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July 19, 2024

The Honorable Ronald D. Kouchi
President of the Senate
and Members of the Senate
Thirty-Second State Legislature
State Capitol, Room 409
Honolulu, Hawai'i 96813

The Honorable Scott K. Saiki
Speaker and Members of the
House of Representatives
Thirty-Second State Legislature
State Capitol, Room 431
Honolulu, Hawai'i 96813

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

Pursuant to HRS section 27-43.6, which requires the Chief Information Officer to submit applicable independent verification and validation (IV&V) reports to the Legislature within 10 days of receiving the report, please find attached the report the Office of Enterprise Technology Services received for the State of Hawai'i, Department of Labor and Industrial Relations (DILR) Hawai'i Unemployment Insurance Modernization (Hui Huaka'i) Project.

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

Sincerely,

Tom Ku

Tom Ku
Acting Chief Information Officer
State of Hawai'i

Attachment

Hawaii Department of Labor and Industrial Relations (DLIR) HUI Huaka'i Project

IV&V Initial Assessment Report

Public Consulting Group (PCG)

June 26, 2024

PUBLIC CONSULTING GROUP

TABLE OF CONTENTS

DOCUMENT HISTORY

Version	Date	Brief Description of Modifications
Initial Version	6/17/2024	Initial Submission – IV&V Initial Assessment
Revised Version	6/19/2024	Revised Submission – IV&V Initial Assessment
Final Version	6/26/2024	Final Submission – IV&V Initial Assessment

1. EXECUTIVE SUMMARY

The Initial Assessment Report describes Public Consulting Group's (PCG) Independent Verification and Validation (IV&V) review of the HUI Huaka'i project during the assessment period from April 16, 2024 through May 31, 2024.

The IV&V process, meticulously conducted by PCG, is designed to objectively assess project deliverables and processes at specific points during the HUI Huaka'i project life cycle. This comprehensive approach facilitates early detection and correction of errors and enhances management insight into risks, ensuring strict compliance with project standards. The detailed results of PCG's IV&V activities for this assessment are recorded in the Findings and Recommendations Log and provide a reliable and comprehensive overview of all findings, risks, and recommendations.

The IV&V review was conducted with attention to detail. It involved a comprehensive review of pertinent project documentation against industry standards, best practices, and process maturity measures. Essential project resources were interviewed, and meetings were attended to observe adherence to stated project policies and processes. The review focused on the vital functions in the current documentation related to:

- Conducting an Initial Assessment of the Completeness of the UIS Project Plans and Strategy Documents
- Analyzing the Effectiveness of the Project Approach
- Evaluating the Project Schedule
- Examining the Project's Management Structure
- Surveying the Project's Requirements
- Reviewing and Providing Feedback on Project Deliverables
- Validating Project Success Metrics (i.e., definitions of successful project outcomes)

A few notable circumstances qualify the contents of this IV&V Initial Assessment Report. Firstly, the Project is in the very early stages of design, development, and implementation (DDI). This initial assessment focuses on the startup and planning activities of the project. Secondly, the state of the Project during this initial assessment does not include detailed technical deliverables. Consequently, the contents of this report will represent broader and less technical findings than may be expected of future IV&V reports.

IV&V noted the extensive technical and business knowledge held by the project's resources, which includes many team members from HUI Huaka'i and the Project's system integration vendor (Netacent) with a long history of working on UI systems. This wealth of experience, often called "inherited knowledge," is a strong asset for the HUI Huaka'i project, contributing significantly to its stability and efficiency as it progresses. Furthermore, the Project's documentation is well-organized, and the Project Management Organization (PMO) effectively oversees the deliverable management process. IV&V is confident that the Project will continue to thrive, benefiting from this strong knowledge base and documentation, combined with a solid understanding and execution of project processes, which are crucial for the project's success and stability.

IV&V's overall observation is that the project management team has successfully established and reinforced a project culture and tone of collaboration, cooperation, flexibility, and accountability. This environment is designed to foster success and is a testament to the team's commitment and dedication to the project's goals.

2. OVERVIEW

2.1 PURPOSE

The PCG Initial Assessment Report for the HUI Huaka'i Project assesses and analyzes current project functions and activities. It aims to provide HUI Huaka'i and the project with an independent and objective understanding of its progress, successes, challenges, risks, issues, and recommendations at a specific time.

2.2 OBJECTIVES

Below are the Objectives of the Initial Assessment Report:

- Deliver an independent, objective, and evidence-based point-in-time assessment of current and critical project functions and activities, as defined in PCG's response and agreed to by DLIR
- Offer the HUI Huaka'i project more insight and understanding into project activities
- Gain a better understanding of project resources, goals, processes, tools, and planning
- Identify and build relationships with key project stakeholders
- Establish communication protocols with key project stakeholders and resources
- Identify areas of concern for IV&V to follow up on

3. ASSESSMENT ACTIVITIES

This section provides the analysis, observations, themes, and supporting evidence from IV&V's assessment.

Initial IV&V assessment activities during this reporting period included:

- Conducting an Initial Assessment of the Completeness of the UIS Project Plans and Strategy Documents
- Analyzing the Effectiveness of the Project Approach
- Evaluating the Project Schedule
- Examining the Project's Management Structure
- Surveying the Project's Requirements Tracking
- Reviewing and providing feedback on Project deliverables
- Defining Successful Project Outcomes
- Validating Project Success Metrics (i.e., definitions of successful project outcomes)
- Reviewing the Project Charter
- Analyzing the Risk Matrix
- Reviewing HI DLIR IV&V RFP
- Assessing the Stakeholder Register

3.1 CONDUCTING AN INITIAL ASSESSMENT OF THE COMPLETENESS OF THE UIS PROJECT PLANS AND STRATEGY DOCUMENTS

Below is the summarized analysis of IV&V's review of the project planning and strategy documents. IV&V utilized PCG's propriety checklists to provide feedback and recommendations.

3.1.1 End User Training Strategy:

IV&V has reviewed and provided feedback on the End User Training Plan drafted by Netacent and has the following recommendations.

Metrics

Metrics identified for End User Training could include:

- Demonstrate proficiency in locating key features and functions.
- Access and navigate the system easily.
- Perform core functions and processes using the system, following the correct steps and procedures.
- Develop skills to handle common scenarios and exceptions encountered while using the system and apply appropriate problem-solving techniques.
- Equip with the knowledge and skills to troubleshoot and resolve minor system issues, minimizing workflow disruptions.
- Understand how to use the system in compliance with relevant policies and regulations, ensuring adherence to organizational standards.
- Provide feedback and suggestions for system improvement, contributing to continuously enhancing the system's functionality and usability.

As supporting plans and artifacts are developed for End User Training, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.1.2 Data Conversion Strategy:

IV&V reviewed and provided feedback on the Data Conversion Strategy document prepared by Netacent. The Conversion Strategy accurately describes the processes, procedures, and tools used to conduct and maintain data conversion. The strategy document effectively outlines several sections that are typical of a strategy document.

Metrics

Metrics identified in the Data Conversion Strategy document include:

Status reporting/transparency - quality metrics are mentioned as reporting on the quality of converted data, including accuracy, completeness, and consistency. This will also include reconciliations.

As supporting plans and artifacts are developed for Data Conversion, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.1.3 Business Process Reengineering Strategy:

IV&V reviewed and provided feedback for the Business Process Reengineering (BPR) Strategy document created by Netacent and Pacxa, the BPR vendor. The document states that the BPR process will help HUI Huaka'i achieve four of the five strategic objectives and bring transformative improvement to UI services. It also outlines expected benefits such as cost savings, reduced cycle times, faster response times, and corresponding KPIs.

Metrics

In partnership with the HUI Huaka'i Project Team, Netacent, Paxca, and Aegis Experts will develop a comprehensive set of metrics and key performance indicators (KPIs) for the UI BPR efforts. The document provides some specific examples of metrics and KPIs in the areas of Process Efficiency, Time Savings, Customer Satisfaction, Employee Engagement and Satisfaction, Training Effectiveness, and Continuous Improvement that Netacent will implement and provides examples of various methods such as surveys, interviews, focus groups, and system-generated reports that Netacent would employ to gather data for these metrics.

As supporting plans and artifacts are developed for Business Process Reengineering, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.1.4 Communication Strategy:

IV&V has reviewed and provided feedback on Netacent's Communication Strategy document. The document effectively outlines what, when, and to whom information should be communicated. It identifies communication channels and tools, key stakeholders, and a model for two-way communication.

The document outlines the development of a stakeholder analysis tool and register. It includes methods for reporting project status, issues, risks, and risk mitigation strategies. Additionally, the document details the management of stakeholder expectations and project performance measurement.

Metrics

Metrics identified in the Communications Strategy document could include:

- Number and type of project inquiries and questions
- Priority and urgency level distribution
- Status and resolution rate

- Average response and resolution time
- Assigned project team member performance
- Submitter satisfaction
- Any issues or trends
- Add analytics and metrics to measure communication effectiveness from communication channels and tools, such as websites, intranets, social media, email, and newsletters, including the number of views, clicks, opens, shares, likes, comments, downloads, or subscriptions.

As supporting plans and artifacts are developed for Communication, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.1.5 OCM Strategy

The OCM (Organizational Change Management) Strategy document contains a comprehensive framework, approach, diagram, and high-level implementation timeline.
The Project will prepare users for the new environment/system through Change Impact Analysis (CIA) sessions and targeted communications. It will track the impact with readiness surveys and stakeholder focus sessions throughout the project lifecycle.
The document outlines stakeholder engagement and identifies key business stakeholders. The business sponsor, who is part of the Department Leadership (Directors, Business Owners/Leaders), is responsible for the project's success in their respective area.

Metrics

Metrics identified for OCM Strategy could include:

- Compliance Metrics
- Risk Management Metrics
- Incident Metrics
- Vulnerability Metrics
- Access Control Metrics
- Training and Awareness Metrics
- System and Application Metrics
- Data Protection Metrics
- Performance Metrics
- Policy and Procedure Metrics
- User Behavior Metrics
- Third-Party Risk Metrics
- Security Investments Metrics

This current OCM strategy document outlines the majority of these metrics. Once Netacent implements the strategy, the team can evaluate and measure the metrics against what has been implemented.

As supporting plans and artifacts are developed for Organizational Change Management, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.1.6 Security Architecture Strategy

The Security Architecture provides an overview of the National Institute of Standards and Technology (NIST) framework but lacks detailed information on implementation. There are mentions of the Federal Information Security Modernization Act (FISMA) compliance, NIST SP 800-53 support, and FedRAMP

security levels that require further clarification and confirmation. The feedback that IV&V provided was based on the strategy documents, and additional information was assumed to be added to future plans.

Metrics

Metrics identified for the Security Architecture Strategy could include:

- Compliance Metrics
- Risk Management Metrics
- Incident Metrics
- Vulnerability Metrics
- Access Control Metrics
- Training and Awareness Metrics
- System and Application Metrics
- Data Protection Metrics
- Performance Metrics
- Policy and Procedure Metrics
- User Behavior Metrics
- Third-Party Risk Metrics
- Security Investments Metrics

The Security Architecture Strategy Document outlines a great plan for executing each metric. Once implemented, the team can measure and report on them.

As supporting plans and artifacts are developed for the Security Architecture Strategy, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.1.7 Technical Architecture Strategy

IV&V has reviewed the Technology Architecture Strategy document developed by Netacent. The latest version (Version 2) contains information regarding the solution's technical architecture and is built on the Microsoft technology stack. For example, it includes Azure Cloud, various Azure services and products, Azure SQL Databases, and Power BI.

Data Station is the Netacent application customized to meet the State's requirements for the HUI Huaka'i Platform. It is built using the .NET framework and the Model-View-Controller (MVC) application architecture. Data Station and its cloud infrastructure follow a microservices architecture and will be hosted in an Azure FedRAMP Cloud. It will utilize encryption, Multi-factor Authentication (MFA), and Role-Based Access (RBAC). The implementation will comply with NIST SP-800 53 rev 4/5 specifications and use Infrastructure as Code for defining, managing, and provisioning computer infrastructure and DevOps.

Metrics

The Technical Architecture Strategy document includes the Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO). It describes how Data Station's infrastructure utilizes Azure's capabilities to adjust resources based on predefined rules and metrics automatically. It also addresses monitoring and adjusting resource allocations based on actual usage and performance metrics. Furthermore, the document mentions using tools to proactively monitor and analyze performance metrics to identify and address performance issues. For example, it discusses monitoring key metrics such as claim volumes, processing times, and fraud detection rates.

As supporting plans and artifacts are developed for Technical Architecture Strategy, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.1.8 Business Continuity Strategy:

The Business Continuity content should be divided into two separate sections to provide thorough coverage of the risk assessment and the business impact analysis. The Risk Assessment section should explicitly identify and include operational risk as an additional risk. The assessment of each identified risk should be expanded with qualitative or quantitative measurements. The impact assessment details will need to be elaborated in the planning document. Additionally, the document should include a vulnerability assessment to identify weak points in critical business functions and processes, outdated systems, and physical security. Specific mitigation measures need to be added to the plan for IV&V to provide analysis. Recommendations on residual risk assessment will be provided after the plan is presented. Resource requirements and residual risk assessment should be addressed in the relevant section, and the discussion should be expanded to cover industry-specific regulations and data protection laws.

In the Business Impact Analysis section, Recovery Time Objectives (RTOs) should be addressed by discussing strategies for determining the maximum acceptable downtime for business processes and target time frames for restoring critical functions after a disruption. Recovery Point Objectives (RPOs) should be addressed by discussing strategies for identifying the maximum acceptable data loss and the frequency of data backups needed to meet RPOs. Quantitative and qualitative assessments of the potential impacts of disruptions should be included. Maximum Acceptable Outages (MAOs) should be addressed by discussing the longest period a business function can be unavailable without significant harm, aiding in the prioritization and sequencing of recovery efforts. The discussion on network resilience should be expanded to include redundant network paths, IPS redundancy, and firewall and security measures. System and application resilience should be discussed, including high availability (HA), scalability, and regular testing and drills. Information on the incident response plan, continuous monitoring, patch management, and the strategy for managing third-party vendors should be included. Finally, a strategy for continuously monitoring the business continuity strategy should be included, mentioning any tools used for this purpose. By addressing these, the document will provide a comprehensive and detailed approach to both risk assessment and business impact analysis, enhancing the overall strategy and planning.

Metrics

Use the proposed metrics to measure the future implementation of the Business Continuity strategy. Once the strategy is implemented, the team can monitor and report on the metrics

Metrics identified for Business Continuity Strategy could include:

- Recovery Metrics
- Data Metrics
- Incident and Response Metrics
- Testing and Drills Metrics
- Communication Metrics
- System and Application Metrics
- Compliance Metrics
- Financial Metrics
- Resource Metrics
- Employee and Training Metrics
- Third-Party Metrics
- Business Impact Metrics
- Continuous Improvement Metrics
- Customer Impact Metrics
- Technology Metrics

As supporting plans and artifacts are developed for Business Continuity, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.2 EVALUATING THE PROJECT SCHEDULE

The Project has issued a single schedule dated May 22, 2024. The Project is still in the early stages and progressing as planned in the schedule. During the Project, IV&V will monitor and review the schedule on a regular basis and provide feedback.

IV&V acknowledges that the Project is still in the early stages and progressing as planned in the schedule. During the Project, IV&V will continue to monitor and review the schedule regularly and provide any recommendations.

As supporting plans and artifacts are developed for the Project Schedule, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.3 ANALYZING THE EFFECTIVENESS OF THE APPROACH

The Soundness of Approach process includes analyzing and reviewing the following available documentation to confirm the practicality and feasibility of the project's resources, timeline, risks, documentation, processes, and procedures.

- Implementation Strategy Plan
- Risk Matrix
- Project schedule
- Project resources and allocation
- Interviews with project staff
- Solicitation and contract documentation

Tasks that IV&V will address in future reporting periods include:

- Evaluate future plans and documentation, processes, and procedures.
- Evaluate project progress, resources, budget, schedule, workflow, and reporting.
- Verify project success metrics.
- Verify evaluation criteria.

IV&V has started attending project meetings and will continue to monitor the Effectiveness of the Approach throughout the project's life cycle.

As supporting plans and artifacts are developed for Analyzing the Approach, IV&V will work with HI as appropriate to ensure that they meet HUI Huaka'i requirements as well as PMBOK standards and industry best practices.

3.4 EXAMINING THE PROJECT'S MANAGEMENT STRUCTURE

The HUI Huaka'i project is following the Agile development methodology and is forming a team with Agile roles and responsibilities. The HUI Hauka'I Project Manager (PM) leads the team, facilitating collaboration and communication and setting goals and objectives while adhering to the project schedule. The Netacent PM, with a strong background in UI, will act as the scrum master to ensure that daily stand-ups and Agile ceremonies are conducted to engage stakeholders. IV&V has observed that the PMs partner and collaborate effectively and are the established leaders for the project and project teams.

The Steering Committee has been established and includes key senior project leaders. The Steering Committee leadership includes two Product Owners (POs). The POs are responsible for making critical decisions on future functionality and have decision-making authority to prioritize requirements while directing the team's efforts to align with the broader product strategy.

The Subject Matter Experts (SMEs) are from different functional UI areas, each with a strong background in relevant program-specific areas like Tax, Benefits, and Data Conversion. Netacent and HUI Huaka'i has assigned SMEs to ensure that the "Business" and "Development" teams have a shared understanding.

The project has defined team members' responsibilities in specific task areas through a RACI (Responsible, Accountable, Consulted, and Informed) chart, which will be updated throughout the project. The preliminary Project Management Plan from Netacent clearly outlines the responsibilities of HUI Huaka'i and Netacent for each role within the team.

For this initial assessment, IV&V observed that the current management structure provides a solid foundation for the team to build upon, and the project leadership has the expertise to move forward and continuously achieve project success.

Additionally, IV&V acknowledges that it is early in the project. As the project progresses, IV&V will continue to monitor and provide feedback on the Management Structure through monthly reports, including findings, risks, issues, observations, and recommended mitigation actions.

3.5 SURVEYING THE PROJECT'S REQUIREMENTS TRACKING

During this assessment period, the HUI Huaka'i team held Clarification sessions to address questions or clarify some of the current requirements. The HUI Huaka'i project will use Azure DevOps (ADO) to input, update, and track requirements throughout the Software Development Lifecycle (SDLC). The Requirements Tracking Matrix (RTM), a key artifact for the requirements management process, is being finalized. The RTM is a living document and will be updated throughout the project.

During the requirements phase, the IV&V team will play a pivotal role, attending meetings and working closely with the HUI Huaka'i team. IV&V will provide feedback and recommendations to identify and address internal and external inconsistencies and deviations from industry and organizational standards. A project as complex as HUI Huaka'i needs to adhere to industry standards by developing any necessary planning documentation, validating the approach to requirements, documenting the As-Is and To-Be process, and utilizing tools and methods such as the RTM.

3.6 REVIEWING AND PROVIDING FEEDBACK ON PROJECT DELIVERABLES

The following table has been created based on the Project Management Book of Knowledge (PMBOK).

IV&V reviewed the files from the HUI Huaka'i SharePoint under folder 06 Deliverables and the documents related to the tasks listed in the Control Log and compared them with the deliverables from the PMBOK.

IV&V acknowledges that it is still early in the project and that commenting on deliverables in certain areas, such as Maintenance and Operations (M&O), is premature. The table below reflects deliverables that could be included in this phase of the project.

Additionally, IV&V included the strategy documents despite not being included in the PMBOK.

PMBOK Knowledge Area	Plans Completed	Plans In-Process
Project Organization and Management	• Project Charter • Project Schedule • * Schedule Baseline • Issue Log (moving to ADO) • Project Status Reports • Project Management Plan	

PMBOK Knowledge Area	Plans Completed	Plans In-Process
Project Scope Management	• Requirements Traceability Matrix (RTM) • Requirements Management Plan	
Project Resource Management	• End User Training Strategy	• Resource Management Plan • Training Plan
Project Communications Management	• Communications Strategy	• Communications Plan
Project Risk Management	• Risk Register / Matrix	• Risk Management Plan • Risk Report / Dashboard
Project Stakeholder Management	• Stakeholder Register / Matrix • RACI	
Systems Architecture, Design, Development and implementation (DDI)	• Technical Architecture Strategy • Business Process Reengineering Strategy • Data Conversion Strategy • Security Architecture Strategy • Test Strategy • UIS Implementation Strategy • Business Continuity Strategy	• Design Documents
Organizational Change management (OCM)	• OCM Strategy	• Training Materials • Readiness Assessments

* The report is being produced and delivered and is yet to be reviewed by IV&V.

3.7 DEFINITIONS OF SUCCESSFUL PROJECT OUTCOMES

Several key factors typically define successful project outcomes, each highlighting a different aspect of project success. It is early in the project; however, to date, IV&V has observed the HUI Huaka'i team beginning to define the following:

- Schedule adherence: Completing tasks on the project schedule and meeting the deadline.
- Stakeholder Satisfaction: Meeting stakeholder expectations.
- Effective Resource Utilization: Utilizing resources effectively and efficiently, including human, material, and technological assets.
- Risk Management: Identifying and managing risks effectively throughout its lifecycle, minimizing adverse impacts.
- Effective Communication: Maintaining clear, consistent, and effective communication with all stakeholders throughout its duration.

- Sustainability: Aiming to produce long-term sustainable outcomes, providing ongoing benefits and ensuring maintainability.

To achieve these factors, projects typically require careful planning, execution, monitoring, and control throughout their lifecycle.

4. FINDINGS AND RECOMMENDATIONS

This section will provide details on all the findings and recommendations identified by IV&V as a result of the assessment.

Risk Number (ID)	Date Opened	Title	Description	Finding Type	Priority	Category	Recommendation
2	5/31/2024	LMI Meeting was Structured Effectively	During the LMI Clarification Session, IV&V observed that the "current state" section was populated before the session. This proved to be good preparation for the session, as it provided context to the participants and helped facilitate effective discussions.	Positive Observation	N/A	Project Management	IV&V recommends continuing this best preparation practice and applying it to future meetings and engagements.
3	5/6/2024	Monitor and track project resourcing	It is the nature of IT projects that resources can be onboarded/offboarded during the project's duration. Onboarding/offboarding impacts project areas such as team dynamics, project momentum, and productivity.	Observation		Resource Management	IVV recommends that HUI Huaka'i monitor and track project resourcing as resources are onboarded/offboarded and the impact onboarding/offboarding has on areas such as team dynamics, team morale, project momentum, productivity, re-assignment of responsibilities, and knowledge transfer (KT).

APPENDIX A APPROACH AND PHILOSOPHY

The basis of PCG's philosophy when engaging in the UIS project is based on our extensive IV&V experience, our success in implementing our Eclipse IV&V Framework for UI modernization projects, and the experience and skill of our industry-leading staff. However, our best practices and expertise are only as good as they are relevant to our clients' goals. Therefore, our efforts will be framed by the key goals that DLIR has identified for the UIS project, including:

Improving system security and reducing fraud
Delivering a better, more intuitive customer experience
Improving the employee experience and transforming business processes
Leveraging real-time insights
Enabling capability to adapt to changing economic conditions and support programs
PCG understands the balance that must be struck between flexibility and control, especially as it relates to a UI system that must handle and process sensitive information that is needed to serve Hawaii's citizens through their most difficult times.

As the IV&V vendor, PCG has proven that it will not only ensure that projects run according to specifications, but we pride ourselves in serving our clients as true consultants to ensure that the larger goals of the system and the leadership of the state are met in the execution of the project. We will apply our proven processes and strong project management framework to all IV&V deliverables, specifically with a structured, efficient, and repeatable approach to applying industry standards and best practices. This approach will guide our work and extend to all reviewed aspects of the effort, ensuring a strong project management framework is applied throughout the SOW. Our experience working on UI modernizations has shown that other controls, procedures, and best practices will not be effective without proper Project Management controls in place. PCG will assess the effectiveness of the project's governance framework, Steering Committee authority and sponsorship, and escalation channels to ensure that the project maintains momentum and that critical decisions are made efficiently and timely. We will assess the IV&V Critical Components identified for the UIS project and provide findings and recommendations to ensure that project information is shared with all stakeholders and that communication and messages are clear, consistent, and support the project objectives. PCG will ensure that the change control mechanism properly controls all items affecting the project scope, schedule, and/or cost**.** We will leverage industry standards to validate that all changes are reviewed and approved in advance, properly coordinated, and stakeholders are notified of approved changes.

PCG's Eclipse IV&V assessments ensure the proper level of oversight is applied to all programmatic areas and that DLIR is aware of **THE** project and technical status of all project functions. Our periodic assessment and status reports will ensure the State has full transparency and oversight into project management, development, implementation**,** and operations and that necessary project resources and inputs are available to the project team and Contractor(s) efficiently and timely.

Our efforts in reviewing the UIS project's performance are structured through DLIR's identified Critical Components, specifically:

Project Organization and Management
Contract Management
Requirements Management
Cost and Schedule Management
Systems Architecture and Design
Human Resources Management
Risk Management
Quality Management
Communications Management
Organizational Change Management
Knowledge Transfer
Operational Preparedness

To ensure that the Critical Components are performed at a high level, the PCG team will conduct an assessment using PMBOK standards to verify and validate that project processes, procedures, and activities are being conducted in accordance with industry standards and best practices. Our assessment will verify project management activities are consistent with the Project Management Plan and appropriate, given the project's complexity. We will work closely with DLIR to review and assess project management effectiveness and ensure that sponsors and stakeholders receive accurate and transparent information about the project. We will review all project status and progress reports against identified project metrics to gauge whether all critical project health measurements are documented and reported adequately. We will also assess and provide recommendations for task, issue, and decision tracking based on best practices that PCG has successfully employed on previous UI modernizations.

Benchmarks and Measurement

The more attention DLIR gives to risk management, the more likely the UIS project will stay on target toward achieving its scope, schedule, budget, and quality goals. PCG consultants are adept at recognizing project risks early in the project lifecycle, allowing our clients more time to develop effective risk response strategies.

PCG's certified IV&V consultants will help you recognize project risks in time to develop effective risk response strategies.

The Eclipse IV&V framework includes a structured methodology for identifying risks early in the project lifecycle, classifying them according to their potential impacts, and monitoring them through resolution or closure. The Eclipse IV&V training and certification program provides our IV&V consultants with a firm foundation in risk management principles and resources for developing evidence-based, relevant, and actionable recommendations.

What is a risk? What is a finding?

Eclipse IV&V defines a finding as a statement of fact that conveys a condition, the consequences of the condition, and the likelihood of the condition occurring. Findings fall into one of four categories:

Positive – A positive finding is an observation that benefits or contributes to the project's success. The IV&V team reports positive findings to acknowledge beneficial actions that the project should continue.

Preliminary Concern – A preliminary concern is an observation that requires more analysis and a better understanding of the subject matter before we classify it as a risk or issue. Preliminary concerns allow our clients to prepare a response strategy while the cost and effort to execute is low.

Risk – A risk is an uncertain event or condition that, should it occur, will have a negative effect on the project's scope, schedule, budget, and/or quality.

Issue – An issue is an event or condition currently impacting the project. Issues, by their nature, are negative. They are the result of unforeseen events or a triggered risk.

Risk Identification

When a PCG IV&V analyst reports a finding, they record supporting information such as a title, a brief description, supporting facts, and significance. The analyst adds the finding to the IV&V Findings Log and assigns it a unique number for tracking purposes. The finding then undergoes discussion and further analysis by the larger IV&V team. Team members work together to classify the risk and develop actionable recommendations based on best practices and PCG's collective experience on other projects of similar scope, size, and complexity.

Risk Classification

When the IV&V team identifies a risk or issue, they assign a risk exposure rating of High, Medium, or Low. To arrive at this rating, the team examines all available evidence to determine 1) the probability of the risk and 2) the magnitude of the impact should the risk occur. As noted in Figure 5, the intersection of Probability and Impact determines the risk exposure rating.

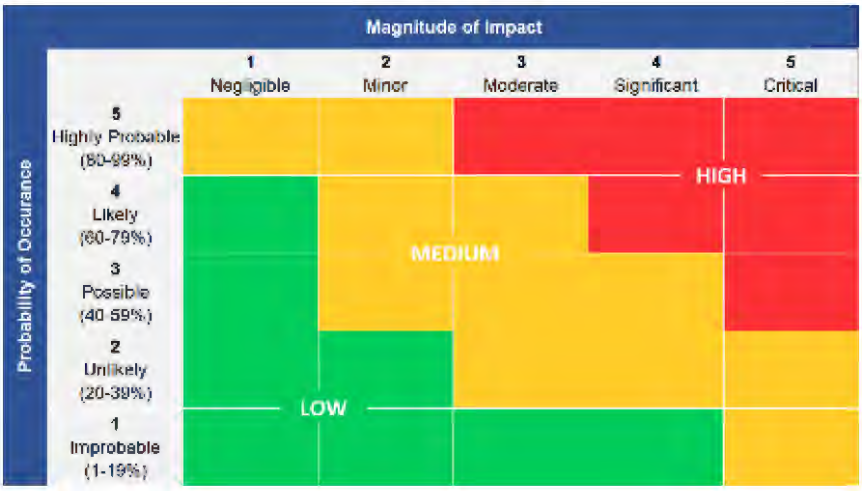

FIGURE 1. RISK EXPOSURE RATINGS ARE BASED ON PROBABILITY AND IMPACT

Risk exposure ratings help our clients determine whether to escalate a risk beyond the project team to the project steering committee or the project sponsor. It also helps them identify the risks and issues that warrant immediate action. For clarity, IV&V status reports include the risk exposure definitions below.

Risk Exposure Rating	Definition
LOW	This risk if triggered, would cause slight impact to scope, schedule, cost, or quality parameters of the project/program. Minimal disruption is likely, and therefore some oversight is needed to ensure that the risk rating does not increase. Mitigation strategies should be considered for implementation when possible.
MEDIUM	This risk if triggered, would most likely cause moderate impact to scope, schedule, cost, or quality parameters of the project/program, and therefore should be monitored closely. Some disruption is likely, and a different approach may be required. The risk response strategy should be leveraged as soon as feasible to control the risk and prevent it from increasing its rating.
HIGH	This risk if triggered, will have a significant impact to scope, schedule, cost, or quality parameters of the project/program. A major disruption is likely, and the consequences would be unacceptable. Detailed mitigation and remediation strategies should be evaluated and acted upon immediately, including completion of a risk contingency plan.

FIGURE 2. HI DLIR WILL KNOW WHICH RISKS WARRANT IMMEDIATE ATTENTION

The IV&V team also categorizes risks and issues based on which project dimension will be most impacted. For most projects, the risk categories include scope, schedule, budget, resources, and quality. Risks often impact multiple dimensions but placing them in one category highlights the project dimension with the highest risk exposure.

The Findings Management Life Cycle

PCG's detailed approach to managing risks and other IV&V findings from cradle to grave will keep DLIR informed of the UIS Modernization project's current status and what is likely to occur on the road ahead.

The Eclipse IV&V Findings Management life cycle is based on:

- IEEE Standard 1540, Software Life Cycle Processes – Risk Management
- Risk and issue management principles from ITIL and PMBOK
- Lessons learned from previous IV&V engagements

The PCG team reviews the IV&V Findings log monthly, noting any actions the project team took and any progress made toward resolving risks, issues, and other findings. Updates may include changing the probability or impact ratings or closing the finding altogether. Throughout a long project, frequent updates provide key insights into the effectiveness of the client's risk mitigation efforts and help project leadership determine whether to stay the course or change a risk response strategy.

PCG also understands the need to provide all services and deliverables in line with the State of Hawaii's technology governance framework. It will abide by state statutes, administrative directives, and all other State IT governance documentation, policies, standards, and guidelines on the ETS website.

The Eclipse IV&V Findings Management Life Cycle consists of the following steps/phases:

Identify Findings **–** Identify potential findings through documentation review, observation, tool analysis, interviews, and evaluation of project outputs/results. Enter project-level findings into the IV&V Findings Log. Enter more limited findings into the applicable IV&V checklist or assessment report.

Confirm Findings **–** Verify details and investigate standards; summarize analysis impacts and mitigation strategies; and conduct QA reviews on documented findings.

Communicate Findings **–** Review Risks and Issue findings with respective DLIR leads/owners before including them in a formal report; incorporate project-level findings in the IV&V Monthly Status Report

Monitor Findings **–** Track findings until realization or successful mitigation; tailor analysis and proposed mitigations throughout the project lifecycle.

Close Findings **–** When a finding is no longer accurate or presents a risk to the project, the IV&V team closes the finding and reports the closure date to the client. We sometimes replace a closed finding with a new one that more accurately describes the current condition or situation.

When communicating IV&V findings to DLIR, the IV&V project team will observe the following tenets:

No Surprises! Communicate early and often.

Review each finding with project leadership before including it in a formal report.

Discuss the supporting facts to make sure they are valid.

Limit technical jargon and acronyms – speak to the layperson audience.

Track and update IV&V findings regardless of whether the project accepts or rejects them.

Ensure the project knows what, when, how, and to whom we will formally report the findings.

The Enterprise Findings Log

To support the findings management process described above, PCG developed an Enterprise Findings Log (EFL) that aggregates the IV&V Findings Logs from all our IV&V projects into a single, easy-to-read, access findings repository. The EFL promotes communication and information sharing across IV&V project teams and is a valuable resource that helps them recognize common pitfalls and gather lessons learned from similar projects. By leveraging the EFL, PCG teams can maximize the value they provide to IV&V clients.

Anticipated Activities, Tasks, Reports and Briefings

PCG has four basic project management objectives that are the foundation of any sound project management methodology. This methodology will be used by PCG's IV&V Project Manager when providing IV&V services for DLIR. Our specific objectives are:

1. **High-Quality Work** – Deliver high-quality end products that address business objectives and meet end-user requirements.
2. **On-time Delivery** – Complete deliverables on schedule and within the budget.
3. **Effective Communication** – Provide timely and accurate communication to project participants and stakeholders throughout the entire project.
4. **Proactive Management** – Identify potential problems before they develop and initiate appropriate corrective action.

PCG's IV&V Project Management approach also follows universally accepted best practices. It is informed by hands-on, real-life, on-the-ground experience working diligently and successfully with state agencies on their most critical technology projects. PCG executes PMBOK principles with a keen understanding of the common issues, challenges, and dilemmas state institutions face in large system implementations.

APPENDIX B - PMBOK RECOMMENDED PROJECT PLANS

PMBOK Recommended Project Plans by Knowledge Area

PMBOK Knowledge Area	Recommended Plans from the PMBOK
Project Organization and Management	• Assumption Log • Project Management Plan • Schedule Baseline • Risk Report • Team Charter • Metrics and Key Performance Indicators (KPIs)
Project Scope Management	• Scope Management Plan • Requirements Management Plan • Requirements Documentation • Project Scope Statement • Scope Baseline
Project Cost Management	• Cost Management Plan • Cost baseline
Project Quality Management	• Quality Management Plan • Quality Metrics • Test and Evaluation Documents • Quality Control Measurements
Project Resource Management	• Resource Management Plan • Team Charter • Resource Requirements • Resource Breakdown Structure • Team Performance Assessments
Project Communications Management	• Project Communications
Project Risk Management	• Risk Management Plan • Risk Report
Project Procurement Management	• Procurement Management Plan • Procurement Strategy • Bid Documents • Procurement Statement of Work • Source Selection Criteria • Selected Sellers • Agreements • Closed Procurements
Project Stakeholder Management	• Change Requests • Stakeholder Engagement Plan
Systems Architecture, Design, Development and implementation (DDI)	• Implementation Strategy • Design Documents

PMBOK Knowledge Area	Recommended Plans from the PMBOK
Organizational Change management (OCM)	• Organizational Readiness Assessment (ORA) • Knowledge Transfer Strategy • Training Materials • Resistance Management Plan • Readiness Assessments • Pilot or Pilot Program Plans • Feedback Mechanism
Maintenance & Operations (M&O)	• Maintenance Plan • Support Documentation • Service Level Agreements (SLAs) • Backup and Recovery Procedures • Configuration Management Plan • Security Policies and Procedures • Training Material • Performance Reports • Compliance Documentation • Feedback and Improvement