STATE OF RHODE ISLAND UNIFIED INFRASTRUCTURE PROJECT

MONTHLY IV&V ASSESSMENT
APRIL 2016

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Amendment History

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1.0	05/26/2016	William Riippi	Initial Release, Submitted onto CALT

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1. OVERVIEW

1.1 Purpose

The purpose of this report is to provide the Independent Verification and Validation (IV&V) Monthly Assessment for the Rhode Island Unified Health Infrastructure Project (RI UHIP). CSG Government Solution's (CSG) IV&V services provide an independent perspective of project activities, plans, and processes to identify risks and make actionable recommendations on how those risks can be addressed or planned for and managed.

This Monthly IV&V Assessment is an end of the month assessment and establishes a baseline for ongoing monthly assessments. This assessment provides a snapshot of project health, observations, and actionable recommendations to address risks identified during the month.

The CSG IV&V team analyzed the governance practices, current activities, processes, procedures, project documents, completed deliverables, and other project artifacts, as well as conducted interviews with some of Deloitte's team members and observed project meetings. This document contains information collected from April 1, 2016 through April 30, 2016.

The Monthly IV&V Assessment for the RI UHIP is expected to provide the following benefits:

➢ A high-level management review of the RI UHIP processes and product risk

➢ Early identification, planning, and resolution of risks and issues

➢ Increased likelihood of project success

➢ Increased overall project quality

1.2 Background

The RI UHIP was launched on January 22, 2013. The goals of the RI UHIP focused on implementing an Affordable Care Act (ACA)-compliant health insurance marketplace and an integrated eligibility system solution via two phases.

➢ **Phase 1:** Implemented a fully compliant ACA health insurance marketplace by October 1, 2013. Phase 1 officially ended after the implementation of Enhancement Release 6.6 on February 1, 2016.

➢ **Phase 2:** Implement an integrated eligibility system that includes programs such as TANF, SNAP, and other human services programs in July 2016.

CSG has been engaged to provide IV&V services to the RI UHIP. The CSG approach to IV&V for the RI UHIP is tailored to meet the specific requirements of this project. Currently, the RI UHIP is in Phase 2.

2. PROJECT HEALTH DASHBOARD: APRIL 2016

Below is a summary Dashboard of the RI UHIP as of April 30, 2016. Overall, Release 7 Risk is trending High Risk due to a growing number of key observations that can impact Go-Live. Continue to expedite corrective actions with a focus on key activities and functionality critical to Go-Live, as well as development of contingency plans as required. See Section 4.3 for supporting detailed observations and recommendations.

Table 1 – Project Health Dashboard

Rhode Island Unified Health Infrastructure Project Phase 2 – Release 7 PROJECT STATUS INDICATORS											
SCOPE			COST			SCHEDULE/RESOURCES			QUALITY		
Previous	Current	Trend	Previous	Current	Trend	Previous	Current	Trend	Previous	Current	Trend
Moderate	Moderate	-	Low	Moderate	-	High	High	NA	Moderate	High	-

3. KEY OBSERVATIONS AND RECOMMENDATIONS

Key observations and recommendations identify those areas that need immediate attention and focus to improve or maintain the health of the project. The following sections summarize our observations and recommendations for those categories that received a status of high risk and some key observations and recommendations for categories that received a status of medium risk during this assessment period.

The detailed observations in Section 4.3, for which the risk rank is rated as high risk or medium risk, should be carefully reviewed and risk response strategies and plans developed. For those observations rated with a low or none risk rank, the State should continue to monitor these areas to ensure controls and processes remain effective.

The key observations and key recommendations are divided into the following Risk Assessment Areas of Focus from the Project Health Dashboard:

➢ Scope – Are project activities properly defined and managed throughout UHIP?

➢ Cost – Are budget/funding requirements defined and managed?

➢ Schedule/Resources – Is the schedule defined, managed, and properly resourced?

➢ Quality – Are quality processes (System Development Life Cycles and Project Management Processes) defined and followed resulting in quality deliverables?

3.1 Scope

The scope category measures progress against requirements to ensure existing requirements are delivered and new or changed requirements are addressed. Change Control impacting the project's schedule, resources requirements, and budget are considered.

3.1.1 Progress Since Last Report

Since the last reporting period, the project scope trend has remained constant. **Phase 2 scope is a moderate risk, but trending high** due to a growing number of related observations and risks that can impact Go-Live. Consider corrective action or monitor previous corrective action.

3.1.2 Observations and Recommendations

➢ **CMS Mandated Deliverables Required for Go–Live**

   ✓ **Observation**

      • CMS requires the State to update and submit documents, per mutual agreement, from the Information Technology Enterprise Life Cycle (IT ELC) document.

   ✓ **Recommendation**

      • The State should complete all required documents and upload them in CALT for CMS review prior to the Go-Live.

➢ **Several Interfaces not Initially Identified**

   ✓ **Observation**

      • Deloitte and Northrup Grumman conducted an interface reconciliation to determine what interfaces were not initially identified. 21 data interfaces were identified as of

5/16/2016 (less than the 156 initially considered). The final list from the reconciliation will be determined after State/DHS review. There is a high risk all data interfaces will not be complete by Go-live.

- ✓ **Recommendation**

  - The reconciliation process should involve all the agencies. The State should require Deloitte accelerate the development and testing process so they can be tested in UAT. An acceptable work around should be established for any interfaces determined not required for the initial Go-Live.

➢ **Privacy and Procedures Readiness for Authority To Connect (ATC)**

- ✓ **Observation**

  - There are eight more Privacy Control Families added in MARS-E 2.0 in addition to existing MARS-E 1.0 policies. The MARS-E 1.0 policies and procedures must be confirmed to be in place prior to go-live or the Go-Live schedule could be impacted. Policies and procedures based on MARS-E 2.0 must be confirmed for Authority to Connect (ATC) by 8/1/16.

- ✓ **Recommendation**

  - State should expedite the process to create and/or complete the privacy and other policies based on both MARS-E 1.0, 2.0. If not completed on time could impact the ATC. Any concerns pertaining to the policies should be brought to CMS and State leadership attention.

3.2 Cost

The cost category measures progress against approved and planned budget allocations.

3.2.1 Progress Since Last Report

Since the last reporting period, the project cost trend improved. **Phase 2 cost is a moderate risk** due to potential cost increases resulting from observation impacts and risk mitigation. Consider corrective action to mitigate risk.

3.2.2 Observations and Recommendations

➢ **Potential Increase in Project Expenditures**

- ✓ **Observation**

  - Project expenditures are at risk to increase if a number of the observations that have been identified to impact the project schedule, resources, quality and scope are realized. Mitigation factors being considered may also result in increased costs. Selected events and observations that raise this concern include:

    o Completion of UAT on schedule to support Go-Live is at risk.

    o Approximately 50% of the initially identified interfaces are behind schedule and considered High Risk as of 4/15/2016.

    o The Release 7 development schedule was previously revised and any further extension will significantly increase the risk to meet the Go-Live date. Mitigation being considered is to delay selected functionality into September.

To the IV&V Team's knowledge, there are no CRs pending that substantially impact the budget as this time. However, the CRs that may result from extending the schedule, adding resources, and adding scope to mitigate delays are likely to result in significant increased expenditures.

✓ **Recommendation**

- The State should develop potential scenarios that may be required to mitigate delays and estimate resulting expenditures. Evaluate the current project budget and make plans for potential variance. If funding is not currently available, plans for additional funds should be considered.

3.3 Schedule/Resources

The schedule/resources category measures the quality and validity of the project schedule. It also measures progress against a valid, baselined work plan and verifies the project team is meeting the timeframes documented within that plan.

3.3.1 Progress Since Last Report

Since the last reporting period, the project schedule and resources have remained constant. **Phase 2 schedule and resources are a high risk** due to added observations and risks related to schedule impacts and resource availability that can impact Go-Live. Consider corrective actions with a focus on key activities and functionality critical to Go-Live.

3.3.2 Observations and Recommendations

➢ **Interfaces**

✓ **Observation**

- The Interface development and testing are significantly behind schedule and considered a High Risk as of 4/15/16. 15 of the 30 interfaces initially identified as required are not on schedule. An additional 30 interfaces were not identified in the initial planning. It was confirmed last week that 20 of the 30 interfaces are required and the others are still being evaluated. The failure to implement required interfaces may significantly impact the overall operations and functional productivity if not ready by Go-Live date.

✓ **Recommendation**

- The Required Interfaces need to be developed and a plan is required to get on track so that all interfaces can be successfully tested in UAT and Pilot. Weekly meetings should be scheduled with the trading partners to review interfaces currently identified as being off track. Recommend immediate work-arounds be developed if critical interfaces are not available for Go-Live.

➢ **Release 7 Code Merge Schedule/Plan Revised**

✓ **Observation**

- Deloitte is adding two code merges (one on 4/15 and one on 6/15) to the four initially planned (2/1, 4/1, 5/1, and 6/1). The added code merges may extend UAT and limit the time for defect resolution, thus potentially delaying UAT exit and jeopardizing the project Go-Live schedule.

✓ **Recommendation**

- The State should require Deloitte to provide clarification on the specific functionality to be included in each code merge. This information needs to be shared with UAT to support planning for test cases and resource needs. Deloitte should have a plan to expedite defect resolution to support UAT efforts and allow for timely UAT exit.

➢ **Interfaces- Department of Health and Corrections**

  ✓ **Observation**

  - The development of the DOH and DOC interfaces have not been started for the Phase 2/IES system. Deloitte does not consider these interfaces as a part of the original requirements for the Phase 2/IES system. These interfaces are required to be operational in system to support Go-Live and allow customer eligibility information, including birth, death and incarceration data to be exchanged.

  ✓ **Recommendation**

  - The State and Deloitte should make an agreement that allows for development of these interfaces to begin within a schedule that enables their completion and testing to support Go-Live. To expedite discussions, the State and Deloitte should consider the original UHIP requirement traceability matrix that includes the interfaces as part of the HIX/IE scope.

➢ **Limited Production Window to Complete Final Conversion**

  ✓ **Observation**

  - Mock Conversion prior to Go-Live is scheduled to be completed in 6 days. However, the production window timeframe for the final conversion is scheduled to be completed in 3 days. The timeline and number of days allocated to complete the final conversion appears to be at high risk and the Go-Live schedule may be impacted.

  ✓ **Recommendation**

  - The State and Deloitte should plan to add a buffer period of time for the production conversion. If required, add CPU and RAM for the conversion. State should require Deloitte to finalize the infrastructure/ environment capacity topology. Additionally, the mitigation plan should be developed in conjunction with all the agencies.

➢ **Risk of Completing UAT On Time**

  ✓ **Observation**

  - Deloitte is providing defect fixes and/or placing defects in a ready for test status at a pace that is not able to be met by UAT. With the number of test scripts and the limited number of resources, retesting the defects and verifying the validity of the fix is not possible without further putting the schedule of new case execution at risk.

  ✓ **Recommendation**

  - The State should consider adding staff to focus on the retest efforts. This could minimize the impact of pushing actual execution off track. The State should ensure the same testers and quantity of testers are consistently provided. This risk was escalated to the State and DHS has provided testers and is continuing to provide additional testers to support UAT testing efforts. A daily attendance sheet is being maintained to track the number of testers and scripters at UAT.

3.4   Quality

The quality category measures compliance with design including defect levels identified during testing, production defect identification, and the ability to quickly resolve quality issues. It also serves to evaluate the adherence to project management processes outlined within the project management plan, system development life cycle processes, and via the quality of all deliverables.

3.4.1   Progress Since Last Report

Since the last reporting period, the project quality for **Phase 2 quality has been escalated to high risk** due to a growing number of observations and risks that can impact Go-Live. Consider corrective actions to monitor and continuously improve quality.

3.4.2   Observations and Recommendations

➢ **Performance Testing for Release 7**

  ✓ **Observation**

  • Deloitte has initiated Release 7 performance testing without the submission and approval of a performance-testing plan. The scope, including batch testing from the technology perspective, has not been finalized. Performance environment has not been set-up to date.

  ✓ **Recommendation**

  • The batches should be tested/examined utilizing a database identical in size to Production in order to gauge performance and evaluate its efficiency and stability. The plan should be reviewed and approved by the State before the results are validated. Performance tests scheduled for April, May and June to reevaluate the production capacity should be consistently monitored.

➢ **Conversion – Data Conflicts**

  ✓ **Observation**

  • A significant number of data conflicts has been found in client records during the InRhodes and RIBridges data conversion. Resolution of the conflicts may require manual efforts and is required prior to go-live. The exact plan for resolving the conflicts is still in work and the decision could impact the overall schedule.

  ✓ **Recommendation**

  • A plan should be developed that includes a timely approach to fix these conflicts prior to go-live. If the approach includes manual intervention, acceptable resource plans should be included. Mitigation plans should be considered due to the risk of individuals who may be eligible for benefits being denied due to incorrect data conversion.

➢ **Deliverables are Not Being Maintained**

  ✓ **Observation**

  • Existing planned deliverables are not updated and revised to reflect that system and environment changes associated with the single database design.

  ✓ **Recommendation**

- Technical deliverables should be updated prior to go-live for CMS review.

➢ **MMIS Testing is insufficient and has not been executed end-to-end**

- **Observation**
  - Test cases were written by DHS and do not provide the level of detail needed to generate the correct transactions. Testing done thus far in UAT only tested the 1A and 1B transactions. Testing has not been executed to efficiently test the cases from end-to-end.

- ✓ **Recommendation**
  - It is recommended that EOHHS write test cases that can be fully executed with HP to ensure true end-to-end results by testing all transactions. This may require test cases to be written in more detail.

➢ **Security - User Role and Permission Matrix**

- ✓ **Observation**
  - The single database approach consolidated the HIX/IE permission matrix. This allows for the management of all user roles and the permission matrix within IES/RIBridges. Significant testing is required to assure that each user has access to their authorized screens. Failure to correctly authenticate and authorize each user could result in a security incident post. In addition, it may lead to permission issues with the application approaching Go-Live.

- ✓ **Recommendation**
  - Require Deloitte to provide the SIT scripts, with the results, to validate appropriate end-to-end user role-based testing. Require the execution of the appropriately documented test plan and UAT scripts and during UAT and the pilot. Require each Agency to assure the successful testing and verification of all the roles per their business rules before Go-Live.

➢ **Cycle 4 UAT to Begin with Open Critical and High Defects from Cycle 3**

- ✓ **Observation**
  - Cycle 4 UAT is responsible for testing 72 defects that were not resolved in Cycle 3 UAT and 430 scripts from previous UAT cycles that were not completed. The additional testing and defect resolution must be added to the Cycle 4 work plan and it increases the risk of schedule delays and the need for additional UAT resources.

- ✓ **Recommendation**
  - The State should ensure resources are made available to support additional testing and that Deloitte expedites fixes of defects identified for timely retest in UAT. An observation regarding Schedule/Resources is also open to address this risk.

➢ **Safeguarding Sensitive Personally Identifiable Information (PII) During Testing**

- ✓ **Observation**
  - PII information was included in a screen print as part of the problem description entered in the defect management tool (JIRA) with the active username and passwords for supporting Mock Pilot activities. Disclosing PII in such a manner is against the security guidelines set up by federal partners.

- ✓ **Recommendation**

  - The State should require security controls compliant and guidance with NIST and CMS/MARS-E 2.0 are put in place to ensure adequate accessing and handling of PII while testing or debugging work requests. Ensure appropriate HIPAA training is provided to the implementation/testing group before accessing the production data.

➤ **Mock 3 Pilot Defect Management**

- ✓ **Observation**

  - Defect tickets are being closed/cancelled without a defined resolution. The majority of defects (estimated 95%) have been closed/cancelled/deferred without the appropriate acknowledgment by the State (e.g. note or comments the tester on the resolution to justify closure) being entered on the Mock Pilot 3 Work Request dashboard. Closing or cancelling defects without State's acknowledgement could result in inaccurate tracking and resolution of defects.

- ✓ **Recommendation**

  - Observation was submitted and discussed with the State. The State has asked Deloitte to assign all the defects to State Pilot Lead for the closure to make sure defect is re-tested successfully.

➤ **System Resource Allocations**

- ✓ **Observation**

  - The production topology has not been finalized. Based on the draft production topology, more application servers, Mule Enterprise Service Bus (ESB) servers, application servers, etc. have been added. Performance testing which is entirely based on the finalized design is delayed.

- ✓ **Recommendation**

  - The State should require Deloitte to finalize the infrastructure topology. The capacity plan should be updated and published to the State. All required VMs for performance testing environment should be immediately created for the Release 7 performance/load test.

➤ **Replication of Production Data at Disaster Recovery Site**

- ✓ **Observation**

  - The plan and schedule for production data replication at the Go-Live disaster recovery site is not finalized. There is a limited time to replicate the data at the site and the current process, taking up to 7 days, is too long.

- ✓ **Recommendation**

  - The State should require Deloitte to provide a plan with details for the go-live data replication approach, process and schedule. This should include a plan for verifying the data replicated is consistent with the source data.

4. DETAILED MONTHLY IV&V ASSESSMENT

4.1 Approach

The CSG IV&V team's approach to the Monthly IV&V Assessment is to assess the RI UHIP to understand the environment, project goals and objectives, and the critical project success factors so project risks and actionable recommendations are documented. In areas of the assessment where the project has minimal activity (due to the current phase of the project), we offer proactive advice where appropriate. For items in which we gain early insight, the team has taken an approach to err on the side of caution and to raise any perceived risk in this Monthly IV&V Assessment. This enables those risks to be reviewed and addressed in a timely manner, if needed.

All information received by April 30, 2016 is included in this report. Information received after this date will be included in the next monthly assessment scheduled for May 2016. The Monthly IV&V Assessment documents current observations and recommendations and establishes the baseline for future Monthly IV&V Assessments.

4.1.1 Interviews

The IV&V team schedules interviews with key personnel. Follow up interviews are conducted as needed so that the IV&V team maintains a complete understanding of the project risks.

4.1.2 Project Meetings

IV&V team members attend project meetings and review formal meeting minutes produced from these meetings to ensure that summaries are complete and accurate and all decisions, action items, risks, and issues are appropriately noted. Observing project meetings enables the IV&V team to maintain a full understanding of project processes, current activities, and status and to gain additional insight and understanding of project risks.

4.1.3 Document Review

Formal deliverable reviews are a fundamental validation activity provided by the IV&V team. For each deliverable, the IV&V team conducts a review that is tailored to the subject matter presented. Since the content and purpose of each deliverable varies, the type of review also varies. The IV&V team uses the appropriate industry standards and guidelines in the review of the deliverables. In some cases, the standard may have been specified via contractual documents, while in other cases it may be a best practice for the specific subject matter. In any event, prior to its review, we determine what standards are applicable to the deliverable and whether or not compliance is required. For every deliverable, we verify its correctness, accuracy, completeness, and readability. We also participate in a walkthrough of the deliverable, as appropriate. This walkthrough allows the IV&V team to become familiar with the deliverable and ask specific questions about the deliverable's content.

For subsequent resubmission of DDI vendor deliverables, the IV&V team conducts a review and provides the UHIP stakeholders with a relevant observation of the changes found between the last and most current submission of the deliverable. Any relevant observations are logged in the TeamCSG™ tool and then reported in the next Weekly Status Report.

4.2   Tools

4.2.1   *TeamCSG℠ Tracker:* Risk Assessment Model

TeamCSG℠ Tracker: **Risk Assessment Model guides the IV&V team through identifying and evaluating the type and level of risk (low, medium, high) a project may encounter.** This allows for a snapshot of level of risk in the project. The risk level helps the RI UHIP and vendor project teams focus their efforts on planning for and responding to key risk areas. The Risk Assessment Model encompasses industry standards for project management and system engineering, such as PMBOK and IEEE standards.

The Risk Assessment Model is used to prioritize and assess the impact of items according to business functions and specific risks. These risk assessment items can be tracked from one review period to the next to determine increasing or decreasing risk levels and project health, not only at an item level but also within a category or subcategory.

The Risk Assessment Model is broken down into three major risk domains: 1) Project Management, 2) IT (information technology) Infrastructure, and 3) SDLC - System Development Life Cycle.

4.3   Detailed Observations and Recommendations

Below is a detailed listing of the observations and recommendations completed by the CSG IV&V team. The table is developed from the information captured in the *TeamCSG℠ Risk Assessment Tracking* tool and *TeamCSG℠ Risk Assessment Model* categories for reporting, tracking, and follow-up. The CSG IV&V team migrated from a legacy observation tracking tool to the *TeamCSG℠ Risk Assessment Tracking* tool in February 2016. Numbers referenced within the title of an observation, under the Title column, denote the original ID assigned by the legacy observation tracking tool.

Table 2 – New Observations and Recommendations

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
173	Gloria Darby	Testing	Quality	MMIS Testing is insufficient and has not been executed end-to-end	MMIS Testing is insufficient and has not been executed end-to-end. Test cases were written by DHS and do not provide the level of detail needed to generate the correct transactions. Testing done thus far in UAT only tested the 1A and 1B transactions. Testing has not been executed to efficiently test the cases from end-to-end. The same test case was used multiple times preventing a true and accurate transaction from going downstream to HPE. The majority of transactions HPE has received thus far have not been part of a specific end-to-end scenarios.	It is recommended that EOHHS write test cases that can be fully executed with HP to ensure true end-to-end results by testing all transactions. This may require test cases to be written in more detail.	High
174	Gloria Darby	Testing	Quality	Cycle 4 FDDs Impacted by Code Merge	Deloitte has not been able to identify the consolidated list of what FDDs will require updates as a part of the code merge process. Phase 1 functionality being merged into Phase 2 has not been documented or provided to the UAT support team to facilitate script writing. Not having accurate and current FDDs poses the risk that some cases will not reflect exactly what the tester will see during testing.	The State should require Deloitte to update all FDDs based on changes necessitated by the code merge. Phase 1 functionality being merged into Phase 2 should be documented in the appropriate FDDs, the State along with the vendors contracted to write test cases should be provided with a list of what deliverables will be updated.	High
182	Gloria Darby	Testing	Schedule/ Resource	Risk of Completing UAT On Time	Deloitte is providing defect fixes and/or placing defects in a ready for test status at a pace that is not able to be met by UAT. With the number of test scripts and the limited number of resources, retesting the defects and verifying the validity of the fix is not possible without further putting the schedule of new case execution at risk.	The State should consider adding additional staff to solely focus on the retest efforts, this could minimize the impact of pushing actual execution off track.	**High**
180	Gloria Darby	Testing	Quality	Cycle 4 UAT to Begin with Open Critical and High Defects from Cycle 3	Due to the delay in exiting UAT for Cycle 3, Cycle 4 UAT will begin with open critical and high defects remaining from Cycle 3. Although these defects are expected to be addressed during the first few days of Cycle 4, both UAT cycles will be running in parallel for a period of time.	State should ensure Deloitte continues to address the critical and high defects so they can be retested in UAT.	**High**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
181	Bobby Malhotra	Technical	Schedule/ Resource	Limited Production Window to Complete Final Conversion	Mock Conversion prior to Go-Live is scheduled to be completed in 6 days. However, the production window timeframe for the final conversion is scheduled to be completed in 3 days. The timeline and number of days allocated to complete the final conversion appears to be at high risk and the Go-Live schedule may be impacted. There will be minimal time to fix or address any issues during conversion within this limited timeframe.	The State and Deloitte should plan to add a buffer period of time for the production conversion. If required, add CPU and RAM for the conversion. State should require Deloitte to finalize the infrastructure/environment capacity topology. Additionally, the mitigation plan should be developed in conjunction with all the agencies.	**High**
183	Bobby Malhotra	Testing	Quality	Safeguarding Sensitive Personally Identifiable Information (PII) During Testing	PII information was included in a screen print as part of the problem description entered in the defect management tool (JIRA) with the active username and passwords for supporting Mock Pilot activities. Deloitte USI/Offshore is accessing JIRA and has access to the PII data while fixing and/or addressing the defect/ticket logged during Pilot. Disclosing PII in such a manner is against the security guidelines set up by federal partners. Lost or compromised PII could result in substantial harm to an individual.	Use of production data used in Mock Pilot #3 and for other M&O testing activities, as well as potentially offshore for support, should be mutually agreed upon between State and Deloitte. Security controls compliant and guidance with NIST and CMS/MARSE 2.0 should be put in place to ensure adequate accessing and handling of PII while testing or debugging work requests. Ensure appropriate HIPPA training is provided to the implementation/testing group before accessing the production data.	**High**
185	Bobby Malhotra	Technical	Scope	Several Interface Gaps Identified	Deloitte conducted the interfaces reconciliation with the State to determine if there are any gaps, or any existing interfaces, that have been missed during initial period of the project. To date, significant number of gaps have been identified. There is a high risk pertaining to such interfaces, as most of them identified during reconciliation will not be ready by Go-live.	The reconciliation process should be completed at earliest possible to determine the interface gaps, involvement of all the agencies is critical. The State should require Deloitte to compile the list of gaps and accelerate the development, testing process so it can be successfully tested in UAT before deploying in production.	**High**
184	Bobby Malhotra	Technical	Scope	Privacy and Procedures Readiness for Authority To Connect (ATC)	There are eight more Privacy Control Families added in MARS-E 2.0 on top existing MARS-E 1.0 policies. Existing, all, the policies based on MARS-E 1.0 have also not been completed and signed off by the State, to date.	State should expedite the process to create and/or complete the privacy and other policies based on both MARS-E 1.0, 2.0. If not completed on time could impact the ATC. Any concerns pertaining	**Medium**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					Policies and Procedures based on MARS-E 1.0 if not signed and in place prior to go-live will result in a finding in POAM and also further impact the schedule based on the priority set up by CMS. Policies and procedures based on MARS-E 2.0 if not in place can impact the Authority to Connect (ATC), 8/1/16	to the policies should be brought to CMS and State leadership attention.	
189	Bobby Malhotra	Technical	Quality	System Resource Allocations	The production topology has not been finalized. Based on the draft production topology, more application servers, Mule Enterprise Service Bus (ESB) servers, application servers, etc. have been added. Performance testing which is entirely based on the finalized design is delayed.	The State should require Deloitte to finalize the infrastructure topology. The capacity plan should be updated and published to the State. All required VMs for performance testing environment should be immediately created for the Release 7 performance/load test. Identify any concerns over points of failure, performance bottlenecks, hardware and software initial purchasing/licensing costs plus corresponding annual budgetary impact for maintenance fees.	High
186	Bill Riippi	Finance	Cost	Potential Increase in Project Expenditures	Project expenditures are at risk to increase if a number of the observations that have been identified to impact the project schedule, resources, quality and scope are realized. Mitigation factors being considered may also result in increased costs. Selected events and observations that raise this concern include: • Completion of UAT on schedule to support Go-Live is at risk. Increasing the number of workstations and testers is currently being considered to mitigate the risk (Reference Observations 109, 121, 182 and Project Risk 67). Additionally, performing UAT on Saturday and extending the schedule are being considered. • Approximately 50% of the initially identified interfaces are behind schedule and considered High Risk as of 4/15/2016. Other required interfaces were initially	The State should develop potential scenarios that may be required to mitigate delays and estimate resulting expenditures. Evaluate the current project budget and make plans for potential variance. If funding is not currently available, plans for additional funds should be considered.	Medium

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					missed and are being evaluated (Reference Observations 110, 185, 155). • The Release 7 development schedule was previously revised to add 2 additional code merges to the original 4 planned (Reference Observation 169). Any schedule revision beyond this date will significantly increase the risk to meet the Go-Live date. Mitigation being considered is to delay selected functionality into September. To the IV&V Team's knowledge, there are no CRs pending that substantially impact the budget as this time. However, the CRs that may result from extending the schedule, adding resources, and adding scope to mitigate delays are likely to result in significant increased expenditures.		
188	Bobby Malhotra	Technical	Quality	HSRI-IES Code Quality - Error Handling / Exception Handling	The Phase 2 "HSRI-IES" code used for the ninth Bimonthly Code Review Report, had following issues identified on Error / Exception Handling: 1) Signature Declare Throws Exception- Observed in several classes a method/constructor explicitly throwing java.lang.Exception making unclear which exceptions the methods will throw. 2) Catching Throwable- Observed in some classes, code is either Catching Throwable or Error which will also catch OutOfMemoryError and InternalError. 3) Catching Generic Exception- In several places instead of adding different catch blocks to the try block, the programmer simply wrapped the method calls in a try/catch block that catches generic Exceptions. Another consequence of the generic catch clause is that logging is limited because catch does not know the specific exception caught.	The State should require Deloitte to insist their development team follow industry's best practices while developing code. The code quality checklist should be provided to the development team and closely monitor if they make sure to RUN Sonar and complete peer code reviews before checking in class to the repository. Additionally, 1) The developer should either use a class derived from RuntimeException or a checked exception. A method should only throw the exceptions that are relevant to its interface. Exception is the "root" of all exception, the developer should try to be more specific. Methods should not declare to throw the exception, only declare to throw the specific types of exceptions that can happen and re-throw in the catch clause. 2) Catch Exception instead of Throwable. Avoid	Medium

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
						catching Throwable; developers should never try handle error. Throwable is a parent of Exception and Error. For example, OutOfMemoryException is out of the program's scope and hence the developer should not consider these instances while coding. The recommended approach is that the application should not try and recover from errors such as these. Throwable and Error classes should not be caught. Only Exception and its subclasses should be caught. 3) Avoid catching generic exceptions such as NullPointerException, RuntimeException, and Exception in try-catch block.	
187	Bobby Malhotra	Technical	Quality	HSRI-IES Code Quality - Organization	The Phase 2 "HSRI-IES" code used for the ninth Bimonthly Code Review Report, had following issues identified: 1) Comments- The IES Code is a transfer solution; the majority of the comments in the artifacts reviewed were old and not updated. Additionally, there were insufficient comments on majority all the classes and methods reviewed. 2) TODOs- TODO tags are commonly used to mark places where some more code is required, but which the developer wants to implement later. This could result severe issues in later time, if the developer forgets to get back to that tag. 3) Empty methods- Observed in some modules, methods are empty. Additionally, no comments are there explaining why the method is empty without throwing any exception. 4) Commented Code- Observed commented out code in the majority of the classes in most reviewed modules. A best practice is to delete	The State should require Deloitte to insist their development team follow industry's best practices while developing code. The code quality checklist should be provided to the development team and closely monitor if they make sure to RUN Sonar and complete peer code reviews before checking in class to the repository. Additionally, 1) Well nested Class and method comments should written in each class. All source files should begin with a copyright comment header that lists the class name, version information, date, and copyright notice. 2) "TODO" tags should be handled and task should be completed associated to the TODO comments before pushing the code into production. 3) Methods should not be empty Add a nested comment explaining why the method is empty, throw an	**Medium**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					unwanted code. This practice alleviates confusion and encourages concise and easy to maintain code	UnsupportedOperationException or complete the implementation. 4) Avoid the retention of commented-out code or unwanted code in production	
190	Bobby Malhotra	Testing	Quality	Mock 3 Pilot Defect Management	Defect tickets are being closed/cancelled without a defined resolution. The majority of defects (estimated 95%) have been closed/cancelled/deferred without the appropriate acknowledgment by the State (e.g. note or comments the tester on the resolution to justify closure) being entered on the Mock Pilot 3 Work Request dashboard. Additionally, the Mock Pilot 3 Project Plan does not specifically document the process for closing/cancelling defects. Closing or cancelling defects without State's acknowledgement could result in inaccurate tracking and resolution of defects.	The State should work with Deloitte to develop the defect resolution process for pilots and include the process in the Mock Pilot plan. The State should require Deloitte to inform the State Pilot staff to include their closure comments in JIRA, before Deloitte closes/defers/cancels a defect. This process should be processed and implemented immediately. Existing closed/cancelled/deferred defects should be re-reviewed by the State and necessary State acceptance comments should be added for audit purposes. The State should also instruct State testers to provide required justification for closure (e.g. upload appropriate screenshot, including closure comments).	**Medium**

Table 3 – Observations and Recommendations Monitored

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
168	Bobby Malhotra	Technical	Quality	Data Conflicts found during the InRhodes and HIX data conversion to RIBridges.	During the conversion process, a significant number of data conflicts (e.g. different employment, income, address, etc.) have been found in the records of individuals during the InRhodes and HIX data conversion to RIBridges. The number of conflicts reported to date is already large and conversion is not complete. The exact plan for resolving the conflicts is still in work and manual effort may be considered to resolve the conflicts. These conflicts have to be resolved prior to the execution of any major batch and/or prior to go-live. The impact of the data selected must be carefully considered with regard to subsequent eligibility determination in the new system. If data is selected that is not current and incorrect, individuals who are currently eligible for benefits may be denied.	State should require Deloitte to provide status reports, including results of specific conversion conflicts identified (e.g. the number and types of conflicts). A plan should be developed that includes a timely approach to fix these conflicts prior to go-live. If the approach includes manual intervention, acceptable resource plans should be included. Mitigation plans should be considered due to the risk of individuals who may be eligible for benefits being denied due to incorrect data conversion.	**High**
170	Bobby Malhotra	Technical	Quality	Performance Testing for Release 7	Deloitte has initiated Release 7 performance testing without the submission and approval of a performance-testing plan. A plan must be reviewed and approved by the State is required before the results can be validated. Performance tests scheduled (April, May and June) to reevaluate the production capacity should consistently monitored to make sure the results mimics the production behavior.	The batches should be tested/examined utilizing a database identical in size to Production in order to gauge performance and evaluate its efficiency and stability. Consider simulating a production level of activity and load to observe the system performance under heavy load, in a scaled-down environment. Conduct sessions with the State technical team to ensure environment capabilities.	**High**
111	Bobby Malhotra	Requirements	Quality	Existing Plan Deliverables not Updated and Revised - #388	The system architecture, DR plan, capacity plan, database development, configuration plan, and others have not been updated with the new Phase 2 single database design. These deliverables will be required during the maintenance period and to support future system audits on the UHIP system. Additionally, the total number of environments,	The State should acknowledge and encourage Deloitte to update the technology and database related existing deliverables. The State should identify all essential technical documents for Deloitte to update to reflect the single database design. The State should request a Software	**High**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					servers, and licensed software installations may be in excess of original planned and licensed quantities which could incur additional licensing costs.	Licensing Analysis and True-Up from Deloitte to provide an audit and balancing of all ordered versus used software to ensure compliance with licensing terms.	
169	William Riippi	Schedule	Schedule/ Resource	Release 7 Code Merge Schedule/Plan Revised	Deloitte is adding two code merges (one on 4/15 and an optional one on 6/15) to the four initially planned (2/1, 4/1, 5/1, and 6/1). It is our understanding that one reason for the code merges is to allow for an incremental delivery of functionality to support UAT. However, additional testing is required to assure that the new functionality does not affect previously tested functionality. The unintended consequences is additional defects, limited test coverage, limited regression testing, extended UAT (potentially delaying UAT exit), and jeopardizing the Go-Live schedule.	The State: a. Require Deloitte to provide clarification on the specific functionality included in each code merge. Share this information with UAT to support test case development, test case execution, and resource needs. b. Require Deloitte to assure there is a plan to expedite defect resolution that supports UAT and allows for timely UAT exit before the scheduled Go Live date.	**High**
165	Bobby Malhotra	Technical	Quality	UHIP Security Certificates Not Being Tracked	A process has not been established to track the validity (e.g. expiration dates) of the security certificates and other types of certificates used/installed within UHIP system. Without a process and tool to manage these certificates, they may unexpectedly expire and result in interruption of the services if not renewed on time.	The State should require Deloitte to develop a process to manage and track the validity of all certificates used in the UHIP system (Customer portal, training environment, testing environment, phase 2, DR site). Certification reporting process should be prepared and consistently reported to the State.	**High**
176	Bobby Malhotra	Technical	Scope	UHIP System Change Updates to CMS - #367	For Authority to Connect, all the federal compliance documents have to be submitted to the CMS prior to GO-Live, July 2016. CMS has required the State to provide the list of all the major areas, which will be changed or modified in the system with the new centralized database approach (that will share the functionalities between citizen and the worker portal). As per CMS guidance, any changes that require data conversions/migrations i.e. staging environment have to be MARS-e compliant, the same	The State should ask Deloitte to update the architecture document that should contain all the areas to be refactored, modified, and changed in the new database approach; the updates should include all the updated information at least on all the significant areas listed by CMS. The State Security Team with Deloitte should schedule a meeting to discuss the changes with CMS. The State security team with Deloitte security team should schedule closely work with CMS to discuss the changes.	**High**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					document and third-party test assessment will be required of that environment for CMS approval.	Security documents for ATC should also be timely discussed with the State and CMS	
103	Bobby Malhotra	Technical	Quality	Health Insurance Exchange Code Quality based on Bi- Monthly Code Review 7 - #378	The random sample that CSG selected from recently modified modules and the fourth code review was used for the manual code review. The sample revealed several issues that falls into three basic areas of review 1) Comments 2) Organization 3) Error Handling. Although there were several issues identified during the code review, improvement was observed during this review.	Based on the issues found and recommendations, the following steps are recommended for the UHIP team to consider: a) Reduce the SONAR major issues within each release. b) Peer code reviews are a standard approach and are mandatory. c) Discuss the approach for new single database design; conduct meetings with CSG and the State to provide more insight on the integrated development to inform all the areas of the code which are planned to be refactored. d) Provide the code quality checklist to the development team and closely monitor if they make sure to RUN Sonar and complete peer code reviews before checking in class to the repository. e) Continue making efforts to improve the code quality and code as per best industry standards.	High
128	Bobby Malhotra	Technical	Quality	HIX Application Framework Still Requires Data Synchronization (Duplication) - #411	What: The HIX application framework still requires that the data which is directly accessed by the application exists in the HIX database schema (a copy) even though with the new single database design the master "source of truth" is considered to be the IES database schema. Implications: Storing copies of the data and synchronizing changes back and forth incurs some risk of sync failures. In one specific scenario where data has been saved in the citizen portal without submitting, changes made in the worker portal can synchronize back and overlay the citizen-entered data, causing data	The State Tech Team and Deloitte should collaboratively review the design and implementation to ensure that synchronization failures will be automatically retried and processes are in place to escalate any ongoing failures. Ensure that all failure scenarios are thoroughly tested. Ensure sufficient negative testing is performed (such as having a DBA lock a table to block updates) and validated for all anticipated and potential synchronization failure scenarios. Ensure fatal conditions at runtime are properly logged and escalated to	High

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					loss.	mutually agreed contacts with the support team and the State. In addition to handling synchronization exceptions as they happen, perform periodic validations to ensure the data stays properly synchronized.	
96	Bobby Malhotra	Technical	Schedule/Resource	2015 Disaster Recovery Testing - #366	The 2015 DR plan has not been completed. Viewing disaster recovery at an enterprise level may reveal missing or critical interdependencies. In addition, a complete business continuity plan has not been finalized.	Recommend creating a 2015 Disaster Recovery (DR) Plan. Deloitte should identify the point of contact from NTT and Deloitte's Infrastructure team for all DR related activities and finalized a date for testing. It is also recommended that Deloitte create and maintain a Disaster Recovery Tracker to track DR plans across vendors and agencies.	**High**
177	Bobby Malhotra	Technical	Scope	CMS Mandated Deliverable Related to Go-Live	CMS requires the State of Rhode Island (State) to submit updated documents drawn, per mutual agreement, from the Information Technology Enterprise Life Cycle (IT ELC) document.	The State shall provide the documents per mutually agreed upon schedule. The list of documents include, but not limited to, the concept of operation (ConOps), architecture diagrams, technical architecture diagrams, system security plans, IV&V reports, etc. The State shall upload all relevant documents in CALT for CMS review per completion.	**High**
158	Bobby Malhotra	Technical	Scope	Consolidated Database Design – Security Assessment	During the development of the Database Consolidation Readiness Assessment Report, four of the security areas evaluated in the database implementation had the following issues identified. This detailed list was noted in the original report issued on 01/29/16. #129/412 (High/High) – Although the Oracle databases are using transparent data encryption for data at rest, other application layers including application servers, ETL tools, and secure FTP landing zones need to be reviewed for any storage of sensitive data. #132/415 (Medium/Medium) – The HIX/IES	The State should ask Deloitte to identify all infrastructure platforms and locations where sensitive data is ever at rest on disk and what options are in place or available to ensure this data is encrypted. The State should request Deloitte's finalized session management design including how the risk of timeout and potential data loss will be mitigated. The State should evaluate the roles and responsibilities where direct database access is required and formalize	**High**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					single sign-on session management design is not finalized and tested. #141/425 (Low/Low) – Access control policies and procedures for direct database access are not formalized in writing. Based on current information, the overall Probability and Impact ratings are both High. Implications: Sensitive data stored on disk (at rest) in unencrypted format is at risk for access from remote access over the network, at the operating system level, or physical access to the drives themselves. Session timeout within one application (e.g., IES) while user actions are focused in the other (e.g., HIX) could potentially result in data loss. Lack of formalized access controls may result in improper authorization or incomplete audit trails for access to the database.	processes and procedures to authorize and request additions, changes, and deletions of database access for staff. The State should consider the long-term support model and projected separation of roles and responsibilities that may be desired or needed down the road, if any. Technological alternatives exist to encrypt data at rest via disk partition encryption, encrypted file systems, and third-party secure FTP packages that transparently encrypt individual files before storing them on disk. The State security team should collaborate with Deloitte to ensure all data at rest is properly protected. The State should incorporate database access controls with the established controls for application-specific security already in place.	
101	Bobby Malhotra	Technical	Schedule/ Resource	Disaster Recovery (DR) site moving to Sacramento - #375	The DR site move from San Jose to Sacramento have not been completed. The data replication from Warwick Data Center to Sacramento failed as NTT Data failed to bring up database server due to disk failure.	Deloitte should provide more explanation to the State about the new DR site change. The new site change, including testing efforts should be documented or update the DR Plan 12 and then circulated through the State PMO process for formal approval. CMS should also be made aware of the pending change for prior approval. Deloitte should arrange with the State designee to inspect the new Sacramento site.	**High**
102	Bobby Malhotra	Technical	Quality	Integrated Eligibility Services Code Quality based on Bi-Monthly	The random sample was selected from recently modified modules and the fifth code review was used for the manual code review and automated code review. The sample revealed several issues that fall into two basic areas of	Based on the issues found and recommendations, the following steps are recommended for the UHIP team to consider: Provide the code quality checklist to the development team and	**High**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
				Code Review 6 - #377	review 1) Comments and 2) Organization and Error Handling. However, all issues still remained from the fifth code review with very few deficiencies remediated.	closely monitor if they make sure to RUN Sonar and complete peer code reviews before checking in class to the repository. Continue making efforts to improve the code quality and code as per best industry standards. Every developer must run the SONAR report during development and during defect repair. Code should be SONAR compliant for critical and blockers. Reduce the SONAR major issues within each release.	
110	Bobby Malhotra	Technical	Schedule/ Resource	Interfaces Schedule for Release 7 - #387	Several interfaces require reach out to the source with considerable work around. Many interfaces are under SIT or development. There are 15 trading interfaces marked as off track as of 4/15/16. Several (~30) interfaces were initially missed and included in the list during planning phase of the UHIP project, these interfaces can significantly overall functional productivity if not ready by Go-live date	A plan is required to get on track. State should insist Deloitte to provide definitive timeline and the plan of interfaces testing for interfaces readiness. DUA should be signed between the agencies if required	**High**
171	Bobby Malhotra	Technical	Schedule/ Resource	Interfaces- Department of Health and Corrections	The development of the DOH and DOC interfaces have not been started for the Phase 2/IES system. Deloitte does not consider these interfaces as a part of the original requirements for the Phase 2/IES system. These interfaces are required to be operational in system to support Go Live and the current process is delaying development and subsequent SIT and UAT. The interfaces allow customer eligibility information, including birth, death and incarceration data, to be exchanged.	The State and Deloitte should make an agreement that allows for development of these interfaces to begin within a schedule that enables their completion and testing to support Go Live. To expedite discussions, the State and Deloitte should consider the original UHIP requirement traceability matrix that includes the interfaces as part of the HIX/IE scope.	**High**
167	Bobby Malhotra	Technical	Quality	Data Integrity	The transactional schema IE_APP_ONLINE alone includes over 2,600 tables/views including the audit tables), rough counts of parent/child relationships via foreign keys accounts for less than 1,000 tables. The audit tables (with names ending in _A) are not expected to have foreign keys by design, but that only explains about 500	The recommendation is to perform a thorough review of the tables that do not have any RI constraints to see why so many such tables exist. Further an analysis of all tables should be performed to ensure that no other foreign keys are missing. This can likely	**High**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					of them leaving another 500 for further review. Based on table counts, there seem to be hundreds of transaction tables that do not have any foreign key relationships at all. Unless all of these tables turn out to be truly "disconnected" for valid reasons, there may be significant omissions in the referential integrity (RI). Missing RI can allow invalid values to be populated and subsequently these rows may be missed in queries that perform a join on what may be expected to be firm relationship with another table. Without RI to preserve a relationship, a value that is used by a table which is missing the foreign key definition can have its row deleted in the parent table with no warning or error. Although the application may be programmed in such a way as to enforce the relationships via code, this approach does not support detection when data is manually manipulated as part of a data fix.	be expedited somewhat based on column naming conventions to identify columns holding common keys. In the event that columns are not utilizing RI for intentional reasons such as runtime performance issues or the requirement to hold data that has not yet passed validation, a systematic approach to documenting these as column comments in the database and/or notes in the data dictionary is recommended. These decisions and comments should be shared beyond the development team to include users that may be performing support activities including state staff.	
118	Bobby Malhotra	Technical	Quality	Network Bandwidth Testing Readiness - #396	Network Bandwidth Testing Readiness UHIP network traffic analysis and readiness for RIBridges go-live for 07/2016 have been initiated by the State. There are several areas identified that require high attention and need inputs from various agencies.	Before using EDM/Scanners in production, Deloitte should determine the size, type, and quantity of documents that will be uploaded or exchanged/transferred via the network by each location. The scanner usage and user load should be divided by the location (e.g. Providence, Cranston, New port etc.). Deloitte/NTT Data should provide firewall specs to the State for further enhancement on the State's firewall size.	**High**
107	Bobby Malhotra	Technical	Quality	Production Data Access for Phase 2 Interface Testing - #384	To test interfaces and batches, Deloitte requested testing with converted data in UAT CV for SSA interfaces, SSP Payrolls, mid-certification notices, etc. The approval was granted for two Deloitte individuals to access Production data. The State CISO firmly stated	Production data use for UAT should be eliminated, if required the necessary State leadership approval should be taken and hence CMS should be informed. Deloitte and the State should work with external sources (interfaces) to find an alternate. Otherwise, this will	**High**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					that Deloitte could not access Production data without masking when testing.	hamper the UAT E2E testing for Cycle 3. Also, no batch should run to process files from Prod SFTP server for SIT or UAT	
109	Mike Tully	Testing	Quality	Scripting Efforts for Release 7 - #386	The quality of some the UAT test scripts created to date will not thoroughly test the system. For example, Long Term Care does not account for time travel - (application pending resource or income information, medical documentation needed for LOC review, the actual LOC review, etc.), changes made to an existing, ongoing case - both stand alone and with SNAP, Plan of Care (which could be entered after the initial LTSS/HCBS authorization - once agency is found) this is needed to generate the Cost of Care in Wrap up, CSRA and how it is integrated into the LTSS/HCBS application, Transfer Penalties and impacts of the various types of assets and how joint ownership with non-hh members impact eligibility, etc. MMIS transactions for all LTSS/HCBS (MMIS transactions for 1E, 1F, 1G, 1U would also be generated depending on the LOC and living arrangement.)	The State should review the functionality within each agency and ensure the scenarios and level of detail will sufficiently test the business functionality, all test scenarios should be vetted for accuracy and thoroughness before being executed.	**High**
119	Bobby Malhotra	Technical	Quality	HIX/IE Downtime Dependency - #397	The single database model will have a common physical database for both the Phase 1 Citizen Portal and Phase 2 Worker Portal systems. With the centralization of common systems, features will be maintained in the Phase 2 Worker Portal data source. During "HIX/IES" system downtime, both applications will go down.	Determine if the customer interface will be available during IES downtime, how and where data entered by the customer will be stored, and that data will not be lost. Identify if there will there be a disaster solution when the IES is down. The State should require Deloitte to document different scenarios when the HIX portal will be affected, due to IES downtime. This may also impact batch execution as well as supporting the HIX portal.	**Medium**
98	Gloria Darby	Quality Assurance	Quality	Section 508 Compliance (Accessibility) Testing - #368	Section 508 requires that all website content be accessible to people with disabilities It was inadvertently discovered that a list of codes were being excluded from Deloitte's	CSG recommends the State identify testers who are visually or hearing impaired to test the accessibility functionality.	**Medium**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					accessibility testing, and the list was not properly documented within any deliverables. This prompted Deloitte to update the Phase 1 Detailed Test Plan (outside of the Change Management process) with the list of exclusions. Since accessibility is not tested in UAT, the State and CSG require Deloitte to provide a letter of attestation that accessibility testing has been completed; however, this does not equate to the true user experience. The State could face serious fines if it is later discovered that the application is not truly 508 compliant and end-users with disabilities are not able to fully utilize the system.		
121	Gloria Darby	Testing	Schedule/ Resource	Phase 1 Testing Resources for Release 7 - #399	Due to staffing changes and vendor changes at the Contact Center, most of the experienced testers from HSRI will not be available to support the HSRI portion of UAT. This experience is crucial to successful testing and allowed the Phase 1 UAT team to "hit the ground running." Having to bring on new testers will require onboarding and the ability to "hit the ground running" will be null and void.	It is suggested that the State work with the new vendor to be able to utilize those testers that may have remained with the Contact Center for UAT.	**Medium**
179	Bobby Malhotra	Technical	Quality	Security - User Role and Permission Matrix	The single database approach consolidated the HIX/IE permission matrix. This allows for the management of all user roles and the permission matrix within IES/RIBridges. Significant testing is required to assure that each user has access to their authorized screens. Failure to correctly authenticate and authorize each user could result in a security incident post. In addition, it may lead to permission issues with the application approaching Go-Live.	i) Require Deloitte to provide the SIT scripts, with the results, to validate appropriate end-to-end user role-based testing. ii) Require the execution of the appropriately documented test plan and UAT scripts and during UAT and the pilot. iii) Require each Agency to assure the successful testing and verification of all the roles per their business rules before Go-Live.	**Medium**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
164	Bobby Malhotra	Communications	Quality	Minimal Visibility to Phase 2 Development and Testing	Deloitte has kept very minimal communication with State on development and system integration testing efforts. Without notifying State or discussing the feasibility of any existing implemented functionality designs are getting modified. Phase 2 with Contact Center Integration enhancements couples all the agencies to a single source of truth "Single database", any change to the existing functionality due to design or system feasibility, issue if not well communicated, depending on the significance of the change may cause or delay EOHHS, Exchange and/or DHS in user acceptance testing, which may further impact the Go-Live schedule.	The state should require Deloitte to set up time involving all agencies to discuss the development and SIT efforts. Deloitte should immediately provide detailed demonstrations to the State to obtain a better understanding of the any significant design change other than Claimed SSN, citizens to retrieve their eligibility/enrollment data from the citizen portal instead of RIBridges. The state should require Deloitte to submit results with detailed exit criteria of SIT and smoke testing with the trading partners prior deploying into UAT	**Medium**
100	Bobby Malhotra	Requirements	Quality	Phase 2 - Requirement Traceability Matrix - #371	The current RTM partially supports the new centralized database approach for the UHIP architecture framework. The citizen and the worker portal applications will be integrated with shared functionalities. This will be a significant change to existing architecture, including security and shared application frameworks. Without an updated RTM it will be difficult for the State to interpret and keep track of the requirements. The RTM helps to create a downstream and upstream flow of connecting software requirements to product requirements.	As changes are implemented, Deloitte and the State should perform the required updates to the RTM. The RTM will help ensure that the project requirements are met as well as track all changes made to the system.	**Medium**
154	Bobby Malhotra	Technical	Quality	Phase 2 Data Model Design Modified without the State Approval	The proposed data model design "Citizen Portal to read the common data from Worker Portal" changed without State approval. Eligibility data will be loaded back to staging database. Moreover, citizens will retrieve their eligibility/enrollment data from the citizen portal instead of RIBridges. The approach was to reduce the volume of data exchange between both the systems, remove the data redundancy, to have the person and account level	Deloitte should provide detailed demonstration to the State to obtain a better understanding of the significant design change. Any change to the design after the deliverable approval should be discussed with State stakeholders prior to implementing or prior to Go-Live on July 2016.	**Medium**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					information devoid of the common services (eligibility, task, notices) data.		
112	Bobby Malhotra	Technical	Quality	Performance Testing Results for Release 6.6 - #389	Deloitte has initiated Release 6.6 performance testing. It is assumed that the results will be validated against expected SLA's with newly added/modified functionalities and with common expected usage scenarios. Significant key areas like testing scope, volume, plan, and the environment's capacity have not been discussed with the State and IV&V.	Conduct sessions with the State technical team, including IV&V to ensure environment capabilities. Consider simulating a production level of activity and load to observe system performance under heavy load, in a scaled-down environment.	**Medium**
95	Bobby Malhotra	Technical	Scope	MFA for Phase 2 Remote Access - #357	The IRS asked the State to implement MFA for IES worker portal. UHIP/IES Worker Portal will only be accessible from within the State's network. The IRS guidelines state that the individual accessing system containing FTI from a remote location requires an encrypted modem and/or Virtual Private Network. Additionally, two-factor authentication - cryptographic identification device, token, is required whenever FTI is being accessed from an alternate work location. The IRS has also stated that FTI can only be viewed using State provided laptop or workstation.	Business approval from all the agencies is immediately required for the remote access. The State must determine how this implementation needs will be funded. State and Deloitte must work together to find out if something can be leveraged from the Phase 1 MFA implementation. Gaps and the requirement must be documented instantaneously so that the scope of work can be included in APD.	**Medium**
120	Bobby Malhotra	Technical	Quality	Automation Regression Testing for Iteration 7 - #398	For phase 1 and 2, Deloitte agreed upon creating the automated quality test suites into their regression test process. First Code Merge for Phase 2 "cycle 3" is scheduled for 2/1, there have been no discussion/plan to date on Automation regression testing. Automation suite was not built for 6.6 release which explicitly was considered as an assumption under ca 35.	Deloitte should provide the update and plan on the automation regression testing. The regression suite should cover E2E HIX/IE functionalities. State should insist Deloitte to immediately provide the timeline and the status on this.	**Medium**
155	Bobby Malhotra	Technical	Scope	Data feed from RIBridges to Data Warehouse	The daily batch feed of specified data fields from RIBridges to the Human Services Data Warehouse (HSDW) has not been developed by Deloitte. If the batch feed is not developed,	The State should ensure that Deloitte is working with HP to develop a daily batch feed for the HSDW prior to go live. Weekly meetings with a detailed	**Medium**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					clinical eligibility will not be able to be determined by the OMR. According to original requirements, Deloitte is required to create a daily batch feed of specified data fields from RIBridges to the Human Services Data Warehouse (HSDW), with the data to be exported determined through analysis and design to be performed by the Deloitte. To date, Deloitte has not developed a daily data feed from RIBridges to the HSDW. The Office of Medical Review (OMR) currently uses the Customer Service Management (CSM) tool to determine clinical eligibility. The CSM interfaces with data warehouse real-time to gather eligibility data of customers applying for benefits. Without a daily data feed from RIBridges, the Office of Medical Review (OMR) will be significantly impacted after go live. Clinical eligibility determinations will be based on outdated data.	plan should be scheduled between the State, Deloitte and HP. If the batch cannot be developed prior to go live, an alternate plan should be discussed to ensure that OMR would have current data for clinical eligibility determinations.	
99	Bobby Malhotra	Technical	Scope	HIX Application Vulnerability Testing - #369	Deloitte is currently conducting security testing within the HIX application. However, the security test plan and the scope have not been shared with the State Security team. Deloitte has not made the State aware of what areas of the application where security scans are planned or have been conducted. Nor does the State have insight into any information on when and what level of defects was found during testing. Without this information, there may be security vulnerabilities yet to be identified, discussed, and resolved.	It is recommended that Deloitte inform the State Security team about all activities related to Security testing. The State should be notified about the severity of all defects found and provided with a detailed plan, recommendations, and steps taken to fix any issues identified.	**Medium**
93	Bobby Malhotra	Technical	Schedule/ Resource	Semi-Annual Security Report - #308	There are several requirements (approx. 8 to 10) traced out from the RTM which are being set as NOT MET, for example- Deloitte has not prepared a Security Report, which is required to be submitted every 6 months to the State. As per the requirement, the report must define all	The State should ask Deloitte to provide a plan of action for completing the Security Report. Moving forward Deloitte should submit a Security Report every six months.	**Medium**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					security-related activities, upcoming security initiatives, and long-range security plans. The State has not been provided with any such document from the DDI vendor for upcoming security plans, activities to protect the system and application appropriately.		
123	Bobby Malhotra	Technical	Scope	Save and Exit Functionality in HIX after Go-Live - #402	The HIX will not accommodate existing users to resubmit an application during the change reporting process. Currently, a user can change their circumstances and exit from the account after saving the data using the 'Save/Exit' functionality. After go-live in 07/2016, batches will be running on the data, maintained within RIBridges tables and not on the data stored within the HIX account. Therefore, information saved without resubmitting the application using the 'SAVE/EXIT" functionality will never sync data to RI Bridges. This will impact eligibility status, based on the latest data provided by the customer without submitting the application. This also applies to address changes made by a user.	It is recommended the State require Deloitte to provide details about the synchronization mechanism on these conditions. If there is not a synchronization plan for the identified scenarios, then an alternate plan or discussions about handling batches should be initiated.	Medium
117	Bobby Malhotra	Technical	Quality	UHIP-HIX/IE Security Audit - #395	UHIP-HIX/IE Security Audit Grant Thornton have been appointed to conduct the security audit on UHIP- HIX/IE. The State and Deloitte agreed upon having a SOC 2 Type II audit completed. Grant Thornton's team have expressed some concerns conducting a SOC 2 audit and requested an AT101 audit instead. According to the Bridging document, the audit should be equivalent to SAS Level 2. There is uncertainty and a lack of information available to the State with details to help them distinguish between both audits.	The State should require Deloitte to provide detailed information on AT101. Additionally, the language in the bridging document should be closely reviewed before making any determinations. The state should immediately require the close review of the SAS level 2 to determine the scope of SOC II Type 2.	Medium
116	Bobby Malhotra	Technical	Quality	UHIP Infrastructure - Open Source	UHIP infrastructure uses open source products to support major pieces of architecture in the production environment. Lack of commercial support available for majority of the open	The open source products should be researched and analyzed to determine the level of risk exposure, if any, that is being imposed by using these products.	Medium

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
				Products - #394	source products, senior technical expertise are often required to maintain/debug such products	An example is Mule ESB, Apache ActiveMQ.	
125	Mike Tully	Testing	Scope	Backlog of Defects for State Review - #404	The backlog of defects that need to be reviewed between Deloitte and the State for potential change requests has not been completed. The weekly review sessions have been de-prioritized by Deloitte and often cover internal tasks and items that had been reviewed in prior sessions.	Deloitte should review the list prior to meeting with the State to remove internal items and defects that have been reviewed previously or are already included in updated design sessions. Deloitte and State resources should agree on a dedicated schedule for reviewing the backlog until it is completed.	**Medium**
114	Gloria Darby	Testing	Quality	Blueprint Testing Incomplete within Phase 1 - #392	Phase 1 is coming to a close with Blueprint testing remaining incomplete. Achieving full accreditation as a SBM is dependent upon successful completion of Blueprint testing 6 scenarios remain outstanding, they have been postponed from one release to another to only be deferred once again. IV&V attestation is required. The State of RI cannot be granted full certification as a SBM with testing scenarios incomplete. While CMS has not instituted a timeline for completion outside of the original 2013 date, deferring these test scenarios and business functionality into Phase 2 not only impacts the workload, timeline, but it also raises the concerns of additional costs	It is recommended that the State require Deloitte to provide a timeline for completing testing, achieving attestation, and implementing the required functionality,	**Medium**
104	Bobby Malhotra	Testing	Schedule/ Resource	Incomplete Testing Efforts for Interfaces in SIT - #379	Deloitte's Interface SIT efforts primarily entails ensuring the files are correctly formatted and the data can be read. There does not appear to be a testing effort that includes viewing the data collection screens to see if the data is correctly displayed and the appropriate case action is taken per the data received. A Schedule/Resources risk exists because the Interface testing increases the amount of time	The State should require that Deloitte fully test all interfaces in SIT prior to deploying the functionality into UAT, as described in Deloitte's P2 Application Development Plan: The objective of Perform System Integration Testing activity is to test the customized RI UHIP solution and confirm that various sub-systems and interfaces integrate	**Medium**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					and effort in UAT. Additionally, with the current delay in interfaces, this may extend the UAT schedule.	with the solution and function as required. This testing will be performed in the System Test environment. The SIT testing effort should include not only receiving the files from partners, but also reading and displaying data appropriately in Bridges.	
172	Bobby Malhotra	Technical	Scope	Annual Penetration Test Not Conducted	Deloitte is contracted to perform a network penetration test every year with the results to be published to the State within 14 days of completion. The penetration test results are important and represent the potential vulnerabilities in the system and the associated security risks. Without the test results and identified risks, an evaluation of the system vulnerabilities cannot be performed.	The State should require Deloitte to immediately conduct the network penetration test and submit the results to the State for review within 14 days of completion.	**Medium**
106	Bobby Malhotra	Technical	Quality	Phase 1 Slow System Performance - #383	System performance consistently observed to be slower than usual starting the week of 12/14/15. Application submissions and verifying tasks are heavily impacted, while page navigation and other activities have experienced degraded performance at peak times. All users, including individuals and workers across DHS offices and the Contact Center, are impacted. The impact is heaviest during peak hours (M-F, 8 am - 5pm).	There is an immediate need for workarounds to track system performance. The RIBridges single database design will have shared/common functionalities and the expected load will be heavy on the IES code. It is recommended, that Phase 2 production environment be simulated within a performance environment. All issues found and fixed during the previous and current open enrollments should be documented. An actionable plan should be built with metrics captured on a regular basis, benchmarks, and shared wide area network bandwidth utilization tracked all based on the new RIBridges. Any known performance issues should be communicated to the State.	**Low**
156	Bobby Malhotra	Technical	Quality	Availability and Content of Design Documents	Terminology used in the database design document is not always used in a precise technical manner. Most of the high-level system documentation has not been updated since	The State should request that Deloitte revise the existing documentation for the single database design to explicitly show at a schema and table level what	**Low**

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					2013. The documentation does not reflect a comprehensive baseline of what would have gone live for the original 2015 release. It does not incorporate the changes for the single database design for go-live in 2016.

Implications: The state will not have a clear picture of the system they are receiving which can impact the long-term maintenance and support of the system. Specific examples have been listed below from individual observations in the Database Consolidation Readiness Assessment Report:
#148/432: The single database design document does not paint a clear picture of the final design and implementation. The terminology for database and schema in particular were frequently interchanged or used ambiguously. The re-characterization that the citizen portal will utilize a separate "staging database" is misleading because it is neither a separate database, nor does it reflect the ongoing use for other programs within the citizen portal such as SHOP that are not being consolidated with IES.
#149/433: Master matrix showing where data is created, read, updated, and deleted (known as a CRUD matrix) does not exist. The technical designs for individual widgets were identified as having the details for usage of data elements, but these may not be readily cross-referenced or searched across the entire system. Maintenance staff may not be readily able to identify the true impact of data or design changes.
#135/418: No systematic identification of HIX/SSP table-by-table disposition has been documented. Users performing ad-hoc reporting, support staff researching discrepancies or implementing data fixes, and future developers and system designers will not | is considered the source of truth and what is a synchronized copy of the data. The State should request that Deloitte provide additional documentation, including an overall CRUD matrix plus documentation showing the disposition of each HIX table from a post-conversion standpoint.

Request documentation, including a thoroughly reviewed and updated single database design document with a focus on clearly articulating the baseline that would have gone live and itemizing the differences in data storage and replication that will be used by the current implementation. Request a master CRUD matrix showing system-wide usage of data at a schema/table level. Document all existing Phase 1 schemas and tables with a disposition status on each (unused, unmodified, partially converted, dropped, etc.). | |

ID #	CSG POC	Big Rocks Category	Dashboard Category	Title	Observations	Recommendations	Risk Rank
					have a clear picture of what source system transactional and historical data is valid.		

4.4   Catalog of Review

This section includes a list of the RI UHIP interviews, meetings observed, and materials reviewed by the CSG IV&V team during this Monthly IV&V Assessment.

4.4.1   Interviews

This section provides a listing of personnel interviewed during the month.

<p align="center">**Table 4 – Project Stakeholders Interviewed**</p>

Project Stakeholders Interviewed	Title or Team	Organization
Vanessa Doorley	RI UHIP Project Manager	Office of Digital Excellence
Phil Silva	RI UHIP Technology Lead	Office of Digital Excellence
Deb Merrill	RI UHIP Technology Team	Division of Information Technology
Art Schnure	OHHS SME	RI Office of Health & Human Services
George Bowen	DHS Asst. Director	RI Department of Human Services
Kailash Bolar	Lead Architect	Deloitte
Kiernan Conn	CISO	HealthSource RI
Raj Mukkavilli	Infrastructure Lead	Deloitte
Saurabh Gupta	Sr. Security Manager	Deloitte
Michael Holte	Interface Lead	Deloitte
Adam Hogue	Mock Pilot 3 Lead	Deloitte
Jason Jones	Training Manager	Deloitte
Tim Sanouvong	Sr. Security Manager	Deloitte
Conaty Kelly	State Mock 3 Pilot Lead	RI Department of Human Services
Cheryl Dessaint	State Mock 3 Pilot Lead	RI Department of Human Services
Vania Rebollo	Eligibility Supervisor	RI Department of Human Services
Arora Swapan	Security Manager	Deloitte
Shannon Massaroco	DHS Asst. Director	RI Department of Human Services
Jeffery Walker	Conversion Lead	Deloitte
Jen Deboer	Administrator	RI Office of Health & Human Services
Sally McGrath	DHS UAT Lead	RI Department of Human Services

4.4.2   Meetings Attended

This section provides a listing of meetings observed.

Table 5 – Meetings Attended

Project Meetings Attended	Participants
UHIP Project Management Team (PMT) Meetings	State, Deloitte, and PCG
Problem Management Meetings	State and Deloitte
IV&V Monthly Risk Assessment with UHIP Leadership	State
IV&V Risks Review with Governor's Office	State
Deloitte Technology Round Up Meetings	State and Deloitte
State Tech Status Meetings	State and Deloitte
State and Deloitte Security Meetings	State and Deloitte
IV&V Observations, Risks and Issues Update Meetings	State and Deloitte
Release Preparation Meetings	State and Deloitte
Performance Testing Approach for Release 7	State and Deloitte
Phase 2 HIX/IE Batches discussion	State and Deloitte
IV&V Collaborative Session – Technical Observations	State and Deloitte
CMS State Testing VLP Testing Webinar	State and CMS
FDSH Services Testing meeting	State, FNS, and Deloitte
Daily UAT Defect Triage Meetings	State and Deloitte
Weekly UAT Defect Deep Dive Meetings	State and Deloitte
Weekly Release 7 UAT Update Meetings	State and Deloitte
Weekly Release 7 interface Meetings	State and Deloitte
Disaster Recovery Planning Meetings	State and Deloitte
EOHHS & HSRI – Testing and Planning Meetings	State and Deloitte
IT Demo with HealthSource Rhode Island	State and Deloitte
Mock Pilot 3 Status Review Meeting	State, FNS, and Deloitte
RI UHIP QRadar SIEM Demonstration	State and Deloitte
M&O Contract and Release Preparation	State
Third Party SAR Planning and Kickoff Meetings	State and Deloitte
UAT Cycle 3 Exit Meetings	State and Deloitte
Cycle 4 Preliminary SIT Exit Meeting	State and Deloitte
Implementation Activities and Readiness Meetings	State and Deloitte

4.4.3   Documents and Files Reviewed

This section provides a detailed listing of all documents reviewed during the month.

Table 6 – Documents and Files Reviewed

Documents and Files Reviewed
Daily Operations Report
Maintenance and Operations Release Notes
Hot Fixes Release Notes
Key Performance Indicators
System Performance Reports
Data Analytics Wave 2 Technical Design Document
SIT Build and Unit test results
Release 7 Interface documentation
Release 7 Conversion Document
Security Controls on accessing Production Data for UAT
Implementation Readiness Plan
Maintenance and Operations Contract
CMS disaster recovery (DR) testing requirements (IV&V attestation required)
Functional Enhancement SIT and Unit Test Results
Mock Pilot Three Plan and Implementation activities tracker
Privacy Impact Assessment federal document
Release 7 interfaces tracker with timeline and schedule
Release 7 Performance Testing Plan
RI-UHIP 4/11/2016 M&O Release and SLAs for the M&O contract (planned start July 2016)
Data Analytics Wave 2 TDD v1.0
DHS 1049 & 3503
USCIS- SAVE Interface FDD and TDD
Stellarware, DCYF, RIDE, CMS Buy interface documents
Code Review
State Office Readiness Assessment
Security Implementation activities and the risk register
MARS-E 2.0 and MARS-E1.0 compliance documents
Change Request (CR) Backlog Review

Documents and Files Reviewed
PMT/Internal CCB and SR
HCBS Waiver, KB.01 and KB.05, 06 10-P2-MappingSheet-Interfaces-MMIS_v5.1 UAT scripts

5. DELIVERABLE SIGNOFF AND APPROVAL

The following approval form is used to indicate that this Project Deliverable, the Rhode Island Unified Health Infrastructure Project Monthly IV&V Assessment, has been reviewed by the State and all the necessary project stakeholders, and the authorized signers accept and approve the content herein.

Unified Health Infrastructure Project

State Approvals

CSG Monthly Status Report	
Conditional Deliverable Information	
Conditions of Acceptance:	
How Conditions Were Met:	
Date Resubmitted for Final Acceptance:	
Conditional Deliverable Signoff	

CSG :   Date:

☐ Approved With Indicated Conditions   ☐ Not Approved

State Representative: Date:

Final Deliverable Signoff	

CSG: Date:

DOA Representative: Date: