DAVID Y. IGE
GOVERNOR

DEPT. COMM. NO. 117

DOUGLAS MURDDOCK
CHIEF INFORMATION
OFFICER

OFFICE OF ENTERPRISE TECHNOLOGY SERVICES

P.O. BOX 119, HONOLULU, HAWAIʻI 96810-0119
Ph: (808) 586-6000 | Fax: (808) 586-1922
ETS.HAWAII.GOV

December 3, 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 (IV&V) reports to the Legislature within ten days of receiving the report, please find attached the IV&V report the Office of Enterprise Technology Services received for the Hawaii Public Utilities Commission's Content and Document Management System Project.

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

Sincerely,

Douglas Murdock (Dec 9, 2021 10:26 HST)

DOUGLAS MURDOCK
Chief Information Officer
State of Hawaiʻi

Attachment (1)

Content and Document Management System (CDMS) Project

Hawaii Public Utilities Commission (PUC)

IV&V Initial Assessment

For Reporting Period: **July 2021**

Draft Submitted: 8/9/2021

Final Submitted: 8/26/21

PUBLIC CONSULTING GROUP

Solutions that Matter

Overview

- Executive Summary

- IV&V Scope and Approach

- IV&V Findings and Recommendations

- IV&V Preliminary Concerns

- IV&V Engagement Status

- Appendices
  - A – IV&V Criticality Ratings
  - B – IV&V Inputs
  - C – Upcoming IV&V Activities
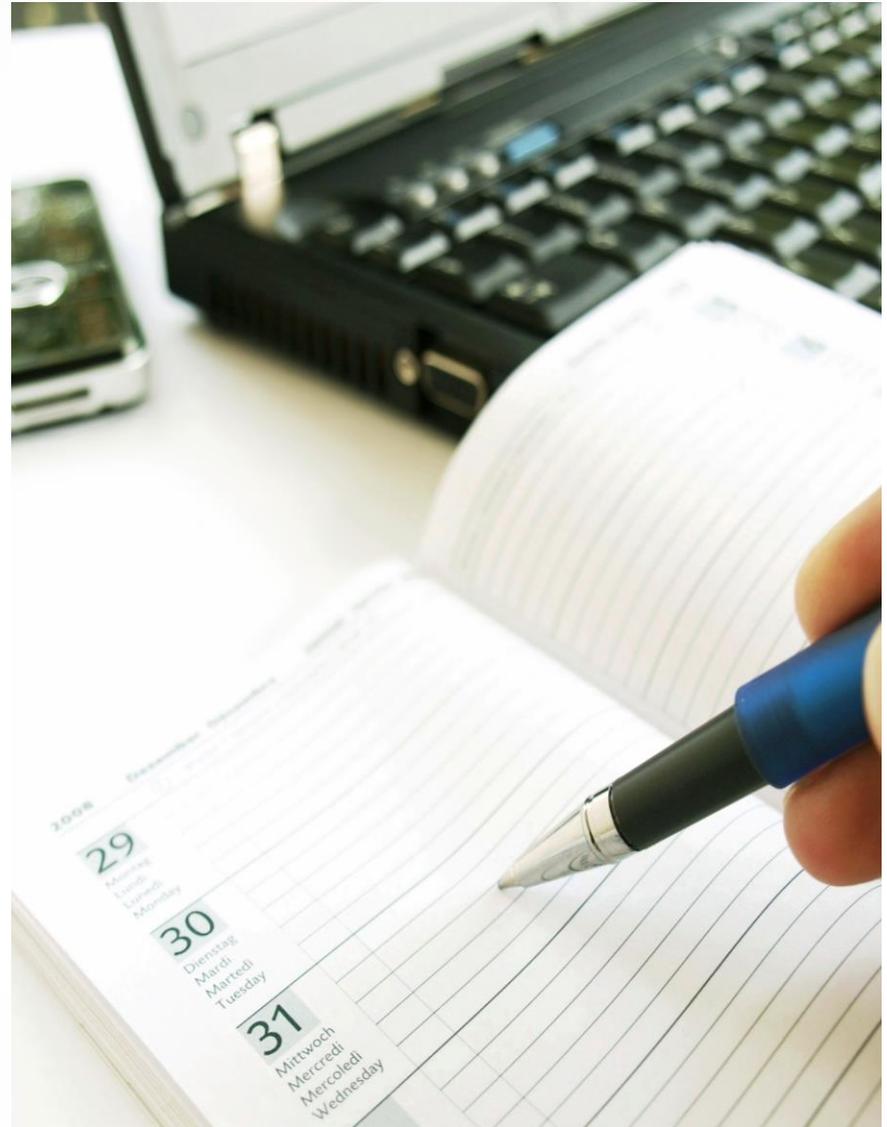
Executive Summary

PCG conducted an initial assessment during the first month of the project (July 2021) to identify any immediate observations. Only two areas required attention at the conclusion of the reporting period.

- Project Staffing: All key roles were not filled upon project initiation. Specifically, a Business Sponsor.
- Requirements Management: PUC has limited visibility into the requirements approach, progress and traceability.

IVV also identified some concerns that will be further researched and monitored. 1) Planned involvement of PUC staff during the development phase seems limited, and 2) the detail of submitted project management documents was limited in some areas.

After a high-level review of the proposed solution, there were no findings from a technical feasibility perspective. However, as IV&V continues to conduct our independent assessment, any concerns with the soundness of the solution will be communicated.

July '21	Category	IV&V Observations
L	Project Management	*IVV reviewed project roles and responsibilities and observed that upon project start-up, PUC had not filled one of the key roles – that of the Business Sponsor. This role provides the SI team with a go-to person for identifying PUC's business needs. Without this role, there is risk that business-related questions will not be answered timely, resulting in delays. At the end of this reporting period, this role was filled but had not been fully integrated and onboarded on the CDMS Project.* *On the positive side, the level of involvement of PUC staff in the CDMS kick-off meeting and the engagement of executive sponsors is laying a good foundation for project communication and change management.*
M	Requirements Management	*There is one risk and two observations regarding requirements management that are interrelated: 1) Notes for the workshop meetings are not provided to PUC immediately after the workshop. (risk), 2) A formal requirements management plan is not being developed on this project, which includes how requirements traceability is conducted. (observation), and 3) Two months for the Analysis/Design phase appears aggressive given the number of artifacts and deliverables involved. (observation)* *These three items together make it difficult to assess requirements development progress. Without visibility into work completed and how requirements are captured, incorporated and managed, there is risk that deliverables at the end of the Analysis/Design phase won't accurately reflect PUC needs resulting in schedule delays to resolve any deficiencies or, if PUC chooses to move forward, a system that may not achieve all of its business needs.*

Executive Summary (cont'd)

Open IV&V Findings by Category and Priority
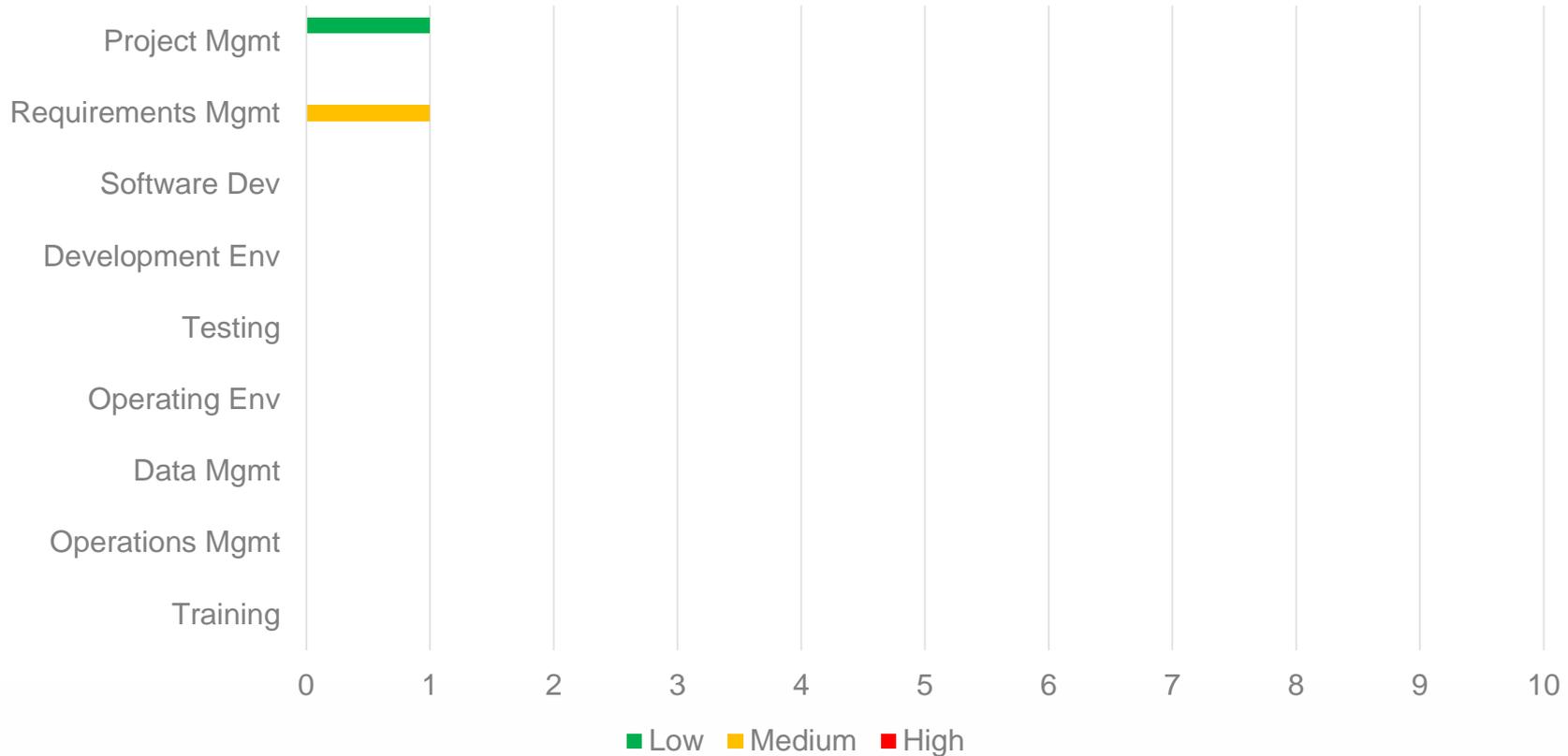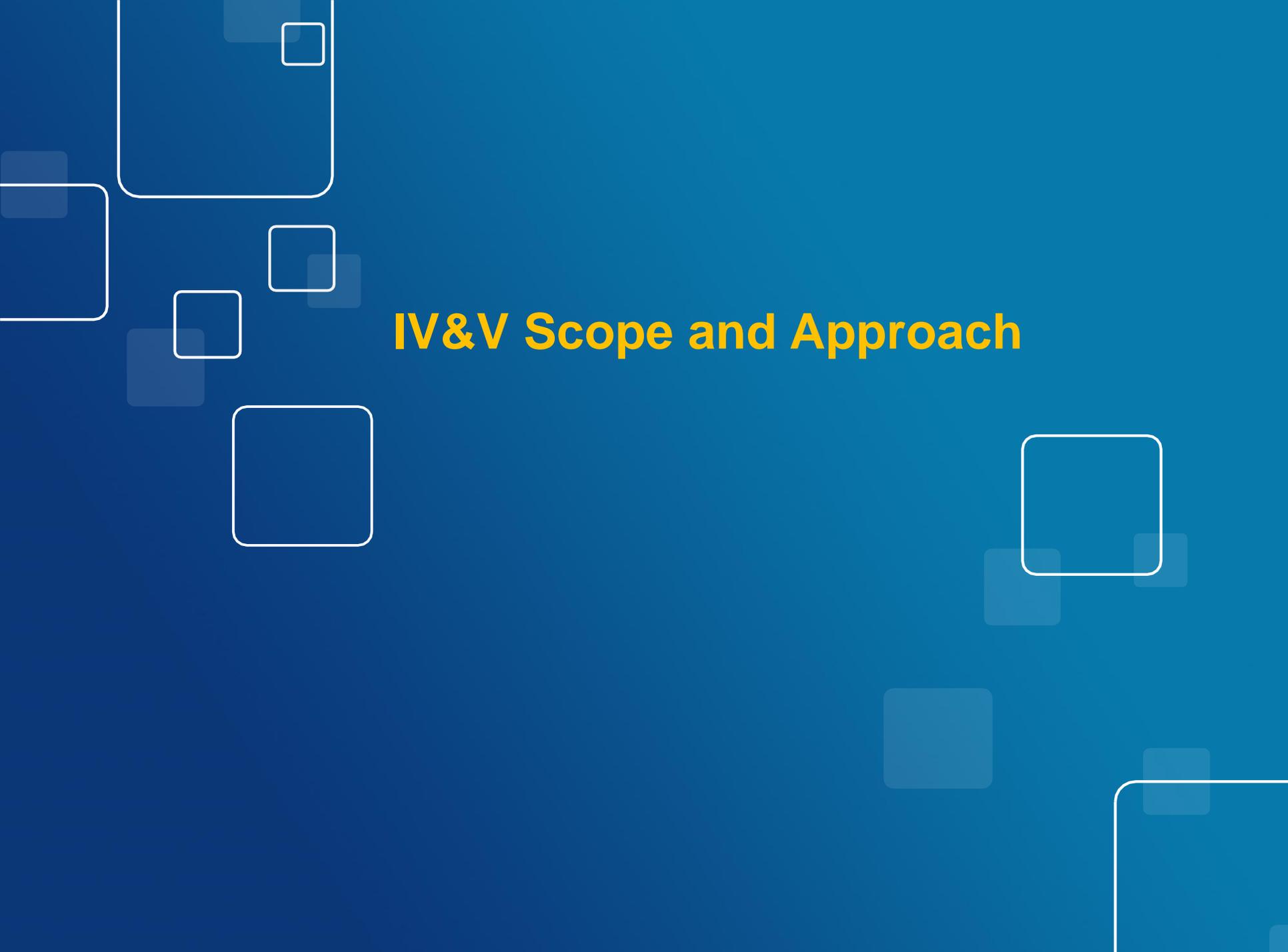
IV&V Scope and Approach

IV&V Scope

- For the initial assessment, PCG focused on the following project areas for the first month of the project.

  - Completeness of Plans
  - Schedule Realism
  - Soundness of Approach / Solution
  - Management / Project Team Structure

  - Tracking of Requirements
  - Project Metrics
  - Project Deliverables

- In accordance with PCG's contract for the CDMS Project at the PUC, the subject areas that are within the scope of IV&V activities include:

  - Project Management
  - Requirements Management
  - Software Development
  - Development environment
  - System and Acceptance Testing

  - Operating Environment
  - Data Management
  - Operations Oversight
  - Training

- As the CDMS IV&V project progresses, PCG's activities will focus on areas that represent highest risk to the Hawaii PUC.

IV&V Approach and Methodology

- 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.
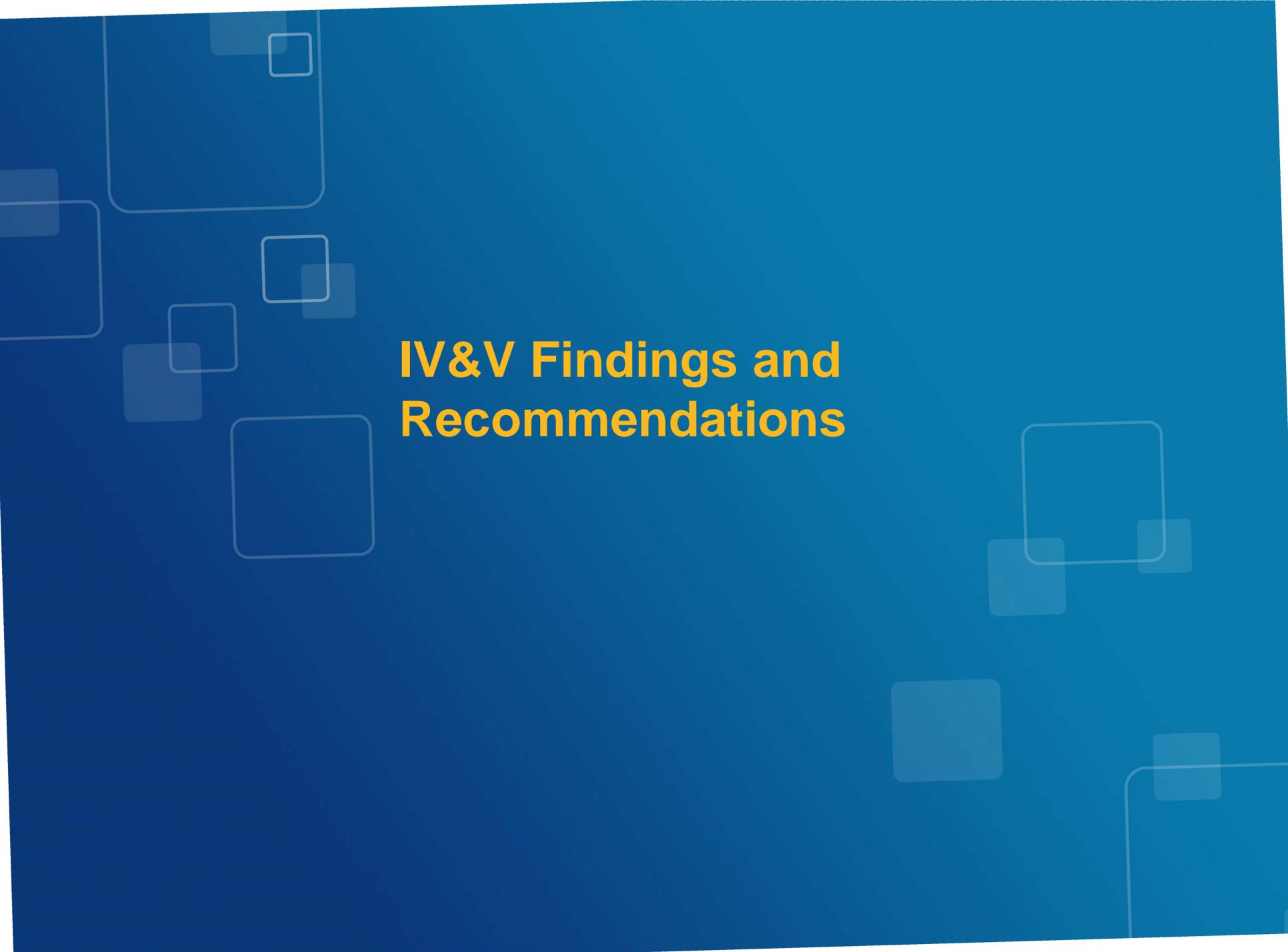
IV&V Findings and Recommendations

IV&V Findings and Recommendations

Positive Findings: Observations to acknowledge project adherence to standards, guidelines and/or best practices.

#	Positive Findings
7	**High kick-off meeting attendance**: The project kick-off attendance was high and it included many stakeholders. This is a good sign of overall involvement and helps facilitate organizational change management, increase solution quality, and promote project success.
10	**Strong executive sponsor engagement:** An active executive sponsor is important for project success and organizational change management as it communicates to the PUC staff the importance of the project which helps gain overall PUC system acceptance.
11	**Initial project success metrics from the Charter:** The Project Charter includes defined key benefits and metrics that can be used to track project success.

IV&V Findings and Recommendations

Risks: Events or conditions that may have a negative effect on a project's objectives.

Project Management

#	Risks	Criticality Rating
1	**Key project resources not originally identified:** A critical role identified in the System Integrator's (SI's) proposal is a Business Lead/Subject Matter Expert (SME). This role serves as the first point of escalation for business issues and risks, and business-related questions. Without this role questions may go unanswered longer than necessary causing schedule delays and may then result in a system that do not fully meet PUC's needs. PUC recently identified two resources to fill this role who have not been fully integrated into the project team. IV&V will monitor the integration of these positions in the coming reporting period.	L

Recommendations	Status
(Remediate) PUC and Pacific Point should provide the proper onboarding and ensure the Business Leads are current, clear on their expectations, and involved in the appropriate meetings.	New

IV&V Findings and Recommendations

Requirements Management

#	Risks	Criticality Rating
9	**Requirements Workshop notes are sent at the end of the two weeks of workshops, and not sooner:** Best practices suggest distributing meeting notes within a day or two of the meeting to obtain feedback from attendees. By waiting two weeks the attendees' ability to provide accurate feedback may decrease, resulting in possibly inaccurate business and technical requirements.	M

Recommendations	Status
(Mitigation) Compile/distribute notes in an organized manner to enable PUC staff to review effectively and efficiently as staff availability is limited.	New

IV&V Findings and Recommendations

Issues: Events or conditions that are currently negatively impacting the project.

#	Issues	Criticality Rating
n/a	*No issues identified during this reporting period.*	n/a
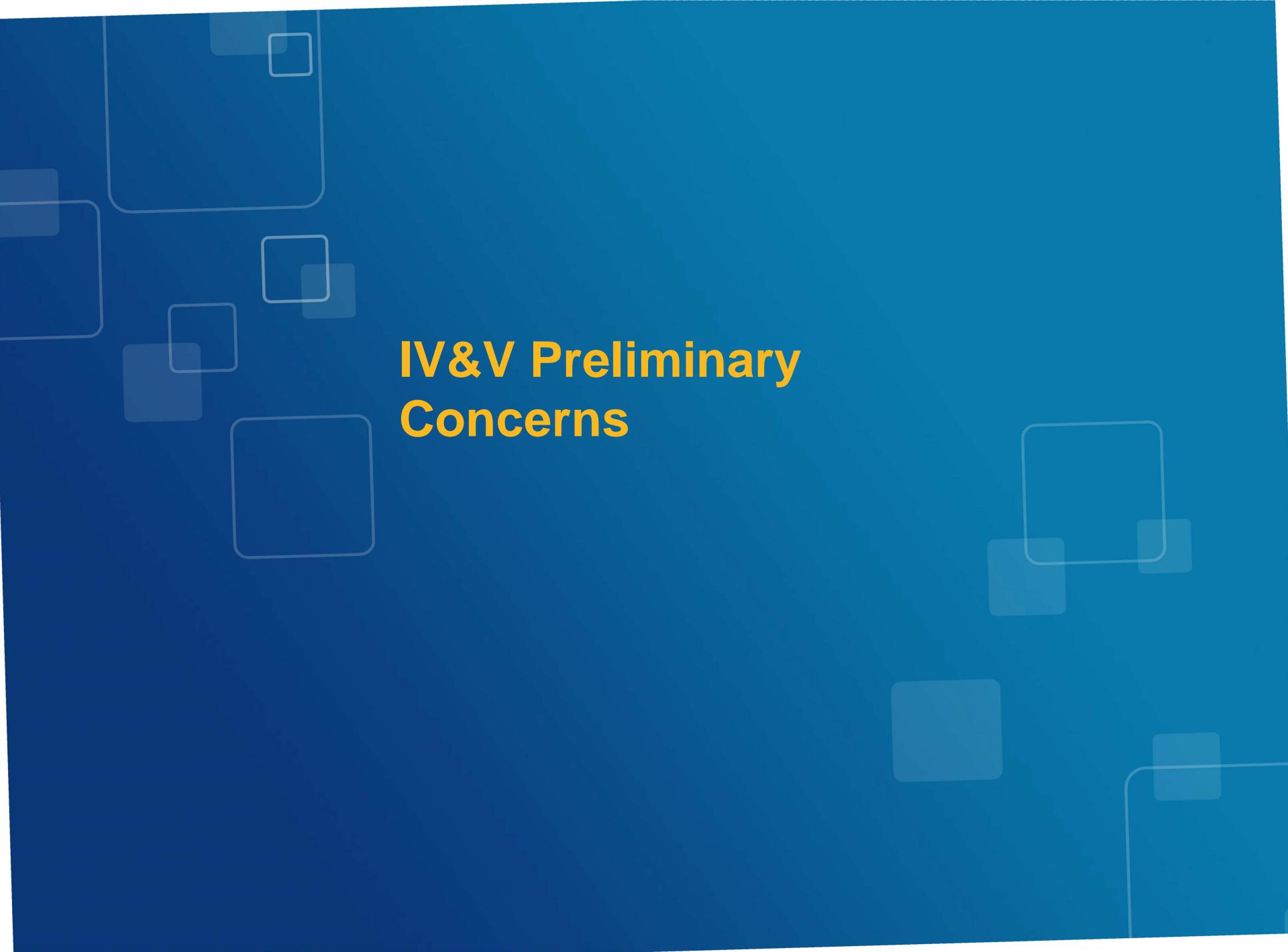
IV&V Preliminary Concerns

IV&V Preliminary Concerns

Preliminary Concerns: These are not findings, rather, these are items based on limited information at the time of reporting and require further discovery, research and clarification.

#	Preliminary Concern
2	**A formal Requirements Management Plan was not in the scope of the project deliverables:** Typically, a Requirements Management Plan is used to facilitate assessing the lifecycle processes that support identification, documentation, analysis, traceability, prioritization, communication and control of project requirements. Requirements traceability is a tool to track requirements to business needs and ensure that the solution will meet those business needs. Although IV&V will use other project artifacts and pose questions to the SI to help assess requirements management, a solid requirements management process is often key to meeting client expectations.
3	**Limited involvement of knowledgeable PUC SMEs during development sprints:** The schedule shows UAT occurring after all the development sprints with demos occurring iteratively at the end of each sprint. If the demos are not very robust, the risk here is that PUC resources who know what the system should do may not be able to provide early feedback resulting in rework and/or a system that does not fully meet the needs of PUC. Making system changes later in the project is less cost effective, and less efficient than making them earlier in the project.

IV&V Preliminary Concerns

#	Preliminary Concern
4	**The draft Integrated Change Management Plan has limited information:** Integrated change management is "the process of reviewing all change requests; approving changes and managing changes to deliverables, project documents, and the project management plan; and communicating the decisions." IV&V was unable to assess the Plan's completeness because the draft lacked details such as: An end-to-end process for approving or denying change requests; criteria by which a change will be examined, including impact analysis on schedule, scope, budget, quality and other factors pertinent to the success of the project and solution; stakeholder communication/decision making information (who makes the decisions and how are decisions communicated); information about the change control board or governance; and how are changes tracked.
6	**Two months to complete the analysis/design phase seems very aggressive:** After reviewing the number of required deliverables and observing workshop meetings during the week of 7/26/2021, two months seem very aggressive. If the two months is underestimated, coupled with the availability of PUC resources, this may result in extending the analysis phase, thereby delaying development, or deliverables that do not fully meet the needs of PUC which could be rejected, also causing schedule delays.
8	**The Risk Management Plan has limited information:** The submitted draft of the Risk Management Plan does not answer questions such as: What are the tools and processes for impact analysis? How will prioritization occur? How will risks be communicated outside of the regular Thursday meetings? At what point will escalation occur?

IV&V Engagement Status

IV&V Engagement Status

IV&V Engagement Area	July	Aug	Sept	Comments
IV&V Budget	🟢			
IV&V Schedule	🟢			
IV&V Deliverables	🟢			
IV&V Staffing	🟢			
IV&V Scope	🟢			

Engagement Status Legend		
🟢 The engagement area is within acceptable parameters.	🟡 The engagement area is somewhat outside acceptable parameters.	🔴 The engagement area poses a significant risk to the IV&V project quality and requires immediate attention.

Appendices

Appendix A – IV&V Criticality Ratings

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 evaluated and 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 Inputs

Meetings attended during the reporting period:	Artifacts reviewed during the reporting period:
1. PUC Pre Kickoff– 7/2/2021	1. HPUC & Pacific Point Inc. Contract for SI of a CDMS
2. Org Change Management #2 – 7/14/2021	2. PM 1.1 Project Management Plan
3. Project Plan Review – 7/16/2021	3. PM 1.1.1 Risk & Issue Management Plan
4. All Hands CDMS Kick-off	4. PM 1.1.2 Risk Issue and Decisions Log
5. Workshops - 7/26/2021	5. PM 1.1.3 Integrated Change Management Plan
6. Workshops - 7/28/2021	6. PM1.1.5 Finalized Project Org Chart
7. Workshops - 7/29/2021	7. PM 1.1.6 Baseline Project Schedule
8. Data conversion – 7/30/2021	
Standing: Bi-weekly risk meetings	
Standing: Weekly IVV check-in meetings	
Standing: Weekly project status meetings	
Standing: Daily standups as needed	

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

- **Attends the project meetings**
- **Reviews the project documentation**
- **Utilizes Eclipse IV&V® Base Standards and Checklists**

Appendix C – Upcoming IV&V Activities

Meetings anticipated for the upcoming reporting period:	Artifacts anticipated for review during the upcoming reporting period:
1. Additional business process and requirements workshops	1. Draft Future State Process Flows
2. Requirements management discussion	2. Final project management plans
3. Sprint demo and stakeholder involvement discussion	3. Updated DED's
Standing: Bi-weekly risk meetings	
Standing: Weekly IVV check-in meetings	
Standing: Weekly project status meetings	
Standing: Daily standups as needed	