The PMP was due 3/12/20 but, as of this reporting period, both have not been finalized. DOE project leadership has indicated that existing drafts appear to lack sufficient details. The projects accelerated schedule leaves little room for any impact to project productivity. Lack of a finalized PMP could lead to uncertainty around project scope and uncertainty around how the project will be executed or managed, which can reduce overall project cadence and productivity. Delays in establishing a clear, detailed baselined schedule could lead to project delays and leave the project unable to effectively monitor project progress. Further, the lack of a clear critical path could leave the project with little time to respond to critical path activities that may have already impacted the project go-live date.</td>
<td>Medium</td>
</tr>
</tbody>
</table>
**IV&V Findings and Recommendations (cont’d)**

### Cost & Schedule Management (cont’d)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Take steps to assure sufficient OCM planning, and activities are performed to</td>
<td>In progress</td>
</tr>
<tr>
<td>prepare users for the significant change taking place at an accelerated rate.</td>
<td></td>
</tr>
<tr>
<td>• Project leadership closely monitor project productivity and meet regularly to</td>
<td>In progress</td>
</tr>
<tr>
<td>perform continuous process improvement (continuously reach out for feedback and</td>
<td></td>
</tr>
<tr>
<td>move quickly to improve unproductive project elements and processes).</td>
<td></td>
</tr>
<tr>
<td>• Leadership take steps to closely monitor project team capacity and assure</td>
<td>In progress</td>
</tr>
<tr>
<td>resources are not overallocated.</td>
<td></td>
</tr>
<tr>
<td>• Request that the SI address issues with their project team that place an</td>
<td>In progress</td>
</tr>
<tr>
<td>unnecessary burden on overtaxed DOE SMEs.</td>
<td></td>
</tr>
<tr>
<td>• Project make early efforts to plan for and prepare contingency plans in the</td>
<td>In progress</td>
</tr>
<tr>
<td>event it becomes clear the accelerated schedule is unsustainable or critical</td>
<td></td>
</tr>
<tr>
<td>project objectives will not be met by the planned go-live date.</td>
<td></td>
</tr>
<tr>
<td>• Request the SI proactively augment their team with additional experienced</td>
<td>In progress</td>
</tr>
<tr>
<td>resources as needed to assure project milestone deadlines are met.</td>
<td></td>
</tr>
<tr>
<td>• DOE make extensive efforts to manage user expectations with regard to system</td>
<td>In progress</td>
</tr>
<tr>
<td>limitations and workarounds.</td>
<td></td>
</tr>
<tr>
<td>• DOE executive leadership clearly communicate to project stakeholders (including</td>
<td>In progress</td>
</tr>
<tr>
<td>testers) how they should prioritize project activities appropriately so that</td>
<td></td>
</tr>
<tr>
<td>the project can meet their go-live date.</td>
<td></td>
</tr>
</tbody>
</table>
## IV&V Findings and Recommendations (cont’d)

### Human Resource Management

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><strong>Issue</strong> - <em>Over reliance on a few skilled and overtaxed DOE project resources could lead to significant project disruption:</em> There are currently 3-4 DOE team members who are relied on to a greater extent than others. Each of these individuals have significant standing critical operational responsibilities and most have managerial responsibilities as well. While each of these team members have indicated a strong commitment to project success, each has multiple competing priorities, and most will be constrained with operational tasks between now and go-live. It remains unclear if DOE staffing levels committed to in the original Statement of Work (SOW) have been met. Over reliance on key resources can not only overtax and thereby reduce the effectiveness of these key individuals, but also presents a risk of significant project disruption in the event of their departure. While most projects have this risk, the risk impact for this project, from IV&amp;V’s perspective, is higher than most, and while the project could be impacted by the loss of any DOE team members, there are 3-4 individuals who are relied on to a greater extent than others. Loss of these individuals could lead to significant project disruption. Failure to transfer standing daily operational and managerial responsibilities from these individuals to other DOE resources could stretch them beyond their capacity and lead to a lack of job satisfaction, decreased productivity, decrease in quality, and increases the probably they could make critical mistakes that could negatively impact the project. Several of these key resources have indicated they have significant operational responsibilities and projects between now and go-live (e.g., year-end close, audit, the Time &amp; Leave project, preparations for the new school year, etc.) and may simply lack the capacity to meet all current expectations. Further, if the SI is not able to resolve some staffing challenges (see Risk #5), the project may increase their reliance on these individuals and may have to work harder to ensure system designs are accurate, project milestones are met, and overall project activities remain productive.</td>
<td>Medium</td>
</tr>
</tbody>
</table>
## IV&V Findings and Recommendations (cont’d)

### Human Resource Management (cont’d)

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td><strong>Issue</strong> - SI staffing challenges could reduce project productivity and system design quality, and lead to schedule delays: Since soon after project launch, the DOE project leadership has raised several concerns with regards to the SI project team. DOE stakeholders have reported that working session productivity has, at times, been hindered by the apparent lack of sufficient knowledge, capabilities, and expertise of some SI team members. While some appear to have some strong capabilities and financial system knowledge, others appear to lack the capability to drive productive discussions, quickly solution implementation issues, and accelerate the Software Development Lifecycle (SDLC). The SI has recently responded to DOE leadership concerns that the SI PM lacked sufficient capabilities, experience, and the temperament to perform effectively as the project PM. The SI has responded to these concerns and the engagement manager has temporarily taken over PM responsibilities and augmented their team with a project coordinator resource. DOE leadership has raised concerns with other SI leads as well and the SI appears to be making efforts to augment their staffing model to address each concern. Due to the accelerated project schedule, the project can ill afford to tolerate a lack of productivity given go-live is in 6 months. One of the primary factors of project success is establishing a skilled, experienced, productive, highly available and high-functioning team. If the SI is not able to quickly implement a staffing model that can establish this kind of team, the project schedule could be at risk. Further, the lack of sufficiently capable SI resources could weigh heavily on already constrained DOE SMEs as they attempt to compensate and extend additional efforts to ensure project milestones are met. The addition of highly capable and experienced SI resources could reduce the burden on DOE SMEs. This risk is likely to be exacerbated by the significant time zone difference between the project team (HST and PST) and the SI technical team who reside in India. The SI teams' apparent lack of deep, expert-level Oracle Financials (OF) cloud expertise could continue to reduce the productivity of work sessions and/or lead to poor design decisions that could require significant rework once a better design or solution is discovered.</td>
<td>Medium</td>
</tr>
</tbody>
</table>
### Human Resource Management (cont’d)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Executive leadership regularly monitor the workload and job satisfaction of key individuals as well as assist with workload management, clarification of priorities, and establishment of a sustainable pace.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Temporarily re-allocate operational/managerial responsibilities from key resources until project completion.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Consider temporary staff augmentation options (e.g., temps or 89-day hires) to both augment the existing project team and augment the operations staff to offload operational responsibilities from key resources.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Prepare contingency plans in the event that the DOE project team can no longer sustain project and operational activities at the expected pace.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Work closely with the SI in their staffing efforts and quickly, but thoroughly, vet additions to the SI project team.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Request the SI explore augmenting their team with highly capable, expert-level resources that can provide technical leadership that could potentially accelerate the project and reduce the burden on constrained DOE SMEs.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Request the SI make efforts to ensure solutions they have provided, and key decision documents are properly vetted by industry experts to ensure the best options are being presented to DOE SMEs.</td>
<td>Not started</td>
</tr>
</tbody>
</table>
### IV&V Findings and Recommendations (cont’d)

#### Project Management & Organization

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
</table>
| 6* | **Risk - COVID-19 State-wide shutdown could hinder project activities and negatively impact the project schedule and budget:** On 3/23/2020, the Governor issued a “stay at home, work from home order” that appears to have reduced the ability of the DOE to be fully functional, as the large majority of their workers have been required to work from home/remotely. Though the governor has allowed state workers to return to the workplace, many continue to work remotely. The state legislature is currently contemplating implementing 1-2 day/week furloughs as well as salary cuts for state workers to make up for budget shortfalls due to COVID-19. While the extent to which remote work requirements will impact the project are not fully known, it will likely complicate planning and execution of training, testing, and OCM. Many users have a strong preference for in-person training, however, due to social distancing policies, existing classroom capacity has been significantly reduced. Limited in-person training could lead to unmet user expectations and frustration as well as reduce the effectiveness of training. In the event in-person training is limited, project training planning and preparation will likely increase. If furloughs are mandated, the project may not be able to meet project milestone deadlines which could also negatively impact the project budget. IV&V will continue to monitor for other COVID-19 related impacts. Given that the project currently relies heavily on 3-4 key resources (see Finding #2), if any one of these individuals contract COVID-19, the project could be negatively impacted by their lack of availability. The project is currently faced with productivity and communication challenges because, due to COVID, the SI off-shore senior technical resources reside in India. Time zone (India team) challenges appear to have limited communications with the project team, and SMEs have often had to wait until the following day to get answers to some questions. Further, SMEs have indicated that the lack of in-person project work sessions has likely hindered their productivity.  

*Any remaining COVID risks that could impact training will be tracked as part of finding #14.*  

| Closed* |
## IV&V Findings and Recommendations (cont’d)

### Project Management & Organization (cont’d)

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
</table>
| 8  | **Risk** - Inefficient project management practices could lead to overall lack of productive project activities and ultimately schedule delays: This project is scoped to be staffed by both a DOE PM and an SI PM with the SI PM managing the bulk of SDLC activities with the DOE PM assisting in managing DOE assigned project activities. The DOE struggled to adequately staff the DOE PM position during the initial months of the project, until they were able to acquire a capable consultant to fill the role, April 2020. The project reported some early insufficient and inefficient project management processes, including:  
• Insufficient action item tracking and follow-up  
• Insufficient attention to risk management  
• Inefficient meetings  
• Lack of clear meeting objectives and late delivery of meeting agenda’s  
• Lack of preparation and planning for meetings and work sessions  
• Insufficient guidance on attendee management and vetting of attendees  
• Previous SI project manager (PM) had not met project expectations for project leadership, strategic direction, communication, and organization.  
The SI has recently responded to DOE leadership concerns by removing the SI PM and adding a project coordinator to their team, and the SI engagement manager has taken over as the PM and is now making some progress in addressing the above concerns. Lack of good project management processes can lead to an overall lack of project productivity, and ultimately lead to schedule delays and stakeholder frustration and reduced user buy-in. The SI appears to be making good progress in addressing DOE project management concerns. However, the impacts of operating the project under poor project management processes for the initial 5 months of the project remain unclear. Further, the current SI PM could be quickly overwhelmed as they attempt to fulfill both the PM and engagement manager roles, in addition to other responsibilities in their role as Vice President of Operations and senior CherryRoad executive (principle/partner). The recently added SI project coordinator appears to have had a positive impact on PM processes. | Medium |
### IV&V Findings and Recommendations (cont’d)

#### Project Management & Organization (cont’d)

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td><strong>Risk</strong> - Insufficient knowledge transfer and M&amp;O planning prior to go-live could lead to project delays and diminished quality of post go-live support.: There appears to be a lack of clarity around post go-live support responsibilities and the level of SI support. Apparently, some contractual post go-live support requirements have yet to be clarified and agreed to between the SI and DOE. Further, DOE expectations for the SI to train their IT staff have not been met. The DOE IT group currently has some interface development project responsibilities and DOE’s expectation was that the SI would provide sufficient knowledge transfer (KT) on Oracle Financials (OF) and Oracle Integration Cloud (OIC) in order to perform these tasks in a timely manner as well as meet expectations for DOE post go-live support responsibilities. DOE has stated their expectation that DOE IT staff would work alongside the SI technical team for KT throughout project implementation, however, the level of KT has not met DOE expectations thus far. If the DOE IT staff are not sufficiently trained to effectively implement their project tasks this could lead to a reduction of efficient execution and quality of the technical components they have been assigned and, ultimately, to schedule slippage. Lack of clarity or sufficient planning around post go-live support could lead to diminished quality of post go-live support. Failure to adequately augment the existing DOE IT group with OF skillsets could leave DOE unable to adequately support the new OF system post go-live and lead to an over-reliance on costly vendor resources and impact the project budget.</td>
<td>High</td>
</tr>
</tbody>
</table>
### IV&V Findings and Recommendations (cont’d)

#### Project Management & Organization (cont’d)

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td><strong>Risk</strong> - Training material development may be extensive and could lead to project delays or reduce the effectiveness of training. DOE leadership, including the Superintendent, has indicated that the quality, effectiveness, and comprehensiveness of training is a top priority. Early indications are that both the number and degree of changes may be significant. The project is currently tracking, via the project’s Change Impact Analysis (CIA) spreadsheet, impactful changes to users and daily operations with the implementation of the new system. Training material will need to effectively address these changes and prepare users for workarounds, process changes, and new system concepts. The SI has indicated that much of the system has maintained out of the box Oracle Financials functionality which should accelerate training material development. However, integrating CIA items into the training material could require a significant level of effort for both the SI and DOE. Because of the high priority given to the effectiveness of training, DOE review cycles may be unexpectedly extended in order to ensure quality. Given tight timelines and an aggressive go-live date, the project may elect to accept training material that does not fully meet their expectations, or they may elect to extend the schedule in order to resolve training material issues. The SI is in the process assessing whether increased resources or additional time needs to be allotted to this effort to ensure timely delivery of training materials.</td>
<td>Medium</td>
</tr>
</tbody>
</table>
### IV&V Findings and Recommendations (cont’d)

#### Project Management & Organization (cont’d)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Begin early contingency planning to address further impacts of COVID-19, such as potential furloughs as well as fully remote UAT and Training.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Perform an assessment of DOE remote capabilities prior to UAT and Training to determine stakeholder's ability and effectiveness in relying on remote access for project participation.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Continue to monitor project stakeholders and system users are sufficiently competent with remote meeting technology including ensuring they are highly functional with remote access technology (e.g. WebEx), as UAT and Training will likely require some level of (if not full) remote participation.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Send broad communications to assure stakeholders the project has a clear understanding of COVID-19 impacts to the project and provide regular updates, as appropriate, as new plans and tactics develop.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Detail relevant OCM strategies and plans for addressing the impacts of COVID-19 in the project OCM Plan.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Request the SI make efforts to address time zone challenges with the off-shore technical team.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Initiate efforts to request exemptions from hiring freeze constraints and furlough exemptions for the DOE project team.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Monitor and provide regular feedback on PM processes and implement continuous process improvement processes to assure consistent and effective project management.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Document and execute detailed risk mitigation steps for tasks that appear to be slipping that include offering additional resources to support project team members who are falling behind on critical path tasks.</td>
<td>In progress</td>
</tr>
</tbody>
</table>
### Quality Management

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td><strong>Issue</strong> – Inadequate release management processes could lead to significant rework and schedule delays: Due to existing Oracle Financials cloud limitations, upload of data is often difficult to back out. Errors made during data uploads can either require manual data entry corrections or an environment refresh that will likely take 3 weeks. During initial uploads to the development environment, the wrong version of a file use mistakenly uploaded which created some disruption of development activities. Due to limitations of the OF cloud limitations, back out of bad data or configurations is not always automated and therefore can require manual correction of data. Alternatively, if the data corruption is significant, the project may elect to refresh the environment to a previous state, however, an OF refresh will likely take 3 weeks, which may not be feasible given the tight deadlines. If comprehensive quality controls are not implemented as an integral part of release management processes, mistakes that are made by both DOE and the SI can be difficult to back out. Lack of clear upload file versioning and other controls could lead to wrong files being uploaded which could lead to disruption of development efforts and, if not caught, could lead to disruption of testing phases and ultimately, schedule slippage. If release management procedures are unclear or if the execution of release procedures lack sufficient rigor, the likelihood of missteps may increase. Missteps during testing or go-live could lead to user confusion, reduced user buy-in, costly schedule delays, reduced executive stakeholder project support, and a negative public perception that could be picked up by the local media (aka &quot;bad press&quot;).</td>
<td>High</td>
</tr>
</tbody>
</table>
IV&V Findings and Recommendations (cont’d)

Quality Management (cont’d)

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td><strong>Risk</strong> – <strong>Insufficient testing strategy and planning could lead to poor test quality, including incomplete and invalid test results:</strong> IV&amp;V has observed some unproductive test preparation work sessions and some confusion among the project team members as some elements of the test strategy and plan are unclear or not well defined. At times, it appears the SI is asking DOE test leads to perform activities they lack expertise to perform. DOE test leads have also stated that SI led testing preparation efforts have not always been productive and have not met their expectations that the SI would provide sufficient testing preparation guidance. The SI appears to have responded by replacing the SI Test Lead, and the SI PM has taken over as the SI Test Lead, despite concerns that the SI PM may be overallocated. It is unclear whether the SI PM has capacity to effectively lead the testing effort and provide DOE test leads with sufficient guidance for them to adequately prepare for testing. The SI reports that they are making efforts to find a permanent replacement. Additionally, IV&amp;V has concerns with the proposed testing strategy. The SI has stated they intend to begin System Integration Testing (SIT) without some system components being fully operational which could, A) result in incomplete testing and, B) invalidate test results for functionality that has been previously tested.</td>
<td>Medium</td>
</tr>
<tr>
<td>Recommendations</td>
<td>Progress</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>• Implement comprehensive and rigorous release management processes and quality controls (checks and double-checks).</td>
<td>In progress</td>
<td></td>
</tr>
<tr>
<td>• Clarify and fully vet the testing strategy and plans for DOE leads and stakeholders.</td>
<td>In progress</td>
<td></td>
</tr>
<tr>
<td>• Request the SI address their team’s failure to effectively follow release management processes.</td>
<td>In progress</td>
<td></td>
</tr>
</tbody>
</table>
### System Architecture & Design

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td><strong>Issue – Oracle Financials environment constraints could lead to schedule delays and leave the project unable to meet development, testing, and training objectives:</strong> The project has planned for a total of 4 environments, currently slated for development, testing, training, and production. Oracle Financials cloud service level agreements for environment refresh is reportedly 3 weeks. The SI has indicated they are working on a strategy for accomplishing project objectives with the limited environments and the DOE is reportedly making efforts to increase the number of environments. Typically, projects of this size, complexity, and pace rely on quick environment refreshes in order to effectively meet development, testing, and training objectives. Most will plan for an abundance of environments in order to avoid the need to repurpose environments, avoid project delays, and provide flexibility to “freeze” environments to improve testing and training quality. If the project is unable to quickly refresh environments and is has only a limited number of environments.</td>
<td>Medium</td>
</tr>
</tbody>
</table>
IV&V Findings and Recommendations (cont’d)

**System Architecture & Design (cont’d)**

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
</table>
| 9 | **Issue** – User provisioning and security model complexities could lead to unmet user expectations, unfulfilled business objectives, and schedule delays: Initial security discussions have revealed some complexities and challenges with implementing a security model that fully meets DOE business objectives including segregation of duties, principle of least privilege. The project has elected to implement a single Business Unit (BU) for all of DOE, which could create system implementation challenges given Oracle Financials security is optimally implemented for multiple BU's. The SI is making efforts to ensure DOE business objectives are met and can be implemented so as not to put an undue burden on user provisioning staff. Implementation of a security model that does not meet user expectations and fully support end user provisioning and segregation of duties controls can lead to user frustration that:  
• Security is too restrictive and hinders their ability to be productive and do their job  
• Security is overly permissive and privileged information is visible to other groups that do not have a business need for the data  
• User provisioning maintenance is overly complex and/or labor intensive  
• The security model has made testing overly complex due to tester user provisioning challenges  

The security model is currently being developed by a single SI resource. Failure to fully vet the proposed security model with multiple Oracle Financials cloud security experts and fully address DOE business objectives, could lead to project disruption in the event that a significant change to the model is needed as go-live approaches and as a result of mounting user complaints. | Medium |
# Key Findings Criticality

<table>
<thead>
<tr>
<th>#</th>
<th>Key Findings</th>
<th>Criticality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td><strong>Issue</strong> – <strong>Integration with older (antiquated technology) systems could be unexpectedly complicated and lead to schedule delays:</strong> The project currently has requirements to integrate with older systems that often lack sufficient documentation and/or system expertise. A number of systems that the new FMS must interface with are based on older technology that may be incompatible with new technology and can be difficult to integrate with. Many systems have accumulated a significant amount (decades in some instances) of technical debt, reportedly due to lack of funding and technical team capacity. For example, it has been reported that patching for many systems are severely out of date and may run on Operating Systems or other software technology/tools that are no longer supported by the vendor. Many of these systems no longer have system experts because support staff have moved on or retired, and documentation and/or knowledge transfer upon their departure may not have been sufficient. Documentation for many older systems is reportedly missing or incomplete. Unexpected complications that arise in attempts to integrate with antiquated systems can lead to project delays or unexpected costs for tools to compensate for limitations of antiquated systems. Interface development efforts can also be delayed when expected system documentation, expertise, or vendor support is no longer available. Given the amount of technical debt these systems have accumulated over the years and the lack of system patching, the system could open the FMS replacement system, other connected systems, and the DOE to undue system failure risks. If any of these antiquated DOE systems fail during project execution, project resources (who are already at capacity) will likely have to be reallocated towards repair and recovery of these systems and lead to schedule delays.</td>
<td>Medium</td>
</tr>
</tbody>
</table>
**Recommendations**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>• DOE leadership reevaluate the Oracle representative’s role on the project and request they provide better support for DOE technical leads for both pre and post go-live support.</td>
<td>Not started</td>
</tr>
<tr>
<td>• Make early OCM efforts to manage expectations based on platform limitations.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Establish clear controls with regard to fraud, segregation of duties, and least privilege permissions.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Request the SI develop an environment management plan with sufficient details to describe how the project will mitigate risks related to OF environment limitations.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Consider prioritizing patching and system upgrades to stabilize boundary systems.</td>
<td>In progress</td>
</tr>
<tr>
<td>• Strategically plan to procure or provision additional environments as necessary to assure accelerated development cycles as well as provision standby environments that will speed development in the event a critical environment has become corrupt (e.g., mistakes are made to irreversible fields).</td>
<td>In progress</td>
</tr>
<tr>
<td>• Consider implementing early, basic proof of concept interfacing with older systems to assure integration is feasible and to vet optimal interface solutions. Perform early discovery and due diligence to identify potential complications with integrating with older systems.</td>
<td>In progress</td>
</tr>
</tbody>
</table>
IV&V Status

- IV&V activities performed during the reporting period:
  - Attended Project Management meetings
  - Attended Weekly Managers & Leads meetings
  - Attended various Working Group sessions
  - Review relevant project documentation
  - Led IV&V Risk Review sessions with project leadership and the SI
  - Interviewed DOE and SI project team members
  - Produced IV&V Monthly Status Report

- IV&V next steps in the coming reporting period:
  - Attend key project meetings
  - Interview additional key project stakeholders
  - Deliver next IV&V Monthly Status Report
### Appendix A – IV&V Criticality Ratings

This appendix provides the details of each finding and recommendation identified by IV&V. Project stakeholders are encouraged to review the findings and recommendations log details as needed.

See definitions of Criticality Ratings below:

<table>
<thead>
<tr>
<th>Criticality Rating</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>A high rating is assigned if there is a possibility of substantial impact to product quality, scope, cost, or schedule. A major disruption is likely, and the consequences would be unacceptable. A different approach is required. Mitigation strategies should be evaluated and acted upon immediately.</td>
</tr>
<tr>
<td>M</td>
<td>A medium rating is assigned if there is a possibility of moderate impact to product quality, scope, cost, or schedule. Some disruption is likely, and a different approach may be required. Mitigation strategies should be implemented as soon as feasible.</td>
</tr>
<tr>
<td>L</td>
<td>A low rating is assigned if there is a possibility of slight impact to product quality, scope, cost, or schedule. Minimal disruption is likely, and some oversight is most likely needed to ensure that the risk remains low. Mitigation strategies should be considered for implementation when possible.</td>
</tr>
</tbody>
</table>
Appendix B – IV&V Standard Inputs

To keep abreast of status throughout the project, IV&V regularly:

• Attends the project meetings
• Reviews the project documentation
• Utilizes Eclipse IV&V® Base Standards and Checklists
Appendix C – IV&V Details

• What is Independent Verification and Validation (IV&V)?
  • Oversight by an independent third party that assesses the project against industry standards to provide an unbiased view to stakeholders
  • The goal of IV&V is to help the State get the solution they want based on requirements and have it built according to best practices
  • IV&V helps improve design visibility and traceability and identifies (potential) problems early
  • IV&V objectively identifies risks and communicates to project leadership for risk management

• PCG IV&V Methodology
  • Consists of a 4-part process made up of the following areas:
    1. Discovery – Discovery consists of reviewing documentation, work products and deliverables, interviewing project team members, and determining applicable standards, best practices and tools
    2. Research and Analysis – Research and analysis is conducted in order to form an objective opinion.
    3. Clarification – Clarification from project team members is sought to ensure agreement and concurrence of facts between the State, the Vendor, and PCG.
    4. Delivery of Findings – Findings, observations, and risk assessments are documented in this monthly report and the accompanying Findings and Recommendations log. These documents are then shared with project leadership on both the State and Vendor side for them to consider and take appropriate action on.

Note: This report is a point-in-time document with findings accurate as of the last day in the reporting period.
In October of 2018, the aging DOE FMS failed, was out of service for several weeks, and led to significant disruption of critical operations. As a result, the DOE project quickly launched and structured this project with the plans of replacing its existing FMS with a new system by January 2021. This accelerated schedule relied on several key assumptions: (a) that the existing critical operational processes and project management functions would be off-loaded to existing DOE resources, (b) that the potential risks associated with another legacy system disruption would not occur, (c) that critical persons and systems would be available, and (d) that the DOE could manage its workload and still meet its go-live requirements.

The DOE PM (a Gartner subcontractor) recently announced they will be leaving the project part way through the project with no clear replacement identified as of this writing. The DOE PM’s departure comes part way through the project but it remains unclear if the new resource will be able to provide the same level of support the recently departed PM. Key DOE project participants have stated they continue to operate at their maximum capacity and IV&V remains concerned that many important planned activities have been pushed out closer to go-live which presents a risk that the month prior to go-live (June 2021) could require more attention than the team has capacity to accomplish, resulting in further sacrifice of other critical operational schedules.

The DOE project schedule is not fully measured, there is currently no clear way to determine the workload of IV&V and whether they will have time to complete assignments prior to go-live. As a result, some stakeholders have indicated they have concerns that the system will not support DOE operations.

2) Some functionality has yet to be fully vetted, implemented, and fully tested. (04/15/2021 - Some stakeholders have indicated they have concerns that the system will not support DOE operations.)

a) Over-reliance on key resources can not only overtax and stretch the capacity of these key individuals to the point that they are unable to perform their primary responsibilities and project team can no longer sustain project and operational activities. Over-reliance on key resources can not only overtax the critical individuals, thereby reduce the effectiveness of these key individuals, and users are able to do their jobs.

b) Over-reliance on key resources can not only overtax and stretch the capacity of these key individuals to the point that they are unable to perform their primary responsibilities and project team can no longer sustain project and operational activities. Over-reliance on key resources can not only overtax the critical individuals, thereby reduce the effectiveness of these key individuals, and users are able to do their jobs.

The synchronized schedule could lead to:

i) Backlog of critical ongoing business processes for the next system.
ii) Critical overloading and frustration due to the added burden learning of a new system with new processes, system expectations for improvements, and significant disruptions.
iii) Critical project resource requests for immediate availability.
iv) Critical attention to meet deadlines and critical project milestone deadlines.

The potential to develop an integrated support plan can be effectively underway but it remains unclear if the new resource will be able to provide the same level of support the recently departed PM. Key DOE project participants have stated they continue to operate at their maximum capacity and IV&V remains concerned that many important planned activities have been pushed out closer to go-live which presents a risk that the month prior to go-live (June 2021) could require more attention than the team has capacity to accomplish, resulting in further sacrifice of other critical operational schedules.

The DOE project schedule is not fully measured, there is currently no clear way to determine the workload of IV&V and whether they will have time to complete assignments prior to go-live. As a result, some stakeholders have indicated they have concerns that the system will not support DOE operations.

2) Some functionality has yet to be fully vetted, implemented, and fully tested. (04/15/2021 - Some stakeholders have indicated they have concerns that the system will not support DOE operations.)

a) Over-reliance on key resources can not only overtax and stretch the capacity of these key individuals to the point that they are unable to perform their primary responsibilities and project team can no longer sustain project and operational activities. Over-reliance on key resources can not only overtax the critical individuals, thereby reduce the effectiveness of these key individuals, and users are able to do their jobs.

b) Over-reliance on key resources can not only overtax and stretch the capacity of these key individuals to the point that they are unable to perform their primary responsibilities and project team can no longer sustain project and operational activities. Over-reliance on key resources can not only overtax the critical individuals, thereby reduce the effectiveness of these key individuals, and users are able to do their jobs.

The synchronized schedule could lead to:

i) Backlog of critical ongoing business processes for the next system.
ii) Critical overloading and frustration due to the added burden learning of a new system with new processes, system expectations for improvements, and significant disruptions.
iii) Critical project resource requests for immediate availability.
iv) Critical attention to meet deadlines and critical project milestone deadlines.

The potential to develop an integrated support plan can be effectively underway but it remains unclear if the new resource will be able to provide the same level of support the recently departed PM. Key DOE project participants have stated they continue to operate at their maximum capacity and IV&V remains concerned that many important planned activities have been pushed out closer to go-live which presents a risk that the month prior to go-live (June 2021) could require more attention than the team has capacity to accomplish, resulting in further sacrifice of other critical operational schedules.

The DOE project schedule is not fully measured, there is currently no clear way to determine the workload of IV&V and whether they will have time to complete assignments prior to go-live. As a result, some stakeholders have indicated they have concerns that the system will not support DOE operations.

2) Some functionality has yet to be fully vetted, implemented, and fully tested. (04/15/2021 - Some stakeholders have indicated they have concerns that the system will not support DOE operations.)

a) Over-reliance on key resources can not only overtax and stretch the capacity of these key individuals to the point that they are unable to perform their primary responsibilities and project team can no longer sustain project and operational activities. Over-reliance on key resources can not only overtax the critical individuals, thereby reduce the effectiveness of these key individuals, and users are able to do their jobs.

b) Over-reliance on key resources can not only overtax and stretch the capacity of these key individuals to the point that they are unable to perform their primary responsibilities and project team can no longer sustain project and operational activities. Over-reliance on key resources can not only overtax the critical individuals, thereby reduce the effectiveness of these key individuals, and users are able to do their jobs.
| # | Work Item | Title / Summary | Finding Description | Analysis and Significance | Recommendation | Updates | Category | Type | Priority | Status | Closure Reason | Closed Date | Identified Date | Manifested Date |
|---|-----------|-----------------|---------------------|------------------------|------------------------|----------------|-----------|---------|-------|--------|--------|----------------|-------------|----------------|---------------|
| 1 | Delays in PMP & SI Staffing and Project Delays | We are currently operating under a draft Project Management Plan (PMP) and project schedule. | The project is currently operating under a draft Project Management Plan (PMP) and project schedule. The PMP development was due 1/15/2020, but, if this reporting period, 40% have not been finalized. SI project leadership has indicated that existing delays appear to lack sufficient details. | The project's accelerated schedule leaves DOE and the SI staff to proactively identify project delays. The project's accelerated schedule leaves DOE and the SI staff to proactively identify project delays. | Request SI to clearly define the project schedule critical path, monitor and manage the project's delay to critical path activities that are falling behind. | | | | | | | | 06/15/2021 | 06/15/2021 | 06/15/2021 |
| 2 | SI staffing challenges | SI staffing challenges have reduced project productivity and system design quality and impacted scheduling delays. | SI staffing challenges have reduced project productivity and system design quality and impacted scheduling delays. | SI staffing challenges have reduced project productivity and system design quality and impacted scheduling delays. | • Request SI to ensure that solutions they have sufficiently address technical leadership concerns. | | | | | | | | 04/15/2021 | 04/15/2021 | 04/15/2021 |
| 3 | Reduced system design quality and scheduling delays | SI staffing challenges and scheduling delays have been a contributing factor to interface and conversion task delays. The SI has committed to modifying their approach to improve work quality. | SI staffing challenges and scheduling delays have been a contributing factor to interface and conversion task delays. The SI has committed to modifying their approach to improve work quality. | SI staffing challenges and scheduling delays have been a contributing factor to interface and conversion task delays. The SI has committed to modifying their approach to improve work quality. | | | | | | | | 06/15/21 - DOE has accepted the risk that the SI will not provide a fully resourced project plan for program activities. IV&V recommends DOE request SI to provide a fully resourced project plan for program activities. | 06/15/21 - DOE has accepted the risk that the SI will not provide a fully resourced project plan for program activities. IV&V recommends DOE request SI to provide a fully resourced project plan for program activities. | 06/15/21 | 06/15/21 | 06/15/21 |
ID | Report Date | Title / Summary | Finding Description | Analysis and Significance | Recommendation | Updates | Category | Type | Priority | Status | Close Reason | Close Date | Manifested Date
---|-------------|----------------|---------------------|-------------------------|----------------------|----------|----------|-------|---------|-------|-------------|------------|-------------------
8 | 6/30/2020 | Inefficient project activities and lack of productive meeting sessions | Oracle Financials (OF) platform bugs that have hindered project productivity and complicated testing efforts. For example, Oracle has yet to resolve a platform bug where the Hawaii Standard Time (HST) default setting is inconsistently applied throughout the system. The bug has impacted OF's ability to securely attach files to a single business unit (BU) instead of all dates in HST. IV&V recommends DOE leadership escalate to Oracle executive leadership and insist efforts be made to comprehensively resolve this bug to less impacts in future business cases. | | | | | | | | | | |
The project has encountered significant security-related issues, which have led to delays in the schedule and increased costs. The main challenges include:

- Lack of clear upload file versioning and other quality controls, which make it difficult to back out changes.
- Insufficient testing rigor, leading to potential security vulnerabilities.
- Need for better communication and coordination among project teams.

Recommendations:

1. **Implement Comprehensive Reuse Management Policies**: Develop and implement comprehensive reuse management policies that include:
   - Quality controls to ensure that only approved configurations are reused.
   - Clear versioning and tracking of modifications.
   - Regular audits to verify compliance.

2. **Enhance Security Testing**: Strengthen security testing practices by:
   - Conducting more thorough testing early in the project lifecycle.
   - Increasing the frequency of security tests.
   - Engaging external security experts.

3. **Improve Communication and Coordination**: To reduce miscommunications and delays, ensure:
   - Regular meetings between project teams.
   - Clear and concise communication across all levels.
   - Enhanced collaboration mechanisms.

4. **Implement Segregation of Duties**: institute segregation of duties to reduce the risk of errors and fraud.

5. **Increase Quality Controls**: Strengthen quality controls to ensure:
   - Consistent application across all environments.
   - Regular reviews and audits.
   - Enhanced change management processes.

6. **Train Personnel**: Enhance training programs to:
   - Increase awareness of security risks.
   - Improve technical skills.
   - Foster a culture of security.

7. **Implement Least Privilege Policies**: Ensure that all access is granted on a need-to-know basis.

8. **Develop Reusable Security Frameworks**: Develop frameworks that can be reused across different projects.

9. **Establish Regular Communications**: Ensure regular communications:
   - Between project teams.
   - With stakeholders.
   - Throughout the project lifecycle.

10. **Implement Regular Assessments**: Conduct regular security assessments:
   - To identify potential vulnerabilities.
   - To validate security improvements.
   - To enforce compliance with security policies.

11. **Enhance Security Training Programs**: Strengthen security training programs to:
    - Provide ongoing training for all staff.
    - Ensure that training is up-to-date.
    - Include practical exercises.

12. **Implement Segregation of Duties Controls**: Implement controls to ensure that each role is isolated from the others.

13. **Enhance Change Management Processes**: Strengthen change management processes to:
    - Ensure that changes are properly documented.
    - Implement thorough testing before changes are deployed.
    - Reduce the risk of unauthorized changes.

14. **Improve Security Communication**: Enhance security communication to:
    - Ensure that all stakeholders are informed.
    - Provide clear and concise information.
    - Foster a culture of open communication.

15. **Implement Regular Audits**: Conduct regular audits to:
    - Verify compliance with security policies.
    - Identify potential vulnerabilities.
    - Improve overall security posture.

16. **Enhance Security Testing Practices**: Strengthen security testing practices to:
    - Conduct thorough testing of all new configurations.
    - Implement automated testing.
    - Ensure that testing is conducted by independent security experts.

17. **Implement Segregation of Duties Controls**: Implement controls to ensure that each role is isolated from the others.

18. **Enhance Change Management Processes**: Strengthen change management processes to:
    - Ensure that changes are properly documented.
    - Implement thorough testing before changes are deployed.
    - Reduce the risk of unauthorized changes.

19. **Improve Security Communication**: Enhance security communication to:
    - Ensure that all stakeholders are informed.
    - Provide clear and concise information.
    - Foster a culture of open communication.

20. **Implement Regular Audits**: Conduct regular audits to:
    - Verify compliance with security policies.
    - Identify potential vulnerabilities.
    - Improve overall security posture.

21. **Enhance Security Testing Practices**: Strengthen security testing practices to:
    - Conduct thorough testing of all new configurations.
    - Implement automated testing.
    - Ensure that testing is conducted by independent security experts.

22. **Implement Segregation of Duties Controls**: Implement controls to ensure that each role is isolated from the others.

23. **Enhance Change Management Processes**: Strengthen change management processes to:
    - Ensure that changes are properly documented.
    - Implement thorough testing before changes are deployed.
    - Reduce the risk of unauthorized changes.

24. **Improve Security Communication**: Enhance security communication to:
    - Ensure that all stakeholders are informed.
    - Provide clear and concise information.
    - Foster a culture of open communication.

25. **Implement Regular Audits**: Conduct regular audits to:
    - Verify compliance with security policies.
    - Identify potential vulnerabilities.
    - Improve overall security posture.
If the DOE staff are not sufficiently trained to effectively implement their project tasks this could lead to a reduction in efficient execution and quality of the technical deliverables they have been assigned and, ultimately, to schedule slippage. Lack of staff efficiency planning and post go-live support could lead to discrepancies if post-go-live support. Failure to adequately align the training DOE IT staff with DOE’s needs could lead DOE IT staff to adequately support the new OF system post-go-live lead to slower execution on even smaller resource impact and project impact.

• DOE develop a resource management plan to address gaps in their existing ITF to ensure they are able to meet expectations for project implementation and post go-live support. Plan may include augmenting ITF staff with additional resources to, at minimum, maintain current schedule and project impact and project impact consistency with existing ITF staff.

• DOE explore seeking legislative exemptions to acquire experienced Oracle Financials (OF) resource to fill specific roles in the ITF staff as so possible to reduce dependence on existing support teams to fulfill current customer obligations and project impact consistency with existing ITF staff.

• DOE provide sufficient ITF resource development (KT) data to present to the legislature that clearly justify the cost and highly compensated ITF (possibly exempt) resources that could provide cost savings for the state compared to the current cost of support and/or vendor support contracts.

• Clearly define, testing and go-live support service level agreements will need to address both resource reallocations and last-minute efforts to adequately support the system post-go-live.

• Consider instituting a distributed model (strategy e.g., Super SME) to support tier 1 user assistance, on-going operations, and DOE communications.

• DOE work quickly to appoint a resource to lead the development and execution of a comprehensive support plan.

• DOE leadership clearly communicate relevant resources the priority and importance of establishing a fully operational support infrastructure prior to go-live.

Recommendations

• DOE leadership clearly communicate the priority and importance of establishing a fully operational support infrastructure prior to go-live.

Updates

• DOE leadership clearly communicate the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE clearly define the testing strategy and plan for DOE staff and stakeholders.

• DOE develop a resource management plan to address gaps in their existing ITF to ensure they are able to meet expectations for project implementation and post go-live support. Plan may include augmenting ITF staff with additional resources to, at minimum, maintain current schedule and project impact and project impact consistency with existing ITF staff.

• DOE provide sufficient ITF resource development (KT) data to present to the legislature that clearly justify the cost and highly compensated ITF (possibly exempt) resources that could provide cost savings for the state compared to the current cost of support and/or vendor support contracts.

• Clearly define, testing and go-live support service level agreements will need to address both resource reallocations and last-minute efforts to adequately support the system post-go-live.

• Consider instituting a distributed model (strategy e.g., Super SME) to support tier 1 user assistance, on-going operations, and DOE communications.

• DOE work quickly to appoint a resource to lead the development and execution of a comprehensive support plan.

• DOE leadership clearly communicate relevant resources the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE leadership clearly communicate the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE clearly define the testing strategy and plan for DOE staff and stakeholders.

• DOE develop a resource management plan to address gaps in their existing ITF to ensure they are able to meet expectations for project implementation and post go-live support. Plan may include augmenting ITF staff with additional resources to, at minimum, maintain current schedule and project impact and project impact consistency with existing ITF staff.

• DOE provide sufficient ITF resource development (KT) data to present to the legislature that clearly justify the cost and highly compensated ITF (possibly exempt) resources that could provide cost savings for the state compared to the current cost of support and/or vendor support contracts.

• Clearly define, testing and go-live support service level agreements will need to address both resource reallocations and last-minute efforts to adequately support the system post-go-live.

• Consider instituting a distributed model (strategy e.g., Super SME) to support tier 1 user assistance, on-going operations, and DOE communications.

• DOE work quickly to appoint a resource to lead the development and execution of a comprehensive support plan.

• DOE leadership clearly communicate relevant resources the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE leadership clearly communicate the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE clearly define the testing strategy and plan for DOE staff and stakeholders.

• DOE develop a resource management plan to address gaps in their existing ITF to ensure they are able to meet expectations for project implementation and post go-live support. Plan may include augmenting ITF staff with additional resources to, at minimum, maintain current schedule and project impact and project impact consistency with existing ITF staff.

• DOE provide sufficient ITF resource development (KT) data to present to the legislature that clearly justify the cost and highly compensated ITF (possibly exempt) resources that could provide cost savings for the state compared to the current cost of support and/or vendor support contracts.

• Clearly define, testing and go-live support service level agreements will need to address both resource reallocations and last-minute efforts to adequately support the system post-go-live.

• Consider instituting a distributed model (strategy e.g., Super SME) to support tier 1 user assistance, on-going operations, and DOE communications.

• DOE work quickly to appoint a resource to lead the development and execution of a comprehensive support plan.

• DOE leadership clearly communicate relevant resources the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE leadership clearly communicate the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE clearly define the testing strategy and plan for DOE staff and stakeholders.

• DOE develop a resource management plan to address gaps in their existing ITF to ensure they are able to meet expectations for project implementation and post go-live support. Plan may include augmenting ITF staff with additional resources to, at minimum, maintain current schedule and project impact and project impact consistency with existing ITF staff.

• DOE provide sufficient ITF resource development (KT) data to present to the legislature that clearly justify the cost and highly compensated ITF (possibly exempt) resources that could provide cost savings for the state compared to the current cost of support and/or vendor support contracts.

• Clearly define, testing and go-live support service level agreements will need to address both resource reallocations and last-minute efforts to adequately support the system post-go-live.

• Consider instituting a distributed model (strategy e.g., Super SME) to support tier 1 user assistance, on-going operations, and DOE communications.

• DOE work quickly to appoint a resource to lead the development and execution of a comprehensive support plan.

• DOE leadership clearly communicate relevant resources the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE leadership clearly communicate the priority and importance of establishing a fully operational support infrastructure prior to go-live.

• DOE clearly define the testing strategy and plan for DOE staff and stakeholders.

• DOE develop a resource management plan to address gaps in their existing ITF to ensure they are able to meet expectations for project implementation and post go-live support. Plan may include augmenting ITF staff with additional resources to, at minimum, maintain current schedule and project impact and project impact consistency with existing ITF staff.

• DOE provide sufficient ITF resource development (KT) data to present to the legislature that clearly justify the cost and highly compensated ITF (possibly exempt) resources that could provide cost savings for the state compared to the current cost of support and/or vendor support contracts.

• Clearly define, testing and go-live support service level agreements will need to address both resource reallocations and last-minute efforts to adequately support the system post-go-live.

• Consider instituting a distributed model (strategy e.g., Super SME) to support tier 1 user assistance, on-going operations, and DOE communications.

• DOE work quickly to appoint a resource to lead the development and execution of a comprehensive support plan.

• DOE leadership clearly communicate relevant resources the priority and importance of establishing a fully operational support infrastructure prior to go-live.
<table>
<thead>
<tr>
<th>ID</th>
<th>State Date</th>
<th>Title / Summary</th>
<th>Finding Description</th>
<th>Analysis and Significance</th>
<th>Recommendation</th>
<th>Updates</th>
<th>Category</th>
<th>Type</th>
<th>Priority</th>
<th>Status</th>
<th>Closure Reason</th>
<th>Gland Date</th>
<th>Manifested Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2/15/2021</td>
<td>Training material development may be impacted by training management software limitation</td>
<td>DOE leadership, including the Superintendant, has indicated that the capacity, effectiveness, and comprehensiveness of training is a top priority. Early evaluations are that the number and degree of changes may be significant. The project is currently considering the implementation of a new training management software. The product (LMS) limitations can make it difficult to make quick changes to training materials.</td>
<td>Unexpected complications may impact the project's ability to integrate with the project's technical infrastructure. This could be due to a lack of training management software compatibility or resource constraints.</td>
<td>Recommend the project to ensure the technical infrastructure is compatible with the training management software.</td>
<td>04/26/21 - The project has made progress in integrating with the training management software. The project is scheduled to complete the integration by 04/26/21.</td>
<td>Improving Quality Assurance &amp; Education</td>
<td>Medium</td>
<td>Critical</td>
<td>Closed</td>
<td>None of the changes may have been sufficient. The project team is currently reviewing the training materials to ensure they are compatible with the training management software.</td>
<td>05/15/2021</td>
<td>06/15/2021</td>
</tr>
<tr>
<td>2</td>
<td>2/15/2021</td>
<td>Training material development may be impacted by training management software limitation</td>
<td>DOE leadership, including the Superintendant, has indicated that the capacity, effectiveness, and comprehensiveness of training is a top priority. Early evaluations are that the number and degree of changes may be significant. The project is currently considering the implementation of a new training management software. The product (LMS) limitations can make it difficult to make quick changes to training materials.</td>
<td>Unexpected complications may impact the project's ability to integrate with the project's technical infrastructure. This could be due to a lack of training management software compatibility or resource constraints.</td>
<td>Recommend the project to ensure the technical infrastructure is compatible with the training management software.</td>
<td>04/26/21 - The project has made progress in integrating with the training management software. The project is scheduled to complete the integration by 04/26/21.</td>
<td>Improving Quality Assurance &amp; Education</td>
<td>Medium</td>
<td>Critical</td>
<td>Closed</td>
<td>None of the changes may have been sufficient. The project team is currently reviewing the training materials to ensure they are compatible with the training management software.</td>
<td>05/15/2021</td>
<td>06/15/2021</td>
</tr>
</tbody>
</table>