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June 18, 2021

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 (Jun 18, 2021 16:50 HST)

Douglas Murdock
Chief Information Officer
State of Hawai'i

Attachment (2)

FMS Modernization Project

Department of Education (DOE)

IV&V Monthly Status Report – **Final**

For Reporting Period: **March 16 – April 15, 2021**

Draft Submitted: May 10, 2021

Final Submitted: June 4, 2021

PUBLIC CONSULTING GROUP

Solutions that Matter

Overview

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- IV&V Findings and Recommendations
- IV&V Status
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Executive Summary

Despite some challenges, the project continues to make progress toward achieving their planned 7/16/2021 go-live date. The project has begun the Rehearsal Smoke Test (RST) environment build and completed the majority of test scripts for UAT. However, delays (primarily with interfaces and conversion) continue to hinder progress, which will likely delay closeout of User Acceptance Testing (UAT) by at least 1 week. Some project team members continue to work overtime and on weekends to ensure they can meet their aggressive go-live date and appear to be making good progress despite the recent convergence of multiple workstreams including, rehearsal environment build, training material development, and UAT.

IV&V and DOE PMO continue to note instances where the project team has chosen expedience over quality (e.g., cutting corners on tasks to meet deadlines). As go-live draws near, the project continues to carry risks to quality, cost, and schedule primarily due to overlapping UAT and RST, the planned late introduction of some functionality, and the potential lack of adequate test script coverage. DOE has stated they plan to formulate a regression testing plan that could mitigate some of these risks. The project team capacity risk has increased as 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 activities than the team has capacity to accomplish, resulting in further sacrifice of quality or schedule slippage. Because the project schedule is not fully resourced, there is currently no objective way to determine which remaining system features will be completed prior to go-live, which could complicate training and increase user frustration as they may not know, at the time of training, exactly which features (or required work arounds) will be available at go-live. IV&V recommends DOE make extensive efforts to manage user expectations by communicating what functionality will be available at go-live, what workarounds will be required, and when functionality to eliminate workarounds will be implemented, in order to maintain user buy-in. Further, as important milestones draw near, IV&V recommends DOE executive leadership clearly communicate to project stakeholders (including testers) how they should prioritize project activities appropriately so that the project can meet their go-live date.

The project has recently named the new Financial Management System (FMS), "Aukahi FMS", which will be referenced as "Aukahi" on IV&V reports going forward.

Executive Summary (cont'd)

Feb	Mar	Apr	Category	IV&V Observations
M	M	H	Cost & Schedule Management	The project team continues to make extensive efforts to ensure they can meet their aggressive go-live date and appears to be making good progress despite the recent convergence of multiple workstreams (kickoff of the rehearsal environment build, training material development, and UAT). Though the project has accepted the risk of a less than comprehensive and fully resourced project plan, the SI continues to make efforts to mitigate this risk by building out a detailed cutover plan and providing project participants detailed, prioritized task lists. The project is also tracking, in a consolidated list, pre-go-live items that have been deprioritized (in order to focus on prioritized critical tasks) as well as tasks that will be completed soon after go-live. While this should help to assure important system features or tasks are not forgotten or missed, there remains no way of knowing which features/tasks can be completed before go-live or when they will be completed post go-live. This could complicate training and increase user frustration as they may not know, at the time of training, exactly which features (or required work arounds) will be available at go-live. If user expectations are not managed well, user buy-in could be challenging. Users may have few assurances as to when some system functionality will become available post go-live. Additionally, some stakeholders have already indicated that they have concerns that the system will have limited capabilities at go-live due to the aggressive schedule. As go-live draws near, IV&V remains concerned that some functionality has yet to be fully vetted, implemented, and unit tested (e.g., purchase order approvals). IV&V also remains concerned that testing scripts may have been less than comprehensive due to the tight schedule which could impact system quality and lead to excessive bugs at go-live. Users may be allowed to enter invalid entries in the new system (mistakes that were blocked in legacy FMS) that could create additional bugs and/or require DOE SME extend efforts to identify and cleanup errors. Due to all the concerns mentioned here and the related category risks, IV&V has escalated this category risk to "High". This risk rating is based on the quantity, collective impact, and increased probability of IV&V and DOE PMO identified risks, as well as the ever-shortening window of time to implement risk mitigation. IV&V recommends DOE make extensive OCM efforts to manage user expectations at go-live as well as devote resources to actively monitor user inputs/actions post go-live, correct errors, and coach users on proper usage of the system.

Executive Summary (cont'd)

Feb	Mar	Apr	Category	IV&V Observations
M	M	M	Human Resources Management	DOE project participants continue to state their strong commitment to ensure the project stays on schedule and continue to make efforts to improve the quality of system design and configuration. Key DOE project participants have stated they continue to operate at their maximum capacity which is beyond expectations and not typically a sustainable workload for DOE staff. Some have noted that the project has taken a toll on them, and some have expressed fatigue from the consistently long hours, frustration with the productivity challenges the project continues to face, and the burden of ensuring quality with technology they do not fully understand. The DOE PM (a Gartner subcontractor) recently announced they will be leaving the project and the position will be backfilled by another Gartner resource. Turnover to the new PM is underway but it remains unclear if the new resource will be able to provide the same level of support and risk mitigation provided by the outgoing PM given that this will be their first exposure to the project, three months prior to go-live. The burden to fill this potential gap could fall on DOE SMEs. IV&V recommends DOE request the SI provide additional PM support to help compensate for the potential drop in DOE PM support. The project is compiling a list of activities/tasks that need to be completed pre- and post- go-live. As this list grows, it remains unclear if DOE SMEs will be able to complete some pre-go-live tasks as the level of effort for these tasks is not being estimated and DOE SME resource capacity is not being tracked. The project capacity risks are increasing as 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 activities than the team has capacity to accomplish resulting in further sacrifice of quality and/or schedule slippage. The DOE IT team project participation continues to be constrained by multiple competing non-FMS DOE priorities. As DOE SMEs become more familiar with and explore system configuration options, they have found solutions that even the SI may not have been aware of. IV&V and DOE SMEs have observed instances of the SI's lack of expert-level knowledge of the system and their failure to communicate when mistakes are made, which has created confusion and frustration for DOE SMEs. IV&V recommends DOE request the SI increase their level of transparency and communication as the project makes the final push toward go-live. It has also become clear that the SI global team's inability to effectively manage staff across time zones continues to be a contributing factor to interface and conversion task delays. The SI has committed to modifying their global team hours to more closely align with Hawaii (HST) hours, however it remains unclear if this is consistently or effectively applied.

Executive Summary (cont'd)

Feb	Mar	Apr	Category	IV&V Observations
M	M	M	Project Management & Organization	DOE SMEs continue to report, and IV&V has observed, instances of SI lead's lack of meeting preparation. It appears the SI continues to rely on meetings with multiple participants to collaborate amongst themselves and resolve project issues. IV&V continues to highlight this risk to project team capacity and recommends DOE leadership request the SI team members explore more efficient methods (e.g., calling key SMEs prior to meetings) to speed communications and reduce time spent in meetings so they can be more productive and be freed up to work on project activities. IV&V and DOE SMEs have noted that SI leads continue to make the same mistakes despite DOE SME feedback on important management processes and practices that need improvement. The SI approach to team coaching and continuous process improvement remains unclear. IV&V recommends DOE request the SI consistently coach their team members for continuous process improvement and on how to effectively manage their tasks. The SI team's limited project and task management capabilities, along with the SI global team's management of staff in different time zones continues to delay interfaces, conversion, and other project tasks. Security Knowledge Transfer (KT) sessions appear to have improved after the SI made some resource changes and made improvements to the KT materials. IV&V and the DOE PMO remains concerned that the DOE may not be fully prepared to support the system post go-live and/or post warrant when the existing SI team is no longer available to assist. Early KT security sessions seem to indicate that Oracle security configurations are complicated, and DOE IT support staff may have difficulty troubleshooting and effectively resolving support tickets in a timely manner. IV&V recommends DOE explore Oracle training options for their support staff and augment their team with additional resources to support the system and manage Oracle quarterly updates. The project is making extensive efforts to complete their first Aukahi introductory course which should be available for users the week of 4/26/21. DOE is also planning to provide supplementary support material to their users including policy/procedure documentation, walkthroughs of functional processes, guides to using forms, vendor payment charts, and a terminology crosswalk from legacy FMS to Aukahi. SI course duration estimates have recently increased, raising DOE concerns that the existing schedule is no longer be feasible. The SI is addressing this concern by adding an additional training resource. Details of post-go-live training for new DOE employees remains unclear.

Executive Summary (cont'd)

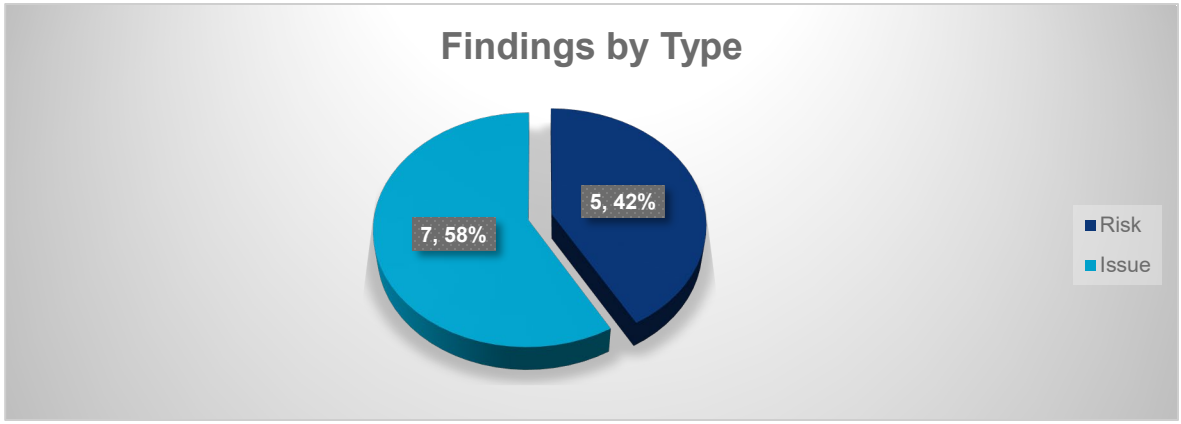
Feb	Mar	Apr	Category	IV&V Observations
M	M	M	Quality Management	The SI continues to improve the production cutover plan/checklist which should help to reduce some production cutover quality risks. The project's decision to implement and fully configure a separate rehearsal environment from the ground up is likely to increase the SI's competence and speed of implementing the production environment. DOE SMEs continue to note instances of SI leads bypassing agreed upon release management processes, making changes to environments without notifying DOE SMEs, which holds the potential for negatively impacting system quality. IV&V remains concerned that test scripts do not have full traceability to contract requirements and may not be comprehensive enough to catch some system defects, as DOE SME ad-hoc testing has uncovered bugs not caught by testing scripts. The SI has indicated they will not be improving test scripts or creating any new scripts when DOE ad-hoc tests find bugs, therefore, DOE has assigned a resource to create new scripts and improve unclear scripts. The project will likely extend UAT by another week due to interface/conversion implementation delays as well as delays related to tester capacity. As important project milestones draw near, IV&V recommends DOE leadership clearly communicate to project stakeholders (including testers) how they should prioritize project activities appropriately so that the project can meet their go-live date. It appears the project will elect to shorten the duration of the Rehearsal Smoke Test (RST) (accepting the risks related to insufficient testing) in order to get an early start on the production environment. Further, many system and functional design decisions and/or issues have yet to be resolved, much less tested. Late testing of new functionality runs the risk that this functionality may not be fully tested and/or the project may have little time to apply and fully test potential bug fixes. IV&V also recommends DOE leadership request the SI make additional exploratory testing efforts (aka., "poke around in the system to see if you can break it"). It remains unclear whether the project will implement security penetration (or other security testing) prior to go-live.

Executive Summary (cont'd)

Feb	Mar	Apr	Category	IV&V Observations
M	M	M	System Architecture & Design	The project continues to devote a significant amount of effort to create workarounds due to Oracle Financials (OF) limitations. For example, due to Oracle's limited ability to secure attachments, the project has elected to implement a workaround by storing and securing all attachments in Google drive (where they can control security) and storing the Google drive URL in the system so users can view them. The project has been unable to create a separate training environment, so trainers have had to utilize the UAT environment for training material data entry and screenshots. This has led to trainers entering data in UAT that was unexpected by UAT testers and may have invalidated some UAT tests. Further, OF does not consistently apply the global Hawaii Standard Time (HST) setting system wide as some system components continue to default to UTC (Coordinated Universal Time). This has created some confusion and led to test script failures. DOE SMEs recently took the initiative to perform some ad-hoc security testing that was not included in system test scripts and found system flaws that existing test scripts had not covered. For example, ad-hoc testing found that SASA's were able to reopen closed PO's and make changes when the system should have prevented it. IV&V remains concerned that some aspects of security have not been implemented properly and/or have not been fully tested, and that some users may have been given more security permissions than their roles are intended to have in order to pass test scripts. Inaccurate security configurations could increase the risk of fraud and could lead to a flood of helpdesk or other support calls post go-live if multiple users are reporting security and other configuration issues. IV&V remains concerned that some security designs and issues have yet to be resolved this close to go-live. For example, the process to manage special user security requests has yet to be fully vetted due to project capacity constraints. Delays related to the late discovery of interface requirements with one boundary system (SVM) continues to negatively impact the project. It remains unclear if this or other interfaces will be implemented prior to completion of UAT or prior to go-live.

IV&V Findings and Recommendations

IV&V identified 12 findings (7 issues and 5 risks) for this reporting period. The following chart breaks down the findings by type/category/priority.



IV&V Findings and Recommendations (cont'd)

Summary of IV&V Open Risks/Issues Criticality

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

IV&V Findings and Recommendations (cont'd)

H Cost & Schedule Management

#	Key Findings	Criticality Rating
3	Risk - **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)

H Cost & Schedule Management (cont'd)

#	Key Findings	Criticality Rating
4	Issue - **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.	Medium

IV&V Findings and Recommendations (cont'd)

H Cost & Schedule Management (cont'd)

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

IV&V Findings and Recommendations (cont'd)

M

Human Resource Management

#	Key Findings	Criticality Rating
2	Issue - **Over reliance on a few skilled and overtaxed DOE project resources could lead to significant project disruption:** 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. sIt 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&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 & 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.	Medium

IV&V Findings and Recommendations (cont'd)

M

Human Resource Management (cont'd)

#	Key Findings	Criticality Rating
5	Issue - **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 Lifecyle (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.	Medium

IV&V Findings and Recommendations (cont'd)

M

Human Resource Management (cont'd)

Recommendations	Progress
• 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.	In progress
• Temporarily re-allocate operational/managerial responsibilities from key resources until project completion.	In progress
• 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.	In progress
• Prepare contingency plans in the event that the DOE project team can no longer sustain project and operational activities at the expected pace.	In progress
• Work closely with the SI in their staffing efforts and quickly, but thoroughly, vet additions to the SI project team.	In progress
• 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.	In progress
• 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.	Not started

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization

#	Key Findings	Criticality Rating
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.	Medium

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization (cont'd)

#	Key Findings	Criticality Rating
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)

M Project Management & Organization (cont'd)

#	Key Findings	Criticality Rating
11	Risk - **Insufficient knowledge transfer and M&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.	Medium

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization (cont'd)

#	Key Findings	Criticality Rating
14	Risk - **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 projects 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 work arounds, 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.	Medium

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization (cont'd)

Recommendations	Progress
• Begin early contingency planning to address further impacts of COVID-19, such as potential furloughs as well as fully remote UAT and Training.	In progress
• 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.	In progress
• 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.	In progress
• 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.	In progress
• Detail relevant OCM strategies and plans for addressing the impacts of COVID-19 in the project OCM Plan.	In progress
• Request the SI make efforts to address time zone challenges with the off-shore technical team.	In progress
• Initiate efforts to request exemptions from hiring freeze constraints and furlough exemptions for the DOE project team.	In progress
• Monitor and provide regular feedback on PM processes and implement continuous process improvement processes to assure consistent and effective project management.	In progress
• 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.	In progress

IV&V Findings and Recommendations (cont'd)

M Quality Management

#	Key Findings	Criticality Rating
10	Issue – **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 "bad press").	High

IV&V Findings and Recommendations (cont'd)

M Quality Management (cont'd)

#	Key Findings	Criticality Rating
12	Risk – **Insufficient testing strategy and planning could lead to poor test quality, including incomplete and invalid test results:** IV&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&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.	Medium

IV&V Findings and Recommendations (cont'd)

M Quality Management (cont'd)

Recommendations	Progress
• Implement comprehensive and rigorous release management processes and quality controls (checks and double-checks).	In progress
• Clarify and fully vet the testing strategy and plans for DOE leads and stakeholders.	In progress
• Request the SI address their team's failure to effectively follow release management processes.	In progress

IV&V Findings and Recommendations (cont'd)

M

System Architecture & Design

#	Key Findings	Criticality Rating
7	Risk – **Oracle Financials environment constraints could lead to schedule delays and leave the project unable to meet development, testing, and training objectives:** 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.	Medium

IV&V Findings and Recommendations (cont'd)

M

System Architecture & Design (cont'd)

#	Key Findings	Criticality Rating
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

IV&V Findings and Recommendations (cont'd)

M

System Architecture & Design (cont'd)

#	Key Findings	Criticality Rating
13	Issue – **Integration with older (antiquated technology) systems could be unexpectedly complicated and lead to schedule delays:** 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.	Medium

IV&V Findings and Recommendations (cont'd)

M

System Architecture & Design (cont'd)

Recommendations	Progress
• 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.	Not started
• Make early OCM efforts to manage expectations based on platform limitations.	In progress
• Establish clear controls with regard to fraud, segregation of duties, and least privilege permissions.	In progress
• Request the SI develop an environment management plan with sufficient details to describe how the project will mitigate risks related to OF environment limitations.	In progress
• Consider prioritizing patching and system upgrades to stabilize boundary systems.	In progress
• 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).	In progress
• 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.	In progress

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:

Criticality Rating	Definition
H	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.
M	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.
L	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.

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.

Solutions that Matter

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Identified Date
2	DOE capacity - overreliance	**Over reliance on a few skilled and overtaxed DOE project resources has lead to significant project disruption.**	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 (see SOW, page 3).	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&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 & 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 related risk), 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.	• Executive leadership regularly monitor the workload and job satisfaction of these key individuals as well as assist with workload management, clarification of priorities, and establishment of a sustainable pace. • Temporarily re-allocate operational/managerial responsibilities from key resources until project completion. • Consider temporary staff augmentation options to both augment the existing project team and augment the operations staff to offload operational responsibilities from key resources. • Prepare contingency plans in the event that the DOE project team can no longer sustain project and operational activities at the expected pace. • Prepare a resource management plan that addresses current and projected project resource constraints and clearly identifies additional resource needs. Recommend this plan include a detailed analysis of these individual's workload over the next 6 months to determine if expectations on their time are realistic. • Request that the SI address issues with their project team that place an unnecessary burden on overtaxed DOE SMEs.	04/15/21 - Key DOE project participants continue to operate at or beyond their capacity. The DOE PM (a Gartner subcontractor) recently announced they will be leaving the project and the position will be backfilled by another Gartner resource. Turnover to the new PM is underway but it remains unclear if the new resource will be able to provide the same level of support and risk mitigation provided by the outgoing PM given that this will be their first exposure to the project 3 months prior to go-live. The burden to fill this potential gap could fall on DOE SME's. DOE SME's have noted that the project has taken a toll on them, some have grown weary from the long hours, frustration with the productivity challenges the project continues to face, and the burden of ensuring quality with technology they don't fully understand. IV&V recommends DOE request the SI provide additional PM support to help compensate for the potential drop in DOE PM support. The project is compiling a list of activities/tasks that need to be completed pre and post go-live. As this list grows, it remains unclear if DOE SME's will be able to complete critical pre-go-live tasks as level of effort for these tasks is not being estimated and DOE SME resource capacity is not being tracked. Training material may need to be updated depending on what features can be implemented prior to go-live. The DOE IT team project participation continues to be constrained by multiple competing non-FMS DOE priorities. 03/15/21 - DOE project participants understanding of system configurations and project processes continues to grow and they have increased their participation in the management of project tasks, filling gaps where needed. However, the DOE project team continues to be stretched at or beyond their capacity such that any reduction in DOE project team capacity (e.g., the departure of any key DOE team member) could have a significant impact on the project schedule and/or the quality of project deliverables. Recent additions to the DOE project team continue to increase their productivity and fill a much-needed gap in defining and documenting changes to DOE processes and procedures resulting from the switch to the new FMS system. As the project approaches the overlap of UAT, rehearsal build activities, and training material development, it remains unclear if the project team will be able to meet the demands and quality objectives for these important tasks. The SI continues to deliver project artifacts (e.g., training materials) to the DOE team for review without sufficient internal quality assurance processes which continues to put an additional burden on DOE resources who already have limited capacity. 02/15/21 - DOE recent staff augmentation efforts appear to be providing some relief to overtaxed	Human Resource Management	Issue	Medium	Open			6/30/2020
3	Accelerated Schedule	**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. The SI has stated that they had scaled back early analysis efforts in order to meet DOE expectations for an accelerated schedule. The SI also stated that initial analysis would not be needed because the project will be adopting a preconfigured Oracle SAAS template for system implementation and that DOE users will be required to change their existing processes and adopt processes supported by the platform template. Some SMEs have reported early work session have been unproductive due to the lack of sufficient early analysis efforts.	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. This risk could be exacerbated by other IV&V identified risks which could lead to a need to extend the project schedule. If these potential risks are realized, negative user feedback could lead to inflammatory media coverage which could negatively impact legislative, board of education, and public support. Some SMEs have reported early work sessions have been unproductive due to the lack of sufficient early analysis efforts. This risk could be exacerbated by other IV&V identified risk which could lead to a need to extend the project schedule. Still, the project has stated they will only go-live if the system sufficiently supports DOE operations and users are able to do their jobs.	• Take steps to assure sufficient OCM planning and activities are performed to prepare users for the significant change taking place at an accelerated rate. • Project leadership closely monitor project productivity and meet regularly to perform continuous process improvement (continuously reach out for feedback and move quickly to improve unproductive project elements and processes). • Leadership take steps to closely monitor project team capacity and assure resources are not overallocated. • Implement a plan for broad validation of system functionality with clear channels of communication for user feedback to assure all users are able to perform their duties prior to the project go/no-go decision. • Project make early efforts to plan for and prepare contingency plans in the event it becomes clear the accelerated schedule is unsustainable or critical project objective will not be met by the planned go-live date. • Prepare and implement a public relations plan to avoid inflammatory media coverage which could negatively impact legislative, board of education, and public support. • Consider employing the role of a Scrum Master whose prime directive is to remove roadblocks to productivity. • SI clearly and often communicate specific DOE activity prioritization and dependencies and perform risk mitigation planning to avoid schedule slippage. • Clarify DOE PM vs. SI PM roles on the project with regard to monitoring critical path activities that appear to be falling behind as well as other risk mitigation activities. • DOE explore providing the project with a dedicated report writer that could be trained on the new reporting tools and offer long-term (post go-live) report writing support to system stakeholders. • Project implement a minimum viable product strategy and make extensive efforts to determine which system features (interfaces, reports, etc.) that can be implemented late game or post go-live to allow the project team to focus on completing critical features and meet the planned go-live date. • DOE make extensive efforts to manage user expectations with regard to system limitations and work arounds. • DOE executive leadership clearly communicate to project stakeholders (including testers) how they should prioritize project activities appropriately so that the project	04/15/2021 - Some stakeholders have indicated they have concerns that the system will not have some desired functionality at go-live, due to the aggressive schedule. As go-live draws near, IV&V remains concerned that some functionality has yet to be fully vetted, implemented, and unit tested (e.g. purchase order approvals). IV&V also remains concerned that testing scripts may have been less than comprehensive due to the tight schedule which could impact system quality and lead to excessive bugs at go-live. It is becoming clear that the system will not provide the same level customization to DOE user needs and level of protection from users mistakes that the legacy FMS provided. Therefore, IV&V recommends DOE devote resources to monitor user inputs/actions post go-live to actively correct errors and coach users on proper usage of the system. The project is currently tracking activities and system features that have been postponed due to the project teams limited capacity and the aggressive schedule and are now tracking these postponed items in a backlog list. IV&V and DOE PMO remains concerned that the list of postponed activities continues to grow and user expectation may not be met if postponed features are not implement prior to go-live. These concerns as well as the concern that the project team continues to sacrifice quality over expedience has led IV&V to escalate this risk to "High". 03/15/21 - The project continues to operate at an accelerated pace as a result of the accelerated schedule as well as delays in interface and conversion tasks. The project is planning to introduce some interface functionality late into the UAT process and may introduce some functionality post-UAT, both are considered a bad practice that could introduce system quality risks that could either delay the schedule or lead to challenges at go-live if the system has not undergone rigorous testing. The project will soon face the convergence of multiple work streams (completion of UAT, kickoff of the rehearsal environment build, and training material development) and it remains unclear if the volume of overlapping activities will overwhelm the project team and lead to schedule delays and/or system quality issues. The DOE has identified a report writing resource that may help to speed reporting activities and free some SI resources to focus their efforts on system configuration. Some activities, including report development and Knowledge Transfer (KT) have been delayed thus far so the project team could attend to other more critical tasks. However, this could lead to the project team being overwhelmed with activities that have been put off once go-live approaches. Because the project schedule is not fully resourced, there is currently no way of knowing whether the project team will be able to complete all pre go-live tasks including training material development along with activities that have been put off to be completed later.	Cost & Schedule Management	Risk	High	Open			6/30/2020
4	Delayed PMP & schedule	**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 deliverable 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.	• Request the SI clearly define the project schedule critical path, monitor and clearly communicate critical path activities that are approaching slippage, and formulate risk mitigation strategies to address critical path activities that are falling behind. • Request the SI take steps to increase engagement with key DOE SMEs to increase communication of priorities and clarify communications.	'04/15/2021 - Though the project has accepted the risk of a less than comprehensive and fully resourced project plan, the SI continues to make efforts to mitigate by building out a detailed cutover plan and providing project participants detailed, prioritized task lists. The project is currently tracking, in a consolidated list, pre-go-live tasks/activities that have been deprioritized (in order to focus on prioritized critical tasks) as well as tasks that will be completed soon after go-live. While this should help to assure important tasks are not forgotten or missed, there remains no way of knowing if pre-go-live tasks can be completed before go-live or when post go-live tasks will be completed. This could lead to increased user frustration and degraded system quality as users perform work arounds and with few assurances as to when important system functionality will be available to them. 03/15/21 - IV&V remains concerned with the projects acceptance of the risks associated with the lack of a comprehensive and fully resourced project plan. The SI continues to make efforts to increase visibility into project tasks outside of the project schedule and has recently provided a draft of a detailed cutover plan, which should help to mitigate some of this risk. The SI is now providing specific, instead of general, task priorities for DOE SME which should reduce task priority ambiguity and help SMEs focus their efforts. 02/15/21 - Though DOE expecations for schedule management, level of detail, resourcing, and recording of actuals vs. baseline have gone unmet, the project appears to have accepted the risk of unexpected delays due to the lack of a comprehensive, fully resourced project plan. Though the SI has created task trackers outside of the project schedule, some team members have stated they don't always know what to do. IV&V continues to recommend the SI take steps to increase engagement with key DOE SMEs (e.g., phone calls or text messages) to clarify communication instead of relying on inefficient, lengthy, and extensive email exchanges that often create more confusion and frustration. 01/15/21 - IV&V has previously reported that the SI has yet to fully resource the project plan to ensure tasks are appropriately staffed/resourced and to provide clarity on whether the project can meet milestone due dates. The SI has indicated they intend to provide, at minimum, resourcing details for the single DOE resource (the DOE Lead BA) that is currently the bottleneck for important project tasks that lie in the critical path. IV&V continues to monitor risks related to the project schedule that could lead to the project being surprised when important milestones are missed because the project plan has not been fully resourced or because the project has not looked far	Cost & Schedule Management	Issue	Medium	Open			6/30/2020

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Identified Date
5	SI Staffing Challenges	**SI staffing challenges have reduced project productivity and system design quality, and led 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 Lifecyle (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 rework once a better design or solution is discovered.	• Work closely with the SI in their staffing efforts and quickly, but thoroughly, vet additions to the SI project team. • Request the SI make efforts to address time zone challenges with the off-shore technical team. • 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. • DOE consider issuing a corrective action plan for the SI to sufficiently address technical leadership concerns. • 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 SME's.	'04/15/2021 - As DOE SME's become more familiar with and explore system configuration options, they have found solutions that even the SI may not have been aware of. IV&V and DOE SME's have observed instances of the SI's lack of expert-level knowledge of the system and their failure to communicate when mistakes are made, which has created confusion and frustration for DOE SME's. IV&V recommends DOE request the SI increase their level of transparency and communication as the project makes the final push toward go-live. It has also become clear that the SI global team time zone difference continues to be a contributing factor to interface and conversion task delays. The SI has committed to modifying their global team hours to more closely align with Hawaii (HST) hours, however it remains unclear if this is consistently or effectively applied. 03/15/21 - Despite some challenges with task management and productivity, the SI project team achieved a key milestone of completing core functionality prior to the kickoff of UAT. However, interface and conversion activities continue to be less than productive and continue to increase the potential for schedule delays and compromise system testing objectives. DOE SMEs and IV&V remain concerned that the SI PM is overallocated and have observed several instances of unproductive work sessions and instances of SI staff failing to effectively manage project tasks. DOE SMEs and the PMO continue to fill gaps in SI task management capabilities which has reduced their capacity to perform critical tasks. SI efforts to augment security resources to address security concerns have not met DOE expectations, which could continue to place an additional burden on DOE SMEs to ensure security is properly configured. 02/15/21 - IV&V is escalating this risk to an issue since the SI has been unable to successfully address these challenges with their staff and because these challenges have likely contributed to many of the delays the project has seen thus far. IV&V continues to note (and DOE SMEs have confirmed) the SIs lack of preparation for meetings. Often, SI participants will have conversations with each other during meetings while DOE SMEs wait idle while they work among themselves to clarify their own understanding of a topic or coordinate their activities. With DOE SMEs already at capacity and being asked to perform tasks typically performed by the SI, this lack of preparation will likely further reduce their capacity until it is effectively addressed. DOE SMEs continue to note instances where work products are delivered without sufficient SI quality assurance. It appears that the SI continues to rely on DOE SMEs to perform basic QA instead of performing their own internal QA prior to delivery to their customer.	Human Resource Management	Issue	Medium	Open			6/30/2020
7	Oracle Platform limitations	**Oracle Financials environment constraints has lead to schedule delays and left the project unable to meet some development, testing, and training objectives.**	The project has planned for a total of 4 environments, currently slated for development, testing, training, and production. Oracle Financial 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.	• Develop an environment management plan with sufficient details to describe how the project will mitigate risks related to OF environment limitations. • Plan ahead to procure or provision additional environments as necessary that would assure accelerated development cycles as well as standby environments that will speed development in the event a critical environment has become corrupt (e.g., mistakes are made to irreversible fields). • 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). • 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.	'04/15/2021 - The project continues to devote a significant amount of effort to creating workarounds due to Oracle Financials (OF) limitation. For example, due to Oracle's limited ability to secure attachments when utilizing a single business unit (BU), the project has elected to implement a work around by storing and securing all attachments in Google drive and storing the Google drive URL in the system so users can view them. Oracle environment limitations may have limited the project's ability to create a separate training environment, so trainers have had to utilized the UAT environment for training screenshots. This has led to trainers entering data in UAT that was unexpected by UAT testers and may have invalidated some UAT tests. Further, for reasons that remain unclear, OF does not consistently apply the global Hawaii Standard Time (HST) standard and some system components default to GMT (Greenwich Mean Time). This has created some confusion and led to test script failures. 03/15/21 - DOE SMEs continue to realize the benefits of the new system over the legacy FMS and recognize that the new system will make them more productive and less reliant on DOE IT staff. The SI has confirmed that the Oracle platform will be unable to secure attachments (e.g. purchase order invoices) which may include sensitive information. Therefore, DOE is exploring process/procedure changes and manual workarounds to assure privacy of this information. DOE is also considering foregoing a second system approval of purchase orders (POs) and accepting some fraud risks, as additional approvals could overwhelm DOE senior staff (Complex Area Supervisors and/or Assistant Superintendents) with PO approval emails. Therefore, due to multiple instances of Oracle Financials limitations impacting the project and usability of the system, IV&V has escalated this finding to an issue. The SI has also identified a potential flaw in Oracle's role inheritance which has led to removal of some roles and a simplification of the model. 02/15/21 - IV&V remains concerned that work arounds due to Oracle limitations could unexpectedly increase the level of effort to produce training materials, conduct training, and execute their OCM strategy to achieve full user buy-in. IV&V also remains concerned that system configuration mistakes could trigger an environment refresh that could delay project go-live by at least 3-5 weeks. DOE technical leads have noted that though Oracle has provided the project with a representative that attends most project PM meetings, they have provided limited value to the project. Most requests or attempts to speak with Oracle Financials experts or other Oracle Financials customers have been unsuccessful. DOE technical leads have been left to perform their own research via the Oracle online documentation or post their Oracle questions to public forums to get answers to important technical	System Architecture & Design	Issue	Medium	Open			6/30/2020
8	PM processes	**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 ▣ Unclear project scope definition ▣ 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. The project is currently operating under a draft Project Management Plan (PMP) and project schedule. These deliverables were due 3/12/20 but, as of this reporting period, have not been finalized (see Risk #4).	Due to the accelerated project schedule, the project can ill afford to tolerate a lack of productivity. 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 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. The project could realize the reduced productivity during the planning and analysis phase has led to project delays. 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.	• Request the SI work quickly to acquire a dedicated and highly-capable project manager that has proven experience successfully driving an Oracle cloud-based K-12 project in an accelerated timeframe. • Monitor and provide regular feedback on PM processes and implement continuous process improvement processes to assure consistent and effective project management. • Integrate risk management practices into existing processes (e.g. Review important deadlines in weekly working sessions). • 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. • Reallocate SI PM responsibilities so they can focus on effective, detailed management of the project. Consider augmenting the team with a project assistant to manage the project schedule. • Project leadership reassess meeting scheduling processes and reach agreement with DOE SMEs on more optimal meeting governance to reduce the number and length of meetings so the project team can focus on and accelerate project tasks.	'04/15/2021 - DOE SME's continue to report (and IV&V has observed) instances of SI leads lack of preparation before meetings. IV&V continues to recommend DOE leadership request the SI make direct contact with key SME's prior to meetings to speed communications and reduce time spent in meetings so they can become more productive and be freed up to work on project activities. It appears the SI continues to rely on meetings with multiple participants to collaborate amongst themselves and resolve project issues. IV&V and DOE SME's have noted that SI leads continue to make the same mistakes despite DOE SME feedback on important management processes and practices that need improvement. The SI approach to team coaching and continuous process improvement remains unclear. IV&V recommends DOE request the SI consistently coach their team members for continuous process improvement and how to effectively manage their tasks. It is becoming clear the SI teams limited project and task management capabilities compounded by the SI global teams time zone difference continues to delay interfaces, conversion, and other project tasks. 03/15/21 - IV&V remains concerned that the SI PM lack sufficient capacity to perform all required PM tasks to meet DOE expectations. DOE SMEs have stated they are accepting the fact that the SI team members lack the capacity and/or capability to perform comprehensive task management and DOE PMO and SMEs have stepped in, as needed, to fill these gaps. DOE resources have stepped up efforts to assist the SI with task management and the PMO has taken over report development tracking. 02/15/21 - IV&V continues to note instances of poor PM practices including lack of SI preparation for meetings (see related update to Finding #5), poor communication, lack of meeting minutes/agendas, schedule confusion (see update to finding #4), and unproductive meetings. 01/15/21 - DOE SMEs continue to report (and IV&V has observed) instances of unproductive work sessions due to a lack of SI preparation for meetings. SI leads continue to rely on large meeting to elicit information from DOE SMEs when one-on-one phone calls could suffice. Further, meeting minutes and meeting agendas are not consistently provided to attendees. DOE PMO and IV&V continue to note instances of the SI scheduling meetings with multiple DOE participants that may have been unnecessary, or the amount of time taken could have been reduced if the SI had one-on-one conversations with SMEs to clarify or resolve issues prior to (or in lieu of) meeting with the larger group. IV&V recommends project leadership reassess meeting scheduling processes and reach agreement with DOE SMEs on more optimal meeting governance to reduce that number and length of meetings so the project team can accelerate project tasks. It appears the SI PM continues to be	Project Organization & Management	Risk	Medium	Open			6/30/2020

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Identified Date
9	Security model complex	**User provisioning and security model complexities has led 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: ØSecurity is too restrictive and hinders their ability to be productive and do their job ØSecurity is overly permissive and privileged information is visible to other groups that do not have a business need for the data ØUser provisioning maintenance is overly complex and/or labor intensive ØThe 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 other Oracle Financials cloud security experts could lead a less than optimal security model which could lead to unmet user expectations as well as project disruption in the event that a significant change to the model is needed as go-live approaches.	• SI make efforts to fully vet the proposed security model with multiple Oracle Financials cloud security strategy experts prior to implementation. • Make early OCM efforts to manage expectations based on potential limitations of the security model as they relate to business objectives. • DOE establish clear controls with regard to segregation of duties and least privilege permissions.	'04/15/2021 - DOE SME's recently took the initiative to perform some adhoc security testing, that was not included in system test scripts, and were surprised to find that SASA's were able to reopen closed PO's and make changes when the system should have prevented them. IV&V remains concerned that some aspects of security have not been implemented properly and/or fully tested and that some users have been over-provisioned in order to pass test scripts. Inaccurate security configurations could increase the risk of fraud and could lead to a chaotic post go-live if multiple users are reporting security configuration issues. IV&V remains concerned that some security designs and issues have yet to be resolved this close to go-live. For example, special user security requests have yet to be fully vetted due to project capacity constraints. 03/15/21 - UAT testing results indicate that the bulk of the limited number of defects are related to security configuration errors. It remains unclear why these defects where not found during unit testing and/or SIT. Failure to effectively test security configurations prior to UAT has placed an additional burden on DOE UAT testers and slowed UAT testing. SI efforts to augment security resources to improve security concerns have not met DOE expectations. The SI has stated they now have a more rigorous change control process in place and that security configurations will continue to be refined throughout the rehearsal build phase of the project. The SI has stated they now have a more rigorous change control process in place and that security configurations will continue to be refined throughout the rehearsal build phase of the project. It remains unclear whether existing UAT test scripts sufficiently test system security or whether users have been able to complete existing scripts because they are over provisioned. It also remains unclear whether proper change management controls are in place to track what permissions were granted and when and for what purpose. Failure to track this information can leave DOE IT with limited visibility into existing security configurations and make it difficult to support and troubleshoot post go-live. DOE SMEs have indicated that some users that should have the same permissions have varying levels of system permissions in the UAT environment. 02/15/21 - The project continues to address Oracle security limitations that could limit DOE's ability to secure and hide sensitive information from their users. Though security tasks that had fallen behind schedule now appear to be on track, DOE and IV&V remain concerned with the quality of the security implementation and whether it is overly complex. The SI has stated they have taken steps to avoid security implementation missteps that occurred during SIT and that they have implemented improved quality control and release management processes for conducting UAT. The project has	System Architecture & Design	Issue	Medium	Open			7/29/2020
10	Release management	**Inadequate release management processes have led 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 "bad press").	• Implement comprehensive release management processes and quality controls (checks and double-checks) to ensure the right files are uploads with clean data. • Institute rigorous checklists and code freeze communications prior to customer demonstrations. • Request the SI address their teams failure to effectively follow release management processes.	'04/15/2021 - The SI continues to improve the production cutover plan/checklist which should increase the quality of production cutover prior to go-live. The project's decision to implement and fully configure a separate rehearsal environment from the ground up is likely to increase the SI's competence and speed of implementing the production environment. However, DOE SME's continue to note instances of SI leads bypassing agreed upon release management processes, making important changes to environments without notifying DOE SME's, which could negatively impact system quality. 03/15/21 - The SI has recently drafted a detailed rehearsal build cutover plan and is reviewing it with appropriate DOE SMEs. To mitigate the release management and configuration errors in the production build, the project is considering limiting access to select SI staff. DOE SMEs continue to make additional efforts to ensure quality of SI configurations and have established a process that gives DOE SMEs control over the configuration workbooks (workbooks that are uploaded to configure the system) and requires the SI provide them with an opportunity review staged data prior to import into the system. It appears this has improved quality and reduced missteps. Despite this, the SI still has access to manually configure the system outside of the workbooks and DOE SMEs noted at least one instance where the SI may have made a change in the UAT environment without notifying DOE. IV&V maintains this findings high rating due to continued missteps and the potential for missteps in the production environment that could lead to slippage of the go-live date that aligns with fiscal year end, which could complicate and increase the level of effort to perform the final system cutover at a later date. 02/15/21 - DOE SMEs continue to discover instances of the SI failing to effectively follow release management processes. For example, DOE SMEs found that budget control wasn't setup properly as the SI failed to follow the provided spreadsheet or utilized the wrong version of the spreadsheet. Fortunately, DOE SMEs found the mistakes before they were implemented. As reported previously, mistakes made to irreversible configuration fields in UAT or Production environments could lead to significant project delays. 01/15/21 - Testers have reported that excessive security changes have been implemented without prior warning in the SIT environment during testing. Each time the SI implements changes/fixes to SIT, testers typically are required to re-run their test scripts; excessive changes can increase testers workload. It appears the SI continues to trade off quality for expedience in order to accelerate	Quality Management	Issue	High	Open			7/31/2020
11	KT & Long term support	**Insufficient knowledge transfer and M&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. The SI has stated they are not contractually obligated to formally train the DOE IT staff on the technology.	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.	• DOE develop a resource management plan to address gaps in their existing IT team to ensure they are able to meet expectations for project implementation and post go-live support. Plan may include augmenting their IT staff with an additional resource to, at minimum, management Oracle quarterly update. • DOE explore seeking legislative exemptions to acquire experienced Oracle Financials (OF) resources to fill gaps on their IT staff as soon as possible to reduce dependence on vendors to support the system and to fill current skillset gaps and capacity constraints with existing DOE IT resources. • Consider preparing return on investment (ROI) data to present to the legislature that could clearly justify the cost of highly compensated OF (possibly exempt) resources that could potentially provide cost savings to the state compared to the cost of equivalent vendor support contracts. • Clarify SI KT, warranty, and post go-live support contractual obligations well ahead of go-live to avoid disagreements 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 training, and OCM communications.	'04/15/2021 - Security Knowledge Transfer (KT) sessions appear to have improved once the SI made some resource changes and made improvements to the KT materials. IV&V and the DOE PMO remains concerned that the DOE may not be fully prepared to support the system post go-live and/or post warrant when the SI is no longer available to assist. Early KT security sessions seem to indicate that Oracle security configurations may be complicated and DOE IT support staff may have difficulty troubleshooting and effectively resolving support tickets in a timely manner. IV&V will reassess once KT sessions are complete. IV&V recommends DOE augment their IT staff with an additional resource to support the system and to, at minimum, manage Oracle quarterly updates. 03/15/21 - The SI recently held security KT sessions for DOE IT FMS support staff, however, these sessions have yet to meet DOE expectations as they appeared to be unproductive. Details of division of responsibility between the SI and DOE post go-live have yet to be finalized. The project has elected to delay functional KT sessions to allow DOE functional leads to focus on more urgent project tasks. IV&V and the PMO have raised concerns that DOE may not be adequately staffed to support the new system post go-live and/or past the SI warranty period. IV&V also remains concerned that the readiness of the DOE help desk to support go-live. IV&V recommends the DOE leadership consider instituting a distributed model/strategy (e.g. "Super SME") to support tier 1 user assistance, on-going training, and OCM communications. Distributing these activities to an individual in each school/office/ group can provide users with the support they need to common questions without submitting a help desk ticket. These motivated individuals could receive enhanced training and participate in a advanced user community of advance users that could potentially become a conduit for important OCM communications, feedback on user acceptance, and offer perspective from the field on prioritizing enhancements. They could also assist with onboarding new users (training) to the system to assure they are properly equipped before they begin system use. 02/15/21 - DOE remains concerned that their system support personnel have yet to fully participate in project configuration activities that they will be responsible for post go-live. As go-live approaches the project resources will likely become more and more constrained and have little time to effectively perform knowledge transfer (KT). Further, the SI has yet to provide DOE technical staff with Oracle Integration Cloud (OIC) and Oracle Enterprise Performance Management (EPM) training they are committed too. The SI has indicated they are confident in their KT plan which will include documented "How To"s for DOE support staff, a sandbox environment that the SI will use to walk the support staff through system support activities, and KT sessions for specific topics like report	Project Organization & Management	Risk	Medium	Open			8/17/2020

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Identified Date
12	Testing	**Insufficient testing strategy and planning could lead to poor test quality, including incomplete and invalid test results**	IV&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&V has concerns with the proposed testing strategy. The SI has stated they intend to begin 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.	Delays and unproductive test preparation sessions could lead to schedule delays once the project realizes they are not ready for SIT and UAT testing phases. If the SI cannot effectively leverage their testing expertise to offer guidance to the DOE testing team, DOE testing stakeholders could find themselves unprepared for SIT and UAT phases, which could lead to schedule delays. If the project, A) does not clearly define SIT or UAT entrance criteria and/or B) enters SIT or UAT phases without some system components being fully operational, the value of the project testing phases could be significantly reduced and lead to excessive bugs, overcomplicated testing, a solution that cannot perform the required or necessary functionality, and ultimately extend the project schedule.	• Clarify and fully vet the testing strategy and plans for DOE leads and stakeholders. • Develop and implement a robust regression test methodology. • Develop and implement an efficient process for updating/refining test scripts based on tester. • Request the SI make additional exploratory testing (aka., "poke around in the system and to see if you can break it"). Suggest DOE test leads coordinate their own exploratory testing activities. • DOE leadership send out communications that help DOE staff cleary understand the priority of project tasks over other duties as critical go-live milestones approach.	'04/15/2021 - DOE SME's and IV&V remain concerned that test scripts may not be comprehensive enough to catch some system defects. The SI has indicated they will not be creating any new scripts based on DOE tester feedback, therefore, DOE has assigned a resource to create new scripts and update unclear scripts. The project has elected to extend UAT by another week due to interface/conversion implementation delays as well as delays related to tester capacity. As important project milestones draw near, IV&V recommends DOE leadership clearly communicate to project participants (including testers) how they should prioritize project activities appropriately so that the project can meet their go-live date. It appears the project will elect to shorten duration of the rehearsal smoketest (RST) environment (accepting the risks related to insufficient testing) in order to get an early start on the production environment build and meet their go-live date. Further, many system and functional design decision and/or issues have yet to be resolved, much less tested. Late game testing of new functionality runs the risk that this functionality may not be fully tested and/or the project may have little time to apply fixes to bugs. IV&V also recommends DOE leadership request the SI make additional exploratory testing efforts (aka., "poke around in the system to see if you can break it"). Suggest DOE test leads coordinate their own exploratory testing activities as well. It remains unclear whether the project will implement security penetration (or other security testing) prior to go-live. 03/15/21 - The DOE testing team appears to have increased their level of productivity and overall cadence of UAT testing, and defect rates are not excessive. Defects are quickly identified and the SI is quick to make fixes. However, it appears the bulk of defects found are related to flaws in the security configuration. It remains unclear why SI unit testing and SIT did not catch these defects prior to UAT. Further, IV&V and DOE leads remain concerned that test script coverage could be less than comprehensive. Often, a limited number of new UAT test scripts will be created during UAT to address tester identified gaps. The SI has stated they will not be drafting any new UAT scripts and turned over this responsibility to DOE Test Lead's. However, this could reduce the quality and comprehensiveness of UAT testing as DOE does not have the level of software testing expertise and system knowledge as the SI. Also, it remains unclear whether some interfaces will be completed prior to the close of UAT which would require this functionality to be tested separately prior to implementing in the rehearsal and/or production environment. While this is considered a bad practice, the project is making efforts to mitigate the risks. It remains unclear whether comprehensive performance testing will be completed prior to go-live.	Quality Management	Risk	Medium	Open			9/15/2020
13	Antiquated systems	**Integration with older (antiquated technology) systems could be unexpectedly complicated and lead to schedule delays**	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.	• Consider petitioning the State leadership for additional funding to resolve technical debt that could be putting the project and the State at risk of potentially embarrassing and costly security breaches and/or critical system failures. • Consider prioritizing patching and system upgrades to stabilize boundary systems. • Perform early discovery and due diligence to identify potential complications with integrating with older systems. • Consider implementing early, basic proof of concept interfacing with older systems to assure integration is feasible and to vet optimal interface solutions.	04/15/2021 - Delays related to the late discovery of interface requirements with one boundary system (SVM) continues to negatively impact the project. It remains unclear if this or other interfaces will be implemented prior to completion of UAT or prior to go-live. 03/15/21 - For one boundary system, there was some confusion over whether another DOE 3rd party vendor would be modifying their interface to align with the projects interface design. Redesign of the interface has further delayed interface development. 02/15/21 - External system interfaces continue to introduce delays in the project schedule.,therefore, IV&V has escalated this finding to an "Issue". The project has elected to introduce some interfaces late into UAT which introduces testing and schedule risks. The project appears to have resolved HR system integration issues with the FMS HCM module and has made progress on resolving DAGS interface issues (e.g., check printing overflow challenges). The project has confirmed that they will be able to delay to transition of p-card from Bank of Hawaii to First Hawaiian Bank post go-live. 01/15/21 - Some external interface delays have led to project schedule delays and the project has made additional efforts to address external department delays. For example, ETS took 1 month to get approval for the 40 hours of work to implement project requested changes to their interface. Some project tasks have been delayed due to late engagement of the DOE Office of Talent Management (OTM), as the project has paused some activities to determine how utilization of some Oracle HCM data elements could negatively impact future DOE plans to migrate their HR systems to Oracle HCM. Further, unresolved issues with DOE check printing interfaces to DAGS could lead to additional delays as there is no clear solution for check print overflows and OFO (facilities) interface issues have yet to be resolved. 12/15/20 - Interfaces continue to face delays and are likely to continue to cause schedule slippage. Interfaces with external systems continues to be a challenge for the project. It remains unclear why the DAGS payroll system interfaces has been delayed. Concerns have been raised that outbound interface testing could be hindered if external stakeholders are unavailable or unresponsive. For example, the project has yet to get a clear answer with regards to p-card migration from Bank of Hawaii to First Hawaiian Bank. Delays like this could lead to project delays. 11/15/20 - The project is continuing efforts to modernize the DAGS payroll system interface;	System Architecture & Design	Issue	Medium	Open			9/15/2020
14	Training material	**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 projects 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 work arounds, 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.	• Request the SI improve their quality assurance processes to ensure project deliverable drafts go through a rigorous quality assurance process prior to submission for DOE review. • DOE prepare contingencies and explore allocating additional resources to assure training material and training delivery quality.	04/15/2021 - The project is making extensive efforts to complete their first Aukahi introductory course which should be available for users the week of 4/26/21. DOE is also planning to provide supplementary support material to their users, including: policy/procedure documentation, walkthroughs of functional processes, guides to using forms, Vendor Payment charts, and a terminology crosswalk from legacy FMS to Aukahi. SI course duration estimates have recently increased, raising DOE concerns that the existing schedule will no longer be feasible. The SI has addressed this concern by adding an additional training resource. Details of post-go-live training for new DOE employees remains unclear. 03.15/21 - The SI has revised their training plan to allow more time for DOE QA and review in response to DOE concerns that the initial training material development schedule was not feasible. The DOE and IV&V remain concerned with delays in the development of training materials as well as SIs lack of quality assurance. Initial SI training material drafts were submitted for DOE review without proper quality assurance. The SI has stated they will improve quality assurance efforts and include their functional leads in the review process. Delays and the lack of quality assurance processes could lead to training that does not meet DOE leadership full expectations and could lead to schedule delays, reduced user post go-live buy-in, and excessive help desk support calls. Therefore, IV&V has escalated this finding from a preliminary concern to a risk.	Project Organization & Management	Risk	Medium	Open			2/15/2021