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January 4, 2022

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

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

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

Pursuant to HRS section 27-43.6, which requires the Chief Information Officer to submit applicable independent verification and validation reports to the Legislature within ten days of receiving the report, please find attached the report the Office of Enterprise Technology Services received for the State of Hawaii Department of Education's FMS Modernization Project.

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

Sincerely,

Douglas Murdock (Jan 4, 2022 13:20 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: **May 16 – June 15, 2021**

Draft Submitted: July 1, 2021

Final Submitted: August 2, 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

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

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

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

IV&V also remains concerned that the SI has yet to complete the project Requirements Traceability Matrix (RTM), ambiguity with the SI's agreed upon scope of work, and that DOE may not be fully prepared to maintain or fully support the system post go-live.

Executive Summary (cont'd)

Apr	May	Jun	Category	IV&V Observations
H	H	H	Cost & Schedule Management	The project continues to accept risks associated with the aggressive schedule in order to quickly move off their failing legacy FMS system. IV&V, DOE PMO, and DOE support personnel remain concerned that few details have been provided as to how user support will be provided post go-live and whether current efforts to develop and implement a comprehensive support plan can be effectively completed prior to go-live. Though the technical go-live production build appears to be progressing well, IV&V is concerned that a comprehensive operational readiness checklist has yet to be developed, managed, and tracked. This checklist can help bring order to the flurry of activities as go-live approaches and can help to assure important tasks are not overlooked. IV&V and DOE leadership have some uncertainty around the effectiveness of system testing as test script development may have been rushed, which could elevate the number of help desk tickets in the weeks following go-live. DOE has accepted the risk that the SI will not provide a fully resourced project plan for pre-go-live activities. IV&V recommends DOE request the project develop a fully resourced project plan for post go-live activities so they can effectively determine and communicate to users when functionality that has been delayed until post go-live will be delivered, and when workarounds can be replaced with system features. The SI has stated they will meet all contractual requirements at no additional cost to DOE (without drawing on O&M funds), whether they can complete them within the 90-day warranty period or not. However, it appears the SI has yet to complete the Requirements Traceability Matrix (RTM) that would ensure and/or provide evidence that each requirement has been met and validated through testing, prior to go-live. Previously executed change requests may have left some ambiguity regarding the agreed upon SI scope of work. IV&V recommends DOE make efforts to reach a common understanding of the project scope of work, validate whether all contractually required requirements are included in the RTM, and then validate that each RTM requirement has been sufficiently met by the SI. For contractual requirements that are no longer needed, IV&V recommends DOE consider negotiating "swaps" of deprecated requirements for new requirements that were not part of the scope of the current contract.

Executive Summary (cont'd)

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

Executive Summary (cont'd)

Apr	May	Jun	Category	IV&V Observations
M	H	H	Project Management & Organization	IV&V remains concerned that some of the SI PM challenges the project continues to experience could negatively impact the management of the potentially extensive number of post go-live activities, as well as activities that have been pushed out to just before go-live. DOE has reported instances where SI changes to the post go-live production build checklist have been poorly communicated, which required DOE SMEs to make additional efforts to manage project communications. IV&V and the DOE PMO remain concerned that the go-live checklist critical path is being manually tracked by the SI, which, if not managed well, could increase the risk of an unsuccessful go-live. IV&V remains concerned the Operations and Maintenance (O&M) plan and the post go-live support plan have yet to be finalized this close to go-live. If they are not completed soon, DOE may not be fully prepared to maintain or fully support the system post go-live. DOE has recently appointed a resource to lead the post go-live support plan development effort and they have made some early progress. However, it remains unclear if DOE will be able to execute their plan in time to provide comprehensive user support prior to go-live and meet user expectations. IV&V recommends the DOE post go-live support plan address minimizing the impact to key DOE SMEs who will likely be pre-occupied with resolving system issues the first few weeks after go-live. Key DOE SMEs continue to demonstrate elevated levels of understanding of system functionality and provide guidance to SI resources on process improvements. Some Knowledge Transfer (KT) sessions continue to get pushed out to just prior to or just after go-live. The project has now completed most planned instructor-led training sessions. DOE SMEs and IV&V remain concerned with the number of users that did not attend their scheduled courses that must now rely on recorded sessions, and that some attendees have reported that training may be insufficient to fully prepare users. If a significant number of users are unable to effectively use the system by the planned go-live date, the project could experience an unsuccessful go-live. DOE is reportedly making efforts to ensure all users, at minimum, view the recorded sessions. Further, many DOE users have become accustomed to hands-on training that could better prepare them for system usage, however, the project was unable to provide comprehensive hands-on training, likely due to the accelerated schedule and complications related to the COVID pandemic. The project will provide users with a sandbox environment for hands on testing and training, but it will not be available to users until after go-live.

Executive Summary (cont'd)

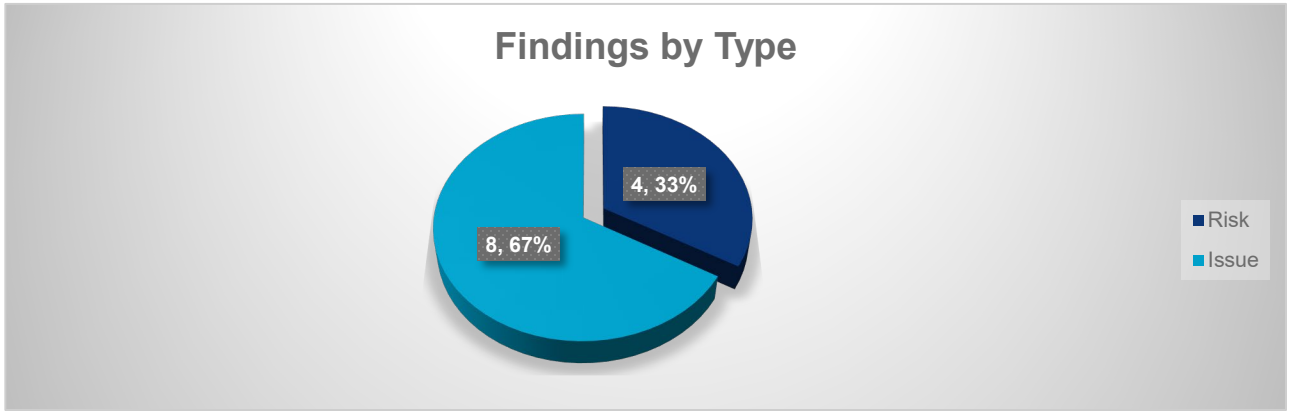
Apr	May	Jun	Category	IV&V Observations
M	M	M	Quality Management	The project is now executing the fourth and final (production) build of the system from the ground up. With the multiple build iterations, the SI appears to be increasing the quality of their configuration efforts. IV&V remains concerned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

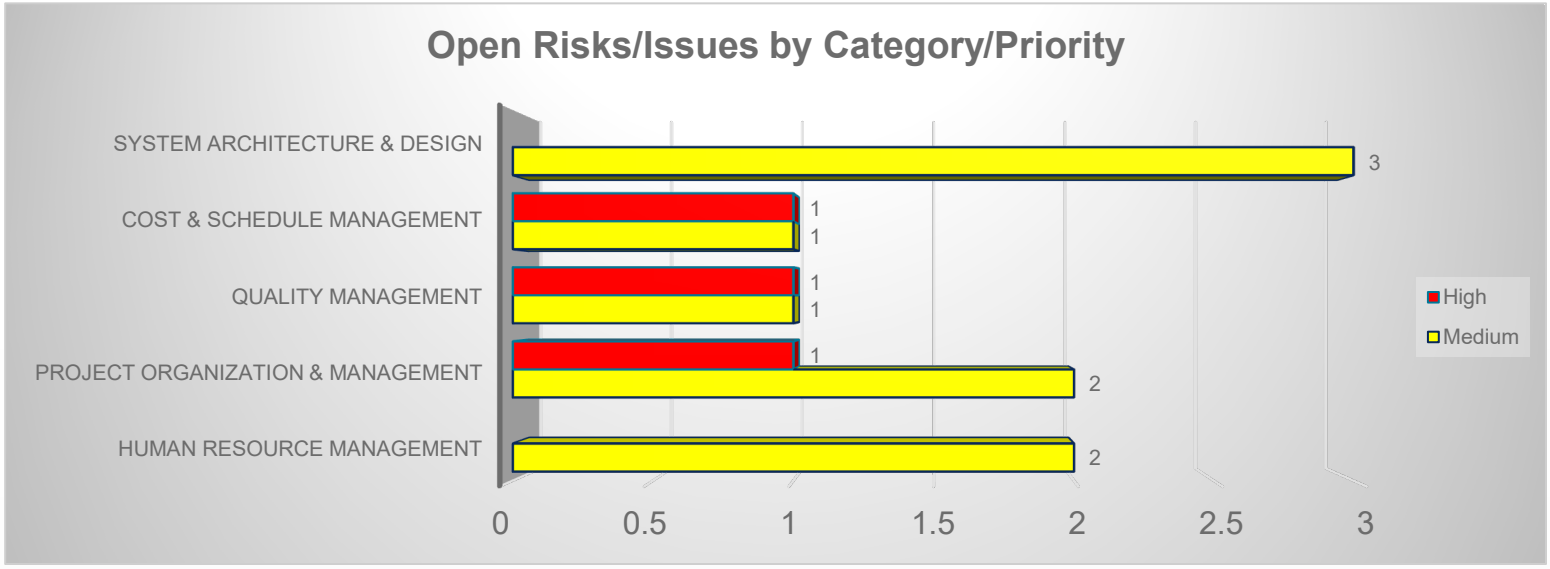
Executive Summary (cont'd)

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

IV&V Findings and Recommendations

IV&V identified 12 findings (8 issues and 4 risks) for this reporting period. The following chart breaks down the findings by type/category/priority.





IV&V Findings and Recommendations (cont'd)

Summary of IV&V Open Risks/Issues Criticality

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

IV&V Findings and Recommendations (cont'd)

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
• DOE make extensive efforts to manage user expectations with regard to system limitations and work arounds.	In progress
• 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)

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

IV&V Findings and Recommendations (cont'd)

H 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)

H 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.	High

IV&V Findings and Recommendations (cont'd)

H 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)

H 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	Issue – **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 led 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.	06/15/21 - IV&V remains concerned that key DOE project participants continue to operate at their maximum capacity and that the flurry of activities, many of which have been pushed out closer to go-live, could result in further sacrifice of quality or schedule slippage. There is currently no objective way to determine SMEs remaining workload and whether they will be able to complete assigned tasks prior to go-live. The DOE PM will likely be out indefinitely starting sometime close to 7/11/2021, therefore Gartner has added an additional PM resource to the project team to compensate. However, the Gartner contract for PM resources ends 7/23/2021 and it remains unclear who will assist DOE with managing the growing backlog of post go-live support activities or whether these duties will fall to DOE SMEs. Many SMEs continue to work at a high level of intensity on project tasks, logging 10-12 hour work days. As more details of the post go-live support plan are becoming available, the potential for DOE SMEs becoming overwhelmed with user support requests is increasing. IV&V recommends the DOE support infrastructure team address this concern in their plans and work to minimize the impact to key DOE SMEs. 05/15/2021 - The replacement DOE PM appears to be making progress towards matching the same support levels provided by the recently departed PM. Key DOE project participants have stated they continue to operate at their maximum capacity and IV&V remains concerned that many important planned activities have been pushed out closer to go-live, which presents a risk that the month prior to go-live (June 2021) could require more 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 the workload of SME's and whether they will have time to complete assigned tasks prior to go-live. 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	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.	06/15/21 - The project continues to accept risks associated with the aggressive schedule, including multiple readiness risks, in order to quickly move off their failing legacy FMS system. IV&V, DOE PMO, and DOE support personnel remain concerned that few details have been provided as to how user support will be provided post go-live and whether current efforts to develop and implement a comprehensive support plan can be effectively completed prior to go-live. Though the technical go-live production build appears to be progressing well, IV&V is concerned that a comprehensive operational readiness checklist has yet to be developed, managed, and tracked. This checklist can help bring order to the flurry of activities as go-live approaches and can help to assure important tasks are not overlooked. IV&V and DOE leadership have some uncertainty around the effectiveness of system testing as test script development may have been rushed, which could elevate the number of help desk tickets in the weeks following go-live. 05/15/2021 - The project continues to accept risks associated with the aggressive schedule including multiple readiness risks including: 1) Not all planned system features will be available at go-live. 2) Some functionality has yet to be fully vetted, implemented, and fully tested. 3) Users will be required to perform multiple live system workarounds until functionality can be implemented that would eliminate workarounds. 4) DOE support personnel may not be fully able to support the system at go-live as they may not have sufficient time to effectively prepare for their new support duties. 5) User training may have been rushed which may lead to training that does not fully prepare all users to operate the system without assistance from support personnel. 6) The number of users requesting help from support personnel could be extensive and could quickly overwhelm support personnel which could lead to user frustration and hinder their work productivity. The project is considering implementing a soft launch of the system a few days prior to opening the system to the broader user base. A soft launch approach could help mitigate the risk of unexpected system bugs at go-live and provide the project with valuable feedback from users doing real work in the production system. 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	Cost & Schedule Management	Issue	High	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
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.	06/15/21 - DOE has accepted the risk that the SI will not provide a fully resourced project plan for pre-go-live activities. IV&V recommends DOE request the SI provide a fully resourced project plan for post go-live activities so they can effectively determine and communicate to users when functionality that has been delayed until post go-live will be delivered and when workarounds can be replaced with system features. The SI has stated they will meet all contractual requirements at no additional cost to DOE (without drawing on O&M funds), despite whether they can complete them within the 90-day warranty period or not. However, it appears the SI has yet to complete the Requirements Traceability Matrix (RTM) that would ensure and/or provide evidence that each requirement has been met and validated through testing. Therefore, it remains unclear whether the SI will deliver the full contractually required scope of work. Previously executed change requests may have left some ambiguity with regard to the agreed to contract scope. IV&V recommends DOE make efforts to reach a common understanding of the project scope of work, validate whether all contractually required requirements are included in the RTM, and then validate that each RTM requirement has been sufficiantly met by the SI. For contractual requirements that are no longer needed, IV&V recommends DOE utilize "swaps" of deprecated requirements for new important requirements that were not part of the scope of the current contract. IV&V remains concerned that the SI has elected to delay updating the RTM until some time after go-live. 05/15/2021 - The project continues to make efforts to refine go-live checklists and is making efforts to estimate the level of effort for the development of reports that will be critical for go-live. However, IV&V remains concerned that the project plan is not fully resourced and therefore there is no objective way to determine which remaining tasks and system features will be completed prior to 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. 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 promote user buy-in. '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	Cost & Schedule Management	Issue	Medium	Open			6/30/2020
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.	06/15/21 - DOE leadership and IV&V remain concerned that the SI has been unable to replace unproductive SI resources which have put an additional burden on key overtaxed DOE SMEs as they, at times, need to compensate for some lack of productivity or lack of task management skills. However, DOE SME have reported that the quality of SI work is improving incrementally, for example, the quality of SI security configurations has improved. Still, IV&V and DOE SMEs remain concerned that the lack of quality controls around SI configurations could still lead to an increase in the number of bugs post go-live. 05/15/2021 - IV&V and DOE leadership remain concerned that the SI does not have a comprehensive or rigorous methodology that could mitigate quality control risks and concerns. DOE SME's continue to make extensive independent efforts to review SI work products and continue to find errors the SI had overlooked. The lack of rigor in software development practices and in go-live planning could lead to rework, schedule delays, and user frustration if important steps or configuration elements are overlooked. SI efforts to improve work quality have not always proved successful. The SI has been unable to replace resources that present the most challenges and as go-live draws near resource replacement will likely not be feasible because of the time it would take to onboard and bring new resources up to speed. The SI has made efforts to address risks associated with delays and ineffective communication due to time zone difference with the SI global (off-shore) team. However, it appears Global team tasks continue to experience delays and slow the projects overall cadence. The SI has stated some delays and inefficiencies are due to DOE SMEs lack of capacity. 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.	Human Resource 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
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.	06/15/21 - Oracle has stated that the previously reported time zone bug will be treated as an enhancement and not a bug. Oracle has agreed to, at no cost, repair only one instance of the time zone bug (Order Date for Purchase Orders) in their November 2021 quarterly release. Until then, users will continue to contend with these UTC dates (displayed in UTC time instead of HST) in these impactful areas. For example, purchase orders that are submitted after 11 AM HST will show as the next day instead of the current date. Also, user queries will at times return inaccurate results because queries are based on UTC time which will often be the following day instead of the date they are querying. Even after the one time zone bug instance is repaired in November, users will continue to contend with UTC dates in other areas of the system which could lead to user confusion and frustration, inaccurate reporting, and potentially customer/vendor confusion. Also, it remains unclear why Oracle and the SI has required DOE SMEs to research and log a ticket for each instance of the time zone bug rather than analyzing the bug themselves. Typically, system-wide bugs of this nature are consolidated into a single ticket that can be applied system-wide to display all dates in HST. IV&V recommends DOE leadership escalate to Oracle executive leadership and insist efforts be made to comprehensively repair an obvious bug that likely affects a broad customer base, not just DOE. 05/15/2021 - The project continues to contend with multiple Oracle Financials (OF) platform bugs that have hindered project productivity and complicated testing efforts. For example, Oracle has yet to resolve a platform bug where the Hawaii Standard Time (HST) default setting is inconsistently applied throughout the system. The SI has requested DOE SME's make efforts to identify each element of the system that is incorrectly defaulting dates to UTC (Coordinated Universal Time) instead of HST. Also, due to limitations on securing attachments in the system, the project has elected to store all documents that would be attachments in Google Drive. Some aspects of implementing this work around have yet to be fully vetted. Work arounds such as these present various training and system support challenges and could confuse and frustrate users and negatively impact user buy-in and overall productivity. 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	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.	06/15/21 - IV&V remains concerned that some of the SI PM challenges the project continues to experience could negatively impact the management of the potentially extensive number of go-live and post go-live support activities, as well as the management of activities that have been pushed out to just before go-live. DOE has reported that SI changes to the post go-live production build checklist have been poorly communicated and has required DOE SMEs to make additional efforts to manage project communications. IV&V and the DOE PMO remains concerned that the go-live checklist critical path is being manually tracked by the SI, which could, if not managed well, could increase the risk of an unsuccessful go-live. 05/15/2021 - The SI's project management (PM) practice challenges continue to persist with little to no improvements. Though project activities continue to progress, IV&V continues to observe instances of inefficient and unproductive PM practices that continue to put an additional burden on DOE SMEs to assist the SI with managing project risks and tasks that are typically managed by the SI. 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.	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: 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 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.	06/15/21 - As DOE SMEs knowledge of system security grows, they are better able to assist the (primarily) single SI security resource and mitigate some of this risk. DOE SMEs continue to report, and IV&V has observed, that the SI security resource continues to struggle with effective communications, which has led to DOE SME frustration and could lead to inaccurate security configurations, which could lead to multiple user security related issues at go-live as well as increase the potential for fraud. DOE is concerned that the SI has thus far not been able to produce some requested security related reports (e.g., lists of users that have been manually provisioned). It remains unclear whether the current security configurations fully support separation of duties and the principle of lease permissions (PoLP). 05/15/2021 - System testing continues to reveal multiple security configuration bugs and it remains unclear why some security bugs continue to be identified despite test scripts being passed in earlier testing phases. It appears SI security configuration practices lack the rigor typically applied to system implementations of this size and complexity and it appears the SI continues to be over reliant on their single security resource. IV&V remains concerned that the SIs approach to security configuration has been largely trial and error in lieu of a more rigorous analysis efforts. This approach has put an additional burden on DOE SMEs and testers, and could lead to security bugs. IV&V also remains concerned that the SI continues to make changes to the security model this close to go-live and that some aspects of security may not have 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. The SI has stated that as DOE SMEs gain a deeper understanding of system security they are requesting more changes to the model, however, it remains unclear whether deeper SI analysis and vetting of requirements could have been done prior to implementing security configurations. IV&V remains concerned that custom security configurations (e.g., special user requests) could require a significant level of effort for DOE IT support staff to implement. It is estimated that special user requests could take up to 10 minutes or more to configure. 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	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.	06/15/21 - The project is now executing the fourth and final (production) build of the system from the ground up. With the multiple build iterations, the SI appears to be increasing the quality of their configuration efforts. While this may reduce the probability that this issue will again negatively impact the project, IV&V will maintain the "high" priority risk rating as the impact of this issue at go-live could be potentially be significant. Further, DOE SMEs have reported a limited number of instances where changes have been made to the system that were not properly tracked. A number of these instances had hindered DOE testing efforts, though, the SI was able to quickly apply fixes to allow testers to move forward. 05/15/2021 - Now that the project team has performed multiple environment builds (SIT, UAT, and RST), the quality of the final production build is likely to increase. However, the SI continues to make multiple reactive changes to security configurations as multiple security bugs continue to be identified throughout UAT and RST testing. DOE SMEs have noted some unexplained differences that exist between the different environments, and it remains unclear why some security related bugs continue to be identified despite test scripts being passed in earlier testing phases. IV&V has observed instances of SI security configuration practices that lack the sufficient quality controls and/or rigorous processes typically applied to system implementations of this size and complexity, and the SI continues to be over reliant on their single security resource. Therefore, IV&V maintains the "High" priority rating for this risk. 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	Quality Management	Issue	High	Open			7/31/2020

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Identified Date
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. • DOE work quickly to appoint a resource to lead the development and execution of a comprehensive support plan • DOE leadership clearly communicate to relevant resources the priority and importance of establishing a fully operational support infrastructure prior to go-live.	06/15/21 - As more details of the post go-live support plan are becoming available, the potential for DOE SME's to become overwhelmed with user support requests may be increasing. DOE leadership and IV&V remain concerned that DOE may not be fully prepared to maintain or fully support the system post go-live. DOE will likely rely heavily on SI resources that will likely be on-site at go-live. IV&V remains concerned that the O&M plan has yet to be fully vetted and finalized this close to go-live, which could leave the project ill-prepared to fully support the system and system users post go-live. DOE has recently appointed a lead to drive development of a system support plan and some progress has been made. However, it remains unclear if DOE will be able to execute their plan in time to provide comprehensive user support prior to go-live and meet user expectations. IV&V recommends the DOE support infrastructure team address this concern in their plans and work to minimize the impact to key DOE SMEs as they will likely be pre-occupied with resolving system issues the first week of go-live. Key DOE SMEs continue to demonstrate elevated levels of understanding of system functionality and provide guidance to SI resources on process improvements. Some KT sessions continue to get pushed out to just prior to or just after go-live. 05/15/2021 - IV&V remains concerned that DOE may not be fully prepared to maintain and/or fully support the system post go-live. Current efforts to establish a user support and help desk infrastructure may not be adequate to fully support users at go-live and DOE has yet to identify a resource to lead this effort. Delays in clarifying how their existing organization support resources (USTs) will support system users have left DOE with little time to fully define and staff important user support processes. IV&V and DOE leadership are also concerned with DOE's lack of documented governance, not only with support processes but other areas as well (e.g., knowledge management, cross divisional communications/collaboration, etc.). Failure to fully define, prepare for, and implement this support infrastructure could lead to user confusion and frustration at go-live and could negatively impact worker productivity and system buy-in. Therefore, IV&V has escalated this risk to a "High" priority. IV&V recommends the DOE work quickly to appoint a resource to lead the development and execution of a comprehensive support plan and that DOE leadership clearly communicate the priority and importance of establishing a fully operational support infrastructure prior to go-live. IV&V recommends the project work to bring SI resources onsite pre- and post- go-live to better support DOE support team	Project Organization & Management	Risk	High	Open			8/17/2020
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.	06/15/21 - IV&V remains concerned that the project continues to advance to subsequent project phases (now the production build) without completing exit and entrance criteria. For example, the project elected to move forward with the production build despite incomplete conversion and interface functionality and despite not having completed all planned UAT and RST test scripts. The project has accepted the risk that some system tests will be delayed and that some functionality will be implemented late into the production build in order to keep to their scheduled go-live date. Some interfaces have yet to be completed and fully tested and some may be delayed until after go-live. Late introduction of functionality into the final production build is a bad practice and could lead to unexpected bugs or an unsuccessful go-live. 05/15/2021 - Despite delays in the closeout of UAT (due to delays in implementing some data conversions and interfaces), the project elected to move forward with the next Rehearsal Smoke Test (RST) testing phase, accepting the risk that the testing of the system may be incomplete. Project delays have now led to slippage of the planned 5/14/21 RST completion date and the project will again elect to move to the next testing phase (Production Environment build) without completing the previous testing phase, despite having only completed 46% of RST test scripts. '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	Quality Management	Risk	Medium	Open			9/15/2020

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Identified Date
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.	06/15/21 - Most external interfaces have been completed and fully tested, though some changes have yet to be applied and tested. IV&V and DOE SMEs remain concerned that some interfaces may not have been fully tested and validated which could lead to project disruption just prior to or just after go-live. 05/15/2021 - The project has made progress in resolving unexpected complications with some external interfaces which should be implemented prior to go-live. However, due to the tight project timeline and potential complications with the implementation of one external system interface, the project has elected to delay implementation to post go-live as the business unit will not be impacted as long as the interface is implemented soon after go-live. However, the project is currently unable to anticipate when they will be able to complete this interface. 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	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.	06/15/21 - The project has now completed the majority of planned instructor-led training sessions. DOE SMEs and IV&V remain concerned with the number of users that did not attend their scheduled courses and must now rely on viewing recorded sessions and that some attendees have reported that training may be insufficient to fully prepare them for usage of the system. If a significant number of users are unable to effectively use the system by the planned go-live date, the project could experience an unsuccessful go-llive. DOE is reportedly making efforts to ensure all users, at minimum, view the recorded sessions. Further, many DOE users have become accustomed to hands on training that better prepares them for system usage, however, the project was unable to provide comprehensive hands on training, likely due to the accelerated schedule. The project will provide users with a sandbox environment for hands on testing and training, but it will not be available to users until after go-live. DOE SMEs ability to support users post go-live could be limited if they are preoccupied with resolving post go-live system issues. 05/15/2021 - Training material development appears to be on track as the project appears to have addressed the initial productivity challenges. However, feedback from some of the early training sessions have questioned the effectiveness of training. Attendees have reported that some sessions are not comprehensive and only cover the "happy path" and don't always address how to handle potential complications. Some have reported the SI instructor is simply reading slides from the training slide deck and question the sessions value over simply reading slides on their own. IV&V recommends the project quickly address this issue for future courses and consider how they might provide supplemental training for users that already attend courses that provided limited value. IV&V also recommends the project allow users to apply what they've learned by doing real work in a test or sandbox environment or during a soft launch and gather important feedback for the OCM team to address by providing broad communication prior to go-live on any aspects of the system that could cause confusion. IV&V is concerned that Learning Management System (LMS) limitations can make it difficult to make quick changes to training materials. The project has already determined that some features may be introduced late into the production build which may require adjustments to training materials. 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	Project Organization & Management	Risk	Medium	Open			2/15/2021