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May 7, 2021

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

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

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

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

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

Sincerely,

Douglas Murdock (May 11, 2021 17:20 HST)

Douglas Murdock
Chief Information Officer
State of Hawaiʻi

Attachment (2)

FMS Modernization Project

Department of Education (DOE)

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

For Reporting Period: **January 16 – February 15, 2021**

Draft Submitted: March 4, 2021

Final Submitted: April 12, 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 continues to make progress and increase their overall cadence as they drive toward the critical 3/1/2021 User Acceptance Test (UAT) kickoff milestone, despite System Integration Test (SIT) delays. To meet that date and stay on track for the 7/16/2021 go-live, the project may elect to overlap SIT with UAT and introduce some system components mid-UAT, which is not a best-practice as it could reduce UAT effectiveness and accuracy. DOE leadership's recent efforts to augment the project team with additional resources appears to be providing incremental relief to overtaxed resources. As DOE SME knowledge of the system grows, they have become more adept at prioritizing critical system functions that will be required at go-live and are deferring non-critical functions in order to meet their go-live date. The project continues to operate with limited visibility into whether project milestones can be met and, as such, still faces the risk of unexpected delays due to the lack of a comprehensive, fully resourced project plan.

Project risk management efforts have led to IV&V lowering 2 findings from "High" to "Medium" criticality during this reporting period. Additionally, two risks have been realized and are now issues for the project. IV&V has identified a new preliminary concern that the level of effort to develop training materials and execute training could be higher than what was expected. Early indications are that both the number and degree of changes to existing processes may be significant which could present OCM challenges to assuring user buy-in, and training challenges to develop material that effectively prepares users for change.

IV&V remains concerned that failure to follow control processes intended to prevent mistakes made in configuring irreversible items in UAT or in the final production environment could require a 3-to-5-week environment refresh that could further extend the schedule and/or delay system go-live.

Executive Summary (cont'd)

Dec	Jan	Feb	Category	IV&V Observations
(M)	(M)	(M)	Cost & Schedule Management	The project appears to have increased their overall cadence as they drive toward the critical 3/1/2021 UAT kickoff milestone, despite SIT delays. The project continues to drive towards a 7/16/2021 go-live date and has contingency plans to move out some components that could be introduced mid-UAT and/or post go-live. This is not a best practice and does introduce risk to testing effectiveness, but the project appears to have deemed this risk to be manageable and acceptable given their need to migrate off their unstable legacy system. SIT was originally scheduled for a re-baselined 1/25/2021 completion, however, due to delays, the project schedule was again re-baselined with a new 2/26/2021 SIT completion date. It remains unclear if the 2/26/2021 completion date is achievable; therefore, the project is preparing contingency plans to potentially overlap SIT and UAT. Introducing new components mid-UAT and overlapping SIT and UAT is not a best-practice and could reduce system test effectiveness . This could be further exacerbated if the project elects to forego full regression testing. Introducing new functionality post go-live could increase user frustration, when they realize some functions are limited or missing, and reduce user adoption/buy-in if not managed well by the OCM team. DOE PMO shares IV&Vs concern that the level of effort to develop training materials and execute training could be higher than what was expected, and the project could potentially run out of time and miss key milestone dates. The SI is currently assessing plans to increase their training material development efforts to mitigate this risk. Though the project plan is being utilized by the SI to drive to project milestones, DOE expectations for schedule management, level of detail, resourcing, and recording of actuals vs. baseline, continue to go unmet. The project continues to operate with limited visibility into whether project milestones can be met and appears to have accepted the risk of unexpected delays due to the lack of a comprehensive, fully resourced project plan. Though the SI has created task trackers outside of the project schedule, some team members have stated they don't always know what to work on first. IV&V continues to recommend the SI take steps to increase engagement with key DOE SMEs (e.g., phone calls or text messages) to clarify communication instead of relying on large meetings or on inefficient, lengthy, and extensive email exchanges that often create more confusion and frustration.

Executive Summary (cont'd)

Dec	Jan	Feb	Category	IV&V Observations
(H)	(H)	(M)	Human Resources Management	DOE recent staff augmentation efforts appear to be providing some relief to overtaxed resources. As DOE SME knowledge of the system and SI processes grow, they've become more productive at completing tasks and more adept at prioritizing critical system functions that will be required at go-live, and deferring non-critical functions, to meet their go-live date. Therefore, IV&V has lowered this category risk to "Medium". The SI continues to rely on DOE SMEs to perform some tasks that are typically performed by or with a high level of guidance from the SI, which continues to reduce DOE SMEs overall capacity. Some system components continue to be delayed and some will likely be introduced post UAT kickoff, partially due to DOE SME lack of capacity. IV&V continues to note (and DOE SMEs have confirmed) the SIs lack of preparation for meetings. Often, SI participants will have conversations with each other during meetings while DOE SMEs wait idle while they work among themselves to clarify their own understanding of a topic or coordinate their activities. With DOE SMEs already at capacity and being asked to perform tasks typically performed by the SI, this lack of preparation will likely further reduce their capacity until the SI is able to effectively address this concern. DOE SMEs continue to note instances where work products are delivered without sufficient SI quality assurance. It appears that the SI continues to rely on DOE SMEs to perform basic QA instead of performing their own internal QA prior to delivery to their customer. The DOE PMO continues to make progress in filling gaps in coordination, communication, and management of project tasks. IV&V remains concerned that the DOE has been impacted (e.g., dealing with issues related to remote learning, on-site/off-site logistics) by the COVID pandemic in ways that other agencies may not have been impacted, which has put an overall strain on DOE resources.

Executive Summary (cont'd)

Dec	Jan	Feb	Category	IV&V Observations
(M)	(M)	(M)	Project Management & Organization	IV&V and DOE remain concerned that their system support personnel have yet to fully participate in project configuration activities that they will be responsible for post go-live. As go-live approaches the project resources will likely become more and more constrained and have little time to effectively perform comprehensive knowledge transfer (KT). Further, the SI has yet to provide DOE technical staff with Oracle Integration Cloud (OIC) and Oracle Enterprise Performance Management (EPM) training they are committed too. The SI has indicated they are confident in their KT plan which will include documented How-To's for DOE support staff, a sandbox environment that the SI will use to walk the support staff through system support activities, and KT sessions for specific topics like report development and security configuration, but that plan has not been fully developed or evaluated yet.
				Though project activities continue to move forward, IV&V continues to note instances of poor PM practices including lack of SI preparation for meetings (see related update to Finding #5), poor communication, lack of meeting minutes/agendas, and schedule confusion (see update to finding #4), which continue to burden DOE SMEs and diminish the productivity of project work sessions.
				IV&V has opened a new preliminary concern that training material development may be extensive and could reduce the effectiveness of training and lead to project delays. 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 to existing processes may be significant. Training material will need to effectively address these changes and prepare users for work arounds, process changes, and new system concepts, which could require a significant level of effort for both the SI and DOE to develop training material. Because of the high priority given to the effectiveness of training, DOE review cycles may be unexpectedly extended in order to ensure quality. 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 quality training materials.

Executive Summary (cont'd)

Dec	Jan	Feb	Category	IV&V Observations
(M)	(M)	(M)	Quality Management	DOE SMEs continue to discover instances of the SI failing to effectively follow release management processes. For example, DOE SMEs found that budget control wasn't setup properly as the SI failed to follow the provided spreadsheet or utilized the wrong version of the spreadsheet. Fortunately, DOE SMEs found the mistakes before they were implemented. As reported previously, mistakes made to irreversible configuration fields in UAT or Production environments could lead to significant project delays.

Though close out of SIT continues to be at risk, the project is moving towards keeping their UAT 3/1/21 kickoff date and will likely move out some components to be introduced mid-UAT. Introducing new components mid-UAT is generally considered a bad practice which could reduce system test effectiveness. This could be further exacerbated if the project elects to forego full regression testing.

The SI has stated they have taken steps to avoid security implementation missteps that occurred during SIT and that they have implemented improved quality control and release management processes for conducting UAT. However, the project has yet to validate the effectiveness of these changes or whether they will be followed. The project has introduced additional approvals to the PO workflow process to address concerns of the potential for fraud. IV&V noted instances where the SI functional leads failed to perform internal reviews of the security configuration spreadsheets prior to delivery to DOE SMEs for review, leaving DOE SMEs to struggle to properly vet security permissions they may not fully understand. IV&V remains concerned with the quality of security implementation which could lead to schedule delays, inadequate controls for data, extended troubleshooting times, and user confusion post go-live. |

Executive Summary (cont'd)

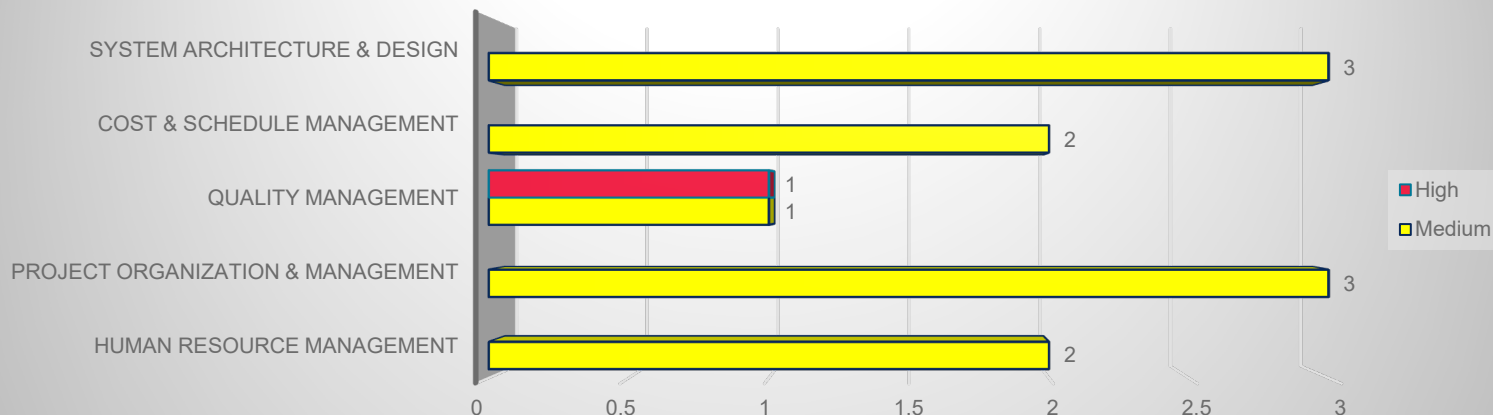| Dec	Jan	Feb	Category	IV&V Observations
(M)	(H)	(M)	System Architecture & Design	The project continues to address Oracle security limitations that could limit DOE's ability to secure and hide sensitive information from their users. Though security tasks that had fallen behind schedule now appear to be on track, DOE and IV&V remain concerned with the quality of the security implementation and whether it is overly complex. The project has introduced additional approvals to the PO workflow process to address concerns of the potential for fraud. Though the SI onboarded an additional security resource during the last reporting period, it remains unclear whether this has improved SI security challenges and thus far has not met DOE expectations. DOE SMEs remain concerned that security configurations may be less than optimal and difficult for DOE to support post go-live. DOE has requested the SI make efforts to clean up and optimize security roles and permissions prior to start of UAT. Despite these challenges, DOE has noted that the implementation of security configurations, thus far, appear to be adequate for entering into UAT. The project appears to have resolved HR system integration issues with the Oracle Human Capital Management (HCM) module and has made progress in resolving DAGS interface issues (e.g., check printing overflow challenges). The project has confirmed that they will be able to delay the transition of p-card from Bank of Hawaii to First Hawaiian Bank post go-live which should reduce some pre go-live project activities. IV&V remains concerned that various Oracle Financials limitations pose a risk to overall project success including the risk that mistakes made to irreversible configuration fields in UAT or Production environments could lead to significant project delays. Project efforts to reduce fraud risks and establish more rigorous quality controls has led IV&V to reduce this category risk to "Medium" criticality.

IV&V Findings and Recommendations

IV&V identified 13 findings (5 issues and 7 risks) for this reporting period, including 1 new preliminary concern. Two risk have been lowered from "High" to "Medium" and two risks have been escalated to issues. The following chart breaks down the findings by type/category/priority.

Findings by Type

- 1, 8% — Preliminary Concern
- 7, 54% — Risk
- 5, 38% — Issue

Open Risks/Issues by Category/Priority

Category	Value
SYSTEM ARCHITECTURE & DESIGN	3 (Medium)
COST & SCHEDULE MANAGEMENT	2 (Medium)
QUALITY MANAGEMENT	1 (High), 1 (Medium)
PROJECT ORGANIZATION & MANAGEMENT	3 (Medium)
HUMAN RESOURCE MANAGEMENT	2 (Medium)

Legend: High, Medium

Axis: 0, 0.5, 1, 1.5, 2, 2.5, 3

IV&V Findings and Recommendations (cont'd)

Summary of IV&V Open Risks/Issues Criticality

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

IV&V Findings and Recommendations (cont'd)

M Cost & Schedule Management

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

IV&V Findings and Recommendations (cont'd)

M Cost & Schedule Management (cont'd)

#	Key Findings	Criticality Rating
4	**Risk - 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)

M 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

IV&V Findings and Recommendations (cont'd)

M Human Resource Management

#	Key Findings	Criticality Rating
2	**Risk - 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. Many DOE team members will likely participate in the FMS Mainframe-as-a-Service project currently planned for August 2020, though, the required level of effort remains unclear. It remains unclear if DOE staffing levels committed to in the original Statement of Work (SOW) have been met. Over reliance on key resources can not only overtax and thereby reduce the effectiveness of these key individuals, but also presents a risk of significant project disruption in the event of their departure. While most projects have this risk, the risk impact for this project, from IV&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 SME's.	Not started

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization

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

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization (cont'd)

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

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization (cont'd)

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

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization (cont'd)

#	Key Findings	Criticality Rating
14	<NEW> Preliminary Concern - **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.	n/a

IV&V Findings and Recommendations (cont'd)

M Project Management & Organization (cont'd)

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

IV&V Findings and Recommendations (cont'd)

M Quality Management

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

IV&V Findings and Recommendations (cont'd)

M Quality Management (cont'd)

#	Key Findings	Criticality Rating
12	**Risk – Insufficient testing strategy and planning could lead to poor test quality, including incomplete and invalid test results:** IV&V has observed some unproductive test preparation work sessions and some confusion among the project team members as some elements of the test strategy and plan are unclear or not well defined. At times, it appears the SI is asking DOE test leads to perform activities they lack expertise to perform. DOE test leads have also stated that SI led testing preparation efforts have not always been productive and have not met their expectations that the SI would provide sufficient testing preparation guidance. The SI appears to have responded by replacing the SI Test Lead, and the SI PM has taken over as the SI Test Lead, despite concerns that the SI PM may be overallocated. It is unclear whether the SI PM has capacity to effectively lead the testing effort and provide DOE test leads with sufficient guidance for them to adequately prepare for testing. The SI reports that they are making efforts to find a permanent replacement. Additionally, IV&V has concerns with the proposed testing strategy. The SI has stated they intend to begin System Integration Testing (SIT) without some system components being fully operational which could, A) result in incomplete testing and, B) invalidate test results for functionality that has been previously tested.	Medium

IV&V Findings and Recommendations (cont'd)

M Quality Management (cont'd)

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

IV&V Findings and Recommendations (cont'd)

M System Architecture & Design

#	Key Findings	Criticality Rating
7	**Risk – Oracle Financials environment constraints could lead to schedule delays and leave the project unable to meet development, testing, and training objectives:** The project has planned for a total of 4 environments, currently slated for development, testing, training, and production. Oracle Financials cloud service level agreements for environment refresh is reportedly 3 weeks. The SI has indicated they are working on a strategy for accomplishing project objectives with the limited environments and the DOE is reportedly making efforts to increase the number of environments. Typically, projects of this size, complexity, and pace rely on quick environment refreshes in order to effectively meet development, testing, and training objectives. Most will plan for an abundance of environments in order to avoid the need to repurpose environments, avoid project delays, and provide flexibility to "freeze" environments to improve testing and training quality. If the project is unable to quickly refresh environments and is has only a limited number of environments.	Medium

IV&V Findings and Recommendations (cont'd)

M System Architecture & Design (cont'd)

#	Key Findings	Criticality Rating
9	**Risk – 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**

PCG Eclipse IVV
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	Identified Date
2	DOE capacity - overreliance	**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. 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.	02/15/21 - DOE recent staff augmentation efforts appear to be providing some relief to overtaxed resources. As DOE SME knowledge of the system and SI processes grow, they've become more productive at completing their tasks and more effective at inserting themselves into SI work product development to identify potential concerns. The SI continues to rely on DOE SMEs to perform some tasks independently that are typically performed with a high level of guidance from the SI, which continues to reduce their overall capacity. As UAT draws near, it remains unclear if DOE capacity will further delay UAT kickoff. Some system components continue to be delayed and some will likely be introduced post UAT kickoff, partially due to DOE SME lack of capacity. 01/15/21 - DOE leadership continue efforts to provide relief to overtaxed resources and have recently reassigned a project coordinator to assist the DOE PM and an IT resource to manage project technical tasks, and have hired a new resources to assist the DOE Lead BA. DOE leadership is also making efforts to offload operational responsibilities from the DOE technical lead (i.e., 4 of the 8 sections they currently manage), a key member of the PMO who has thus far had limited project involvement due to operational responsibilities. Impacts of these changes remain to be seen but likely to produce some positive results going forward. The DOE PMO continues to increase efforts to fill gaps in coordination, communication, management of DOE tasks, and ensuring DOE SMEs are properly prepared for project work sessions. However, some stakeholders have suggested DOE team morale has been negatively affected due to the amount of time they spend on the project as well as frustration with the SIs lack of communication, coordination, meeting preparation, and specific task priority clarification. 12/15/20 - One key member of the Gartner PMO team has been replaced and the longstanding Gartner assistant PM is now the lead DOE PM. Turnover to the new PM appears to have been effective as the project has not experienced any noticeable disruption due to the change. The new Gartner technical resource has been assisting the DOE IT team offering guidance and coordination. DOE leadership continues to make efforts to provide some relief to overtaxed DOE SME's including a concerted effort to offload business operations tasks from the lead DOE SME who has become both the focal point and chokepoint for important project tasks. DOE is reportedly limited in their ability to acquire new DOE staff due to budgetary and potential union constraints. SI challenges continue to weigh heavily on the lead DOE SME as they make	Human Resource Management	Issue	Medium	Open	6/30/2020
3	Accelerated Schedule	**Adoption of an aggressive schedule could lead to poor system quality, user frustration, stretch DOE resources beyond their capacity, and bad press.**	In October of 2018, the aging DOE FMS failed, was offline for several weeks, and led to significant disruption of critical operations. As a result, the DOE quickly procured and launched this project with the goal of replacing their FMS as quickly as possible to avoid a similar event. The project is currently executing an aggressive, accelerated timeline with a January 2021 go-live date. This accelerated schedule incurs risks that the DOE has deemed acceptable given the potential larger risks associated with another legacy FMS failure. In order to speed implementation, the project has elected to implement a cloud-based Oracle Software-as-a-Service platform based on a pre-configured template, leverage Agile SDLC methods, limit the amount of new or improved functionality, and scaled back some project documentation. The SI has stated that they had scaled back early analysis efforts in order to meet DOE expectations for an accelerated schedule. The SI also stated that initial analysis would not be needed because the project will be adopting a preconfigured Oracle SAAS template for system implementation and that DOE users will be required to change their existing processes and adopt processes supported by the platform template. Some SMEs have reported early work session have been unproductive due to the lack of sufficient early analysis efforts.	The accelerated schedule could lead to: • Lack of thorough consideration of required business process changes resulting from the new system • User confusion and frustration due to the added burden of learning a new system with new processes, unmet expectations for improvements, and significant disruption to their daily duties • Over allocation of project resources and users • Significant OCM and Training efforts with limited time to plan and execute • Project decisions to cut corners to meet milestones and DOE expectation • Unproductive working sessions due to insufficient analysis efforts • Limited time to react to or resolve issues that may arise • Poor system design • A flurry of chaotic stakeholder activity as the project progresses closer to go-live. This risk could be exacerbated by other IV&V identified risks which could lead to a need to extend the project schedule. If these potential risks are realized, negative user feedback could lead to inflammatory media coverage which could negatively impact legislative, board of education, and public support. Some SMEs have reported early work sessions have been unproductive due to the lack of sufficient early analysis efforts. This risk could be exacerbated by other IV&V identified risk which could lead to a need to extend the project schedule. Still, the project has stated they will only go-live if the system sufficiently supports DOE operations and users are able to do their jobs.	• Take steps to assure sufficient OCM planning and activities are performed to prepare users for the significant change taking place at an accelerated rate. • Project leadership closely monitor project productivity and meet regularly to perform continuous process improvement (continuously reach out for feedback and move quickly to improve unproductive project elements and processes). • Leadership take steps to closely monitor project team capacity and assure resources are not overallocated. • Implement a plan for broad validation of system functionality with clear channels of communication for user feedback to assure all users are able to perform their duties prior to the project go/no-go decision. • Project make early efforts to plan for and prepare contingency plans in the event it becomes clear the accelerated schedule is unsustainable or critical project objective will not be met by the planned go-live date. • Prepare and implement a public relations plan to avoid inflammatory media coverage which could negatively impact legislative, board of education, and public support. • Consider employing the role of a Scrum Master whose prime directive is to remove roadblocks to productivity. • SI clearly and often communicate specific DOE activity prioritization and dependencies and perform risk mitigation planning to avoid schedule slippage. • Clarify DOE PM vs. SI PM roles on the project with regard to monitoring critical path activities that appear to be falling behind as well as other risk mitigation activities. • DOE explore providing the project with a dedicated report writer that could be trained on the new reporting tools and offer long-term (post go-live) report writing support to system stakeholders. • Project implement a minimum viable product strategy and make extensive efforts to determine which system features (interfaces,	02/15/21 - The project continues to drive towards a 7/16/2021 go-live date and have strategically moved out some components to be introduced mid-UAT or post go-live, and have assessed this risk to be acceptable and manageable. Introducing new components mid-UAT is generally considered a bad practice which could reduce system test effectiveness. This could be further exacerbated if the project elects to forego full regression testing. Introducing new functionality post go-live could increase user frustration and reduce user adoption/buy-in if not managed well by the OCM team. Further, adding this functionality soon after go-live could quickly overwhelm project resources given the already high level of activities that typically occur the first few weeks or months post go-live. DOE PMO shares IV&Vs concern that the level of effort to develop training materials and execute training could be higher than what was expected, and the project could potentially run out of time and miss key milestone dates. The SI is making efforts to plan to increase their training material development efforts to mitigate this risk. 01/15/21 - The project team continues to make extensive efforts to meet project milestones at an accelerated pace, however, the project is accepting some risks, including sacrificing quality (see finding #9 update), in order to complete the significant number of remaining tasks and meet project deadlines. As the details of the system design and required work arounds are clarified, DOE SMEs have expressed concerns that efforts to modify their policies and procedures to address work arounds may be extensive and that the system may not meet their users expectations. The project continues to operate with little visibility into whether project milestones can be met due to the lack of a detailed, fully resourced project plan (see finding #4), which has exacerbated this risk. SIT was originally scheduled for completion on 12/28/2020 until the schedule was re-baselined for SIT to complete on 1/25/2021, however, it remains unclear if the re-baselined dates are achievable. 12/15/20 - Due to the aggressive schedule, the project has elected to implement security and some other functionality during the later half of SIT. This could lead to schedle delays if the added functionality cannot be completed and tested in time to meet SIT exit criteria. Further, the SI, at times, appears to be foregoing some quality control measures as they rush to meet activity deadlines. The project has elected to forego test script revisions during SIT despite testers complaining of multiple spelling and grammer problems and that the scripts are difficult to follow. The SI is exploring additions to their team to shore up areas that have experienced	Cost & Schedule Management	Risk	Medium	Open	6/30/2020

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	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.	02/15/21 - Though DOE expecations for schedule management, level of detail, resourcing, and recording of actuals vs. baseline have gone unmet, the project appears to have accepted the risk of unexpected delays due to the lack of a comprehensive, fully resourced project plan. Though the SI has created task trackers outside of the project schedule, some team members have stated they don't always know what to do. IV&V continues to recommend the SI take steps to increase engagement with key DOE SMEs (e.g., phone calls or text messages) to clarify communication instead of relying on inefficient, lengthy, and extensive email exchanges that often create more confusion and frustration. 01/15/21 - IV&V has previously reported that the SI has yet to fully resource the project plan to ensure tasks are appropriately staffed/resourced and to provide clarity on whether the project can meet milestone due dates. The SI has indicated they intend to provide, at minimum, resourcing details for the single DOE resource (the DOE Lead BA) that is currently the bottleneck for important project tasks that lie in the critical path. IV&V continues to monitor risks related to the project schedule that could lead to the project being surprised when important milestones are missed because the project plan has not been fully resourced or because the project has not looked far enough ahead to plan for activities that could pose a risk to the schedule. 12/15/20 - IV&V and the DOE PMO continue to be concerned that planning outside of the rolling 6-week project schedule updates could be insufficient and could lead to schedule delays once these activities are thoroughly vetted and detailed. The SI has stated they are making efforts for future planning. 11/15/20 - The SI is currently updating the project schedule on a rolling 6-week basis and regularly reviews critical path tasks (at a high level) with the PMO. DOE PMO reports that while the current project schedule (and critical path) lacks some details, it has been, thus far, adequate for managing project activities. IV&V continues to monitor risks related to the project schedule that could lead to the project being surprised when important milestones are missed because milestone activities were not sufficiently tracked/managed or because the project has not looked far enough ahead to plan for activities that could pose a risk to the schedule. 10/15/20 - The PMP received final signature by the DOE Superintendent on 9/22/20. DOE stakeholders have reported that some project documents are not consistently kept up to date	Cost & Schedule Management	Risk	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.	02/15/21 - IV&V is escalating this risk to an issue since the SI has been unable to successfully address these challenges with their staff and because these challenges have likely contributed to many of the delays the project has seen thus far. IV&V continues to note (and DOE SMEs have confirmed) the SIs lack of preparation for meetings. Often, SI participants will have conversations with each other during meetings while DOE SMEs wait idle while they work among themselves to clarify their own understanding of a topic or coordinate their activities. With DOE SMEs already at capacity and being asked to perform tasks typically performed by the SI, this lack of preparation will likely further reduce their capacity until it is effectively addressed. DOE SMEs continue to note instances where work products are delivered without sufficient SI quality assurance. It appears that the SI continues to rely on DOE SMEs to perform basic QA instead of performing their own internal QA prior to delivery to their customer. 01/15/21 - The SI is making efforts to increase the capabilities and capacity of their team. The SI has recently onboarded an additional security resource, however, it remains unclear whether this has improved solutioning of security problems or delays in this area in time to meet security task deadlines. The SI has reassigned their Reports analyst to assist with GL configuration in order to improve communications with DOE SMEs. The SI has also stated they plan to onboard an additional testing resource to lead the testing effort so that the SI PM can focus their efforts on project management. DOE SME's continue to express a lack confidence in the SI functional leads expert knowledge of the system, ability to provide quality work products, follow through, and ability to communicate effectively among themselves. 12/15/20 - DOE SME's continue to report challenges with the SI project team that has led to an increase in their project workload as they seek to ensure SI work product quality, comprehensive SI communications and follow through, and proposed systems designs are fully vetted. The SI team continues to show signs of a general lack of technical leadership as important design decisions are delayed. However, the SI has made efforts to address DOE concerns and increase their teams capabilities and capacity. The SI has replaced their training lead with a resource that has proven success assisting other State (DAGS) projects and is therefore familiar with DOE capabilities and training needs. IV&V and DOE continues to note a lack of internal collaboration amongst the SI project team members which has led to some unproductive DOE/SI work sessions.	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	Identified Date
6	COVID	**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, it has already complicated planning for training 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 a less than optimal training effectiveness. 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. 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 hindered their productivity.	• Begin early contingency planning to address further impacts of COVID-19, such as potential furloughs as well as fully remote UAT and Training. • 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. • Continue to monitor project stakeholders are sufficiently competent with remote meeting technology and begin early efforts to help stakeholders to become highly functional with remote access technology (e.g. WebEx), as UAT and Training will likely require some level of (if not full) remote participation. • 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. • Detail relevant OCM strategies and plans for addressing the impacts of COVID-19 in the project OCM Plan. • Initiate efforts to request furlough exemptions for DOE project team members.	02/15/21 - Though remote work may have hindered productivity of many project tasks, the project appears to have overcome many of these obstacles thus far. IV&V remains concerned with the overhead of having to schedule meetings for most project activities in lieu of ad hoc discussions that would happen if the team were collocated and that challenges with regard to remote training could be difficult to overcome. 01/15/21 - State leadership has announced that furloughs will no longer be instituted beginning in January, but will likely begin July 2021. It is expected the DOE may be exempt from some furlough requirements. 12/15/20 - State leadership has announced that furloughs could begin January 4, 2021, though DOE could see less than the projected State-wide standard 2 furlough days per month. Given that the project currently relies heavily on 3-4 key resources (see Finding #2), if anyone one of these individuals contract COVID-19, the project could be negatively impacted by their lack of availability. 11/15/20 - No material updates for this reporting period. 10/15/20 - State leadership has indicated that they may be implementing State-wide bi-weekly furloughs as early as December 2020. The project is analyzing potential impacts and risk mitigations to address the loss of DOE resource capacity. Typically, SI and DOE project resources would be co-located in order to increase productive communications. IV&V has observed some unproductive communications likely due to an over-reliance on email for communications which is often overly verbose and difficult to follow. IV&V recommends the project team utilize ad-hoc phone discussions to improve the efficiency of communications and speed resolution of complex topics, instead waiting for large meetings to discuss and/or multiple volleys of laborious emails. 09/15/20 - IV&V remains concerned that COVID-19 related budget cuts could hinder funding of critical project budgetary needs. State leadership have indicated they will consider implementing State employee furloughs as COVID-19 budget shortfall measure. Furloughs could reduce the amount of time DOE team members spend on the project, which could lead to schedule slippage. 08/17/20 - Hawaii state leadership has indicated that they may renew a "work from home"	Project Organization & Management	Risk	Medium	Open	6/30/2020
7	Oracle Platform limitations	**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 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.	02/15/21 - IV&V remains concerned that work arounds due to Oracle limitations could unexpectedly increase the level of effort to produce training materials, conduct training, and execute their OCM strategy to achieve full user buy-in. IV&V also remains concerned that system configuration mistakes could trigger an environment refresh that could delay project go-live by at least 3-5 weeks. DOE technical leads have noted that though Oracle has provided the project with a representative that attends most project PM meetings, they have provided limited value to the project. Most requests or attempts to speak with Oracle Financials experts or other Oracle Financials customers have been unsuccessful. DOE technical leads have been left to perform their own research via the Oracle online documentation or post their Oracle questions to public forums to get answers to important technical questions. IV&V recommends 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. 01/15/21 - The project continues to address Oracle platform limitations with extensive work arounds which will likely increase the level of effort for OCM and training activities and potentially reduce user buy-in. The SI has recently informed DOE that they will not be able to secure PO attachments which could expose regulated/private special education student information. Also, the project has elected to eliminate the Oracle FMS default requisition feature in order to simplify entry of POs for their users. Additionally, IV&V remains concerned that mistakes made in configuring irreversible items in UAT or in the final production environment could require a 3-5 week environment refresh that could further extend the schedule and/or delay system go-live. 12/15/30 - Feedback from testers during SIT have led the project to reevaluate the use of Oracle Financials (OF) use of requisitions. The DOE legacy FMS did not utilize requisitions and testers have indicated the OF user interface is cumbersome, inefficient, and confusing. Testers have also complained of system slowness which the SI is in the process of addressing. Previously reported OF bugs introduced by the quarterly Oracle update have since been resolved by Oracle. 11/15/20 - The recent push of an Oracle quarterly update to the non-production environments introduced bugs and may have disrupted development efforts. It remains unclear when Oracle will be able to develop a patch for these bugs. DOE leadership remains concerned with the level of effort required for them to perform regression testing to test quarterly updates post go-live.	System Architecture & Design	Risk	Medium	Open	6/30/2020

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Identified Date
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	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 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.	02/15/21 - IV&V continues to note instances of poor PM practices including lack of SI preparation for meetings (see related update to Finding #5), poor communication, lack of meeting minutes/agendas, schedule confusion (see update to finding #4), and unproductive meetings.

01/15/21 - DOE SMEs continue to report (and IV&V has observed) instances of unproductive work sessions due to a lack of SI preparation for meetings. SI leads continue to rely on large meeting to elicit information from DOE SMEs when one-on-one phone calls could suffice. Further, meeting minutes and meeting agendas are not consistently provided to attendees. DOE PMO and IV&V continue to note instances of the SI scheduling meetings with multiple DOE participants that may have been unnecessary, or the amount of time taken could have been reduced if the SI had one-on-one conversations with SMEs to clarify or resolve issues prior to (or in lieu of) meeting with the larger group. IV&V recommends project leadership reassess meeting scheduling processes and reach agreement with DOE SMEs on more optimal meeting governance to reduce that number and length of meetings so the project team can accelerate project tasks. It appears the SI PM continues to be overallocated as some PM tasks are delayed, rushed, or missed, which may reduce the effectiveness of the overall management of the project.

12/15/20 - DOE SME's continue to report instances of unproductive work sessions due to a lack of SI preparation for meetings and/or lack of coordination of activities. Meeting minutes and meeting agenda's are not consistently provided to attendee's. DOE PMO and IV&V continue to note instances of the SI scheduling meetings with multiple DOE participants that may have been unnecessary or the amount of time taken could have been reduced if the SI had one-on-one conversations with SME's to clarify or resolve issues prior to (or in lieu of) meeting with the larger group. It appears the SI PM continues to be overallocated as some PM tasks are delayed or rushed, which may reduce the effectiveness of the overall management of the project.

11/15/20 - SI efforts to offload Testing Lead responsibilities from the PM to their new Test Lead have not met DOE expectations. If the SI PM continues to lead testing, the quality of SI project management could continue to be negatively impacted. Further, it remains unclear if adequate risk mitigation steps are being taken by the SI to ensure project deadlines are met. SI efforts to augment their team to accelerate tasks have not always proved successful. Therefore, IV&V is raising this risk to "Medium" priority. IV&V recommends DOE leadership work with the SI to | Project Organization & Management | Risk | Medium | Open | 6/30/2020 |
| 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. | 02/15/21 - The project continues to address Oracle security limitations that could limit DOE's ability to secure and hide sensitive information from their users. Though security tasks that had fallen behind schedule now appear to be on track, DOE and IV&V remain concerned with the quality of the security implementation and whether it is overly complex. The SI has stated they have taken steps to avoid security implementation missteps that occurred during SIT and that they have implemented improved quality control and release management processes for conducting UAT. The project has introduced additional approvals to the PO workflow process to address concerns of the potential for fraud. IV&V noted instances where the SI failed have their functional leads perform internal reviews of the security configuration spreadsheets prior to delivery to DOE SMEs for review, leaving DOE SMEs to struggle to properly vet security permissions they may not fully understand. Though the SI onboarded an additional security resource during the last reporting period, it remains unclear whether this has improved SI security challenges and thus far has not met DOE expectations. DOE SMEs remain concerned that security configurations may be less than optimal and DOE has requested the SI make efforts to clean up and optimize security roles and permissions prior to start of UAT (3/1/2021). Despite these challenges, DOE has noted that the implementation of security configurations appear to be adequate for entering into UAT, therefore, IV&V has reduced this finding criticality to "Medium".

01/15/21 - The project has identified several platform security limitations that could limit DOE's ability to secure and hide sensitive information from their users. For example, the project is accepting the risk that users will be able to access data that has previous been secured/hidden from their users (e.g., schools will be able to see other school's assets and procurement information). The single SI resources responsible for developing the security model and implementing security configurations in the system continues to struggle to meet project deadlines and effectively communicate the security model to DOE stakeholders. Failure to effectively communicate the security model to DOE SMEs could lead to DOE signing off on a model that does not meet their expectations. Testers have reported that security changes have been implemented without prior warning and security changes in the SIT environment have not followed release management procedures. It appears the SI is trading off quality for expedience in order to accelerate security tasks that have fallen behind schedule. The SI has onboarded an additional security resource to address these struggles. IV&V is concerned that compromises in security due to plaform and auto provisioning limitations could increase the risk of fraud. It remains unclear if users could potentially create and approve invoices that could result in | System Architecture & Design | Issue | Medium | Open | 7/29/2020 |

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Identified Date
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.	02/15/21 - DOE SMEs continue to discover instances of the SI failing to effectively follow release management processes. For example, DOE SMEs found that budget control wasn't setup properly as the SI failed to follow the provided spreadsheet or utilized the wrong version of the spreadsheet. Fortunately, DOE SMEs found the mistakes before they were implemented. As reported previously, mistakes made to irreversible configuration fields in UAT or Production environments could lead to significant project delays. 01/15/21 - Testers have reported that excessive security changes have been implemented without prior warning in the SIT environment during testing. Each time the SI implements changes/fixes to SIT, testers typically are required to re-run their test scripts; excessive changes can increase testers workload. It appears the SI continues to trade off quality for expedience in order to accelerate project tasks that have fallen behind schedule. DOE SMEs continue to have little confidence in the SIs ability to ensure quality. The SIs release management processes continue to lack sufficient rigor. IV&V remains concerned that mistakes made in configuring irreversible items in UAT or in the final production environment could require a 3-to-5-week environment refresh that could further extend the schedule and/or delay system go-live. Therefore, IV&V has escalated this risk to "High" priority. 12/15/20 - The SI continues to experience release management challenges. Recently, the worker interface file was uploaded into the SIT environment without notifying the DOE test lead, effectively invalidating their tests without notice. The testing lead happened to recognize the problem when they were re-running a test script and noticed different results due to the change in the worker data. With multiple members of the project team working at or beyond capacity, testing coordination has become difficult and led to testing missteps. IV&V remains concerned that SI unit testing may be inadequate as they rush to complete tasks. Failure to fully unit test configurations/code pushes the burden of finding bugs onto the DOE testing team who is already operating at capacity. IV&V recommends DOE request the SI improve their unit testing efforts. Previous SI release management challenges continue to create problems (incorrect date formats) for interface development as the system does not allow developers to easily back out incorrect configurations. 11/15/20 - The SI continues to have some challenges with ensuring their leads are consistently following release management processes and keeping DOE SME's well informed of their release	Quality Management	Issue	High	Open	7/31/2020
11	KT & Long term support	**Insufficient knowledge transfer and M&O planning prior to go-live could lead to project delays and diminished quality of post go-live support.**	There appears to be a lack of clarity around post go-live support responsibilities and the level of SI support. Apparently, some contractual post go-live support requirements have yet to be clarified and agreed to between the SI and DOE. Further, DOE expectations for the SI to train their IT staff have not been met. The DOE IT group currently has some interface development project responsibilities and DOE's expectation was that the SI would provide sufficient knowledge transfer (KT) on Oracle Financials (OF) and Oracle Integration Cloud (OIC) in order to perform these tasks in a timely manner as well as meet expectations for DOE post go-live support responsibilities. DOE has stated their expectation that DOE IT staff would work alongside the SI technical team for KT throughout project implementation, however, the level of KT has not met DOE expectations thus far. The SI has stated they are not contractually obligated to formally train the DOE IT staff on the technology.	If the DOE IT staff are not sufficiently trained to effectively implement their project tasks this could lead to a reduction of efficient execution and quality of the technical components they have been assigned and, ultimately, to schedule slippage. Lack of clarity or sufficient planning around post go-live support could lead to diminished quality of post go-live support. Failure to adequately augment the existing DOE IT group with OF skillsets could leave DOE unable to adequately support the new OF system post go-live and lead to an over-reliance on costly vendor resources and impact the project budget.	• DOE develop a resource management plan to address gaps in their existing their existing IT team to ensure they are able to meet expectations for project implementation and post go-live support. • 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.	02/15/21 - DOE remains concerned that their system support personnel have yet to fully participate in project configuration activities that they will be responsible for post go-live. As go-live approaches the project resources will likely become more and more constrained and have little time to effectively perform knowledge transfer (KT). Further, the SI has yet to provide DOE technical staff with Oracle Integration Cloud (OIC) and Oracle Enterprise Performance Management (EPM) training they are committed too. The SI has indicated they are confident in their KT plan which will include documented "How To"s for DOE support staff, a sandbox environment that the SI will use to walk the support staff through support system activities, and KT sessions for specific topics like report development and security configuration. 01/15/21 - The SI has made efforts to provide DOE with details of their plans for knowledge tranfer which DOE is in the process of reviewing. M&O planning is underway but the SI has recognized the need for more experienced resources for this effort and plans to augment their team appropriately. 12/15/20 - The DOE IT team is making efforts to prepare for post go-live support and remains concerned the complexity of the security model could make it difficult to support. While details of post go-live support DOE/SI responsibilities have yet to be clarified, the SI has begun work on an M&O plan. The SI has stated they plan to garner lessons learned as the project progresses to help determine the recommended levels of support. 11/15/20 - IV&V and DOE leadership remains concerned with the level of effort required for DOE to perform post go-live regression testing to test quarterly updates. They also remain concerned that bugs could be introduced that are not caught in regression testing that could be inadvertently promoted to the production environment, which could quickly overwhelm DOE resources as they work to correct or provide adequate work arounds. DOE is in the process of evaluating automated testing tools that could enhance regression testing post go-live. Details of post go-live support DOE/SI responsibilities have yet to be clarified. 10/15/20 - The SI has scheduled 4-5 two hour Knowledge Transfer (KT) sessions for the DOE support staff who will be performing system user provisioning tasks post go-live. The project has initiated Maintenance & Operations (M&O) meetings to begin planning for post go-live system support.	Project Organization & Management	Risk	Medium	Open	8/17/2020

Id	Short Desc	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Identified Date
12	Testing	**Insufficient testing strategy and planning could lead to poor test quality, including incomplete and invalid test results**	IV&V has observed some unproductive test preparation work sessions and some confusion among the project team members as some elements of the test strategy and plan are unclear or not well defined. At times, it appears the SI is asking DOE test leads to perform activities they lack expertise to perform. DOE test leads have also stated that SI led testing preparation efforts have not always been productive and have not met their expectations that the SI would provide sufficient testing preparation guidance. The SI appears to have responded by replacing the SI Test Lead, and the SI PM has taken over as the SI Test Lead, despite concerns that the SI PM may be overallocated. It is unclear whether the SI PM has capacity to effectively lead the testing effort and provide DOE test leads with sufficient guidance for them to adequately prepare for testing. The SI reports that they are making efforts to find a permanent replacement. Additionally, IV&V has concerns with the proposed testing strategy. The SI has stated they intend to begin SIT without some system components being fully operational which could, A) result in incomplete testing and, B) invalidate test results for functionality that has been previously tested.	Delays and unproductive test preparation sessions could lead to schedule delays once the project realizes they are not ready for SIT and UAT testing phases. If the SI cannot effectively leverage their testing expertise to offer guidance to the DOE testing team, DOE testing stakeholders could find themselves unprepared for SIT and UAT phases, which could lead to schedule delays. If the project, A) does not clearly define SIT or UAT entrance criteria and/or B) enters SIT or UAT phases without some system components being fully operational, the value of the project testing phases could be significantly reduced and lead to excessive bugs, overcomplicated testing, a solution that cannot perform the required or necessary functionality, and ultimately extend the project schedule.	• Clarify and fully vet the testing strategy and plans for DOE leads and stakeholders. • Develop and implement a robust regression test methodology. • Develop and implement an efficient process for updating/refining test scripts based on tester.	02/15/21 - Though close out of SIT continues to be delayed, the project is moving towards kicking off UAT on 3/1/21. The projects decision to strategically move out some components to be introduced mid-UAT and to forego full regression testing as a UAT exit criteria has exacerbated this risk. Introducing new components mid-UAT is generally considered a bad practice which could reduce system test effectiveness. This could be further exacerbated if the project elects to forego full regression testing. The DOE testing lead continues to be relied on by the SI to perform activities that would typically either be performed by the SI or heavily supported by the SI. The DOE test lead appears to lack sufficient knowledge of the new system in order to perform some tasks and it remains unclear if SI has fully addressed this knowledge gap. 01/15/21 - DOE continues to report that their expectation for SI led testing activities have not been met. The SI has recently revisited their test script quality and has committed to making improvements. IV&V remains concerned that the SIs testing approach lacks sufficient rigor and quality controls and that there is currently no indication the project will perform SIT regression tests. SIT testing results seem positive thus far, however, IV&V and DOE leadership remain concerned that test script may lack sufficient coverage of some aspects of system functionality. The project has elected to implement some functionality late into UAT which could reduce the quality of UAT testing and lead to unexpected bugs at go-live. 12/15/20 - DOE has indicated that the SI testing approach and SI produced test script quality has not met DOE expectations. The DOE Test Lead has noted multiple shifts in approach, inefficiencies, and confusing procedures. Testers have noted multiple test script grammar and spelling errors and have complained that scripts lack sufficient instructions or important step execution details. This has led to an increase in the test teams workload as they struggle to follow some script instructions. This could also lead to testers marking a test as successful when it is not. It appears the SIT test scripts were not reviewed (proofread or QA'd) by the SI prior to delivery to the DOE test team and may not have been used for SI unit testing, a common practice to ensure test script quality. Further, testers have reported instances where they were given test scripts that tested functionality that had not been fully implemented in the system. The project has elected to forego revising the test scripts throughout SIT due to time constraints, but plans to revise them before the start of UAT. DOE has accepted this risk in order to keep with their aggressive schedule.	Quality Management	Risk	Medium	Open	9/15/2020
13	Antiquated systems	**Integration with older (antiquated technology) systems could be unexpectedly complicated and lead to schedule delays**	The project currently has requirements to integrate with older systems that often lack sufficient documentation and/or system expertise. A number of systems that the new FMS must interface with are based on older technology that may be incompatible with new technology and can be difficult to integrate with. Many systems have accumulated a significant amount (decades in some instances) of technical debt, reportedly due to lack of funding and technical team capacity. For example, it has been reported that patching for many systems are severely out of date and may run on Operating Systems or other software technology/tools that are no longer supported by the vendor. Many of these systems no longer have system experts because support staff have moved on or retired, and documentation and/or knowledge transfer upon their departure may not have been sufficient. Documentation for many older systems is reportedly missing or incomplete.	Unexpected complications that arise in attempts to integrate with antiquated systems can lead to project delays or unexpected costs for tools to compensate for limitations of antiquated systems. Interface development efforts can also be delayed when expected system documentation, expertise, or vendor support is no longer available. Given the amount of technical debt these systems have accumulated over the years and the lack of system patching, the system could open the FMS replacement system, other connected systems, and the DOE to undue system failure risks. If any of these antiquated DOE systems fail during project execution, project resources (who are already at capacity) will likely have to be reallocated towards repair and recovery of these systems, and lead to schedule delays.	• Consider petitioning the State leadership for additional funding to resolve technical debt that could be putting the project and the State at risk of potentially embarrassing and costly security breaches and/or critical system failures. • Consider prioritizing patching and system upgrades to stabilize boundary systems. • Perform early discovery and due diligence to identify potential complications with integrating with older systems. • Consider implementing early, basic proof of concept interfacing with older systems to assure integration is feasible and to vet optimal interface solutions.	02/15/21 - External system interfaces continue to introduce delays in the project schedule,;therefore, IV&V has escalated this finding to an "Issue". The project has elected to introduce some interfaces late into UAT which introduces testing and schedule risks. The project appears to have resolved HR system integration issues with the FMS HCM module and has made progress on resolving DAGS interface issues (e.g., check printing overflow challenges). The project has confirmed that they will be able to delay to transition of p-card from Bank of Hawaii to First Hawaiian Bank post go-live. 01/15/21 - Some external interface delays have led to project schedule delays and the project has made additional efforts to address external department delays. For example, ETS took 1 month to get approval for the 40 hours of work to implement project requested changes to their interface. Some project tasks have been delayed due to late engagement of the DOE Office of Talent Management (OTM), as the project has paused some activities to determine how utilization of some Oracle HCM data elements could negatively impact future DOE plans to migrate their HR systems to Oracle HCM. Further, unresolved issues with DOE check printing interfaces to DAGS could lead to additional delays as there is no clear solution for check print overflows and OFO (facilities) interface issues have yet to be resolved. 12/15/20 - Interfaces continue to face delays and are likely to continue to cause schedule slippage. Interfaces with external systems continues to be a challenge for the project. It remains unclear why the DAGS payroll system interfaces has been delayed. Concerns have been raised that outbound interface testing could be hindered if external stakeholders are unavailable or unresponsive. For example, the project has yet to get a clear answer with regards to p-card migration from Bank of Hawaii to First Hawaiian Bank. Delays like this could lead to project delays. 11/15/20 - The project is continuing efforts to modernize the DAGS payroll system interface; however, it remains unclear whether delays will be introduced due to DAGS limited capacity to support this effort. 10/15/20 - The project has identified at least one existing incoming boundary system interface that they will be making efforts to modernize as a means to decouple from the mainframe and simplify ongoing M&O efforts. The interface currently utilizes an antiquated encoding format	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.			Project Organization & Management	Preliminary Concern	N/A	Open	2/15/2021