DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

pGc Paul Garstki Consulting

INDEPENDENT REVIEW

OF A PROPOSED

MEDICAID DATA LAKE & ANALYTICS SOLUTION (MDLAS) WORKSTREAM WITHIN THE MEDICAID DATA WAREHOUSE & ANALYTICS SOLUTION INITIATIVE

For the
STATE OF VERMONT
AGENCY OF DIGITAL SERVICES (ADS)
And
DEPARTMENT OF VERMONT HEALTH ACCESS (DVHA) / AGENCY OF HUMAN SERVICES (AHS)

Submitted to the
State of Vermont, Office of the CIO
by:

Paul E. Garstki, JD, Consultant
d/b/a/ Paul Garstki Consulting
344 Laird Pond Rd.
Plainfield, VT 05667
paulg.consulting@gmail.com

July 5, 2023

Version 4.0

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

TABLE OF CONTENTS

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

TABLES

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

1 EXECUTIVE SUMMARY

Provide an introduction that includes a brief overview of the technology project and selected vendor(s) as well as any significant findings or conclusions. Ensure any significant findings or conclusions are supported by data in the report.

The State of VT is seeking to implement a new data warehouse technology infrastructure using existing technology & current capabilities to meet the reporting needs of the Agency of Human Services (AHS) Department of Vermont Health Access (DVHA) in support of its Medicaid program. The State's current systems are unable to meet the State's need for a 360-degree (or longitudinal) record of members with accurate and complete data, and lack a single business intelligence platform. The Solution must adhere to CMS's as well as the State's Medicaid Enterprise System (MES) strategy.

The proposed solution consists of a Medicaid Data Lake (MDL), an Analytics Data Warehouse (ADW), and a Data Analytics & Reporting (DAR) platform, to be procured in two separate workstreams. The present Independent Review considers one of these workstreams, comprising the MDL and the DAR, and known as the Medicaid Data Lake & Analytics Solution (MDLAS).

We found this project to be extremely well organized, conceived, managed, and monitored. It is a costly project but promises to deliver significant benefits to the State and its people in the service of a high-priority health policy program.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

1.1 COST SUMMARY

Table 1 - Cost Summary

IT Activity Lifecycle (years):	**6 years and 8 months[1]**
Total Lifecycle Costs:	**$73,075,203.13**
Total Implementation Costs:	**$31,190,425.67**
New Average Annual Operating Costs:	**$8,376,955.49**
Current Annual Operating Costs	**$0.00**
Difference Between Current and New Operating Costs:	**$8,376,955.49**
Funding Source(s) and Percentage Breakdown if Multiple Sources:	**Procurement** **Federal: 90%** **State: 10%** **M&O** **Federal: 75%** **State: 25%**

[1] DAR initial implementation is 20 months, followed by 5 years of M&O.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

1.2 DISPOSITION OF INDEPENDENT REVIEW DELIVERABLES

Table 2 - Disposition of Independent Review Deliverables

Deliverable	Highlights from the Review *Include explanations of any significant concerns*
Acquisition Cost Assessment	The total acquisition cost is $31,190,425.67. About $24 million of this goes to the implementation vendor, the rest goes to professional services, State personnel costs, and software licensing. The acquisition costs are valid, as demonstrated in Attachment 1 – Cost Spreadsheet in light of the comments above, and they are appropriate for the personnel the vendor is providing, by a comparison to equivalent salaries in the vendor's home state.
Technology Architecture Review	The system as it would be implemented is state-of-the-art, modular and robust. It is highly aligned with both CMS and State strategic directions and with State technology preferences. It is scalable, resilient, designed to be updated as needed, and likely to deliver the benefits expected.
Implementation Plan Assessment	The implementation timeline from MDLAS contract execution to (initial) a go-live is 24 months. The vendor employs an Agile/hybrid model, consistent with State preferences. The Agile sprints are informed by the contract requirements, stated in the form of User Stories (common for Agile development). The Implementation Plan is detailed, has a realistic timeline, and defines deliverables and phases adequately. Project management looks good on both the vendor and State sides. DVHA and ADS staff, and outsourced staff, appear to be working together very efficiently. There is a lot of knowledge transfer and appropriate knowledge redundancy; a lot of confidence and cooperation; a demonstrated ability to change direction when appropriate; and an enthusiasm for the final product.
Cost Analysis and Model for Benefit Analysis	The project carries a TANGIBLE COST of $73,075,203.13. It does not include the cost savings as it does not retire existing legacy systems; That said, we think it is reasonable to speculate that these other functions will eventually be replaced through implementation of more modern systems, in keeping with the State's strategy of replacing aging legacy systems; but it would not be proper to identify such as a benefit to the present project and the project team has not done so. Intangible benefits are extensive and relate to the effectiveness and performance of the Medicaid program, support for policy analysis and

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

	development, compliance with federal and State requirements and ability to adapt to new ones, and a reduced reliance on antiquated technology. These intangible benefits are supported by extensive Business Analysis performed by the State; by guidance and requirements issued by CMS; by experience and business knowledge possessed by the State Medicaid program staff; and by data analyzed in numerous reports produced by the State.
Impact Analysis on Net Operating Costs	Because the existing systems, which also support other activities, are not being decommissioned as part of this project, the impact analysis consists of a straightforward listing of workstream costs by implementation and by operating year. This workstream would be supported in part by Federal Funding in the following proportions: • Procurement and Implementation: Federal 90%, State 10% • Maintenance and Operations: Federal 75%, State 25%
Analysis of Alternatives	Continuing to use the existing systems is unsustainable. The State's existing systems are CMS compliant and certified; however, they are not scalable nor easily modified or updated, so it is reasonable to speculate that such compliance will become increasingly difficult over coming years as the CMS requirements evolve. As important, the State's own internal needs for data analysis and use will continue to evolve, and this would conceivably stretch the existing data analysis resources to the breaking point. None of the finalists selected in the procurement effort were found to be financially unfeasible. The selected vendor was the most expensive of the three (but not unreasonably) yet scored highest in every one of the other categories. This is consistent with State competitive bidding process, where bid cost is *a* factor, but not *the only* factor to consider.
Security Assessment	The vendor is obligated contractually to fulfill and align with all State security requirements and expectations. Several of the comments below are derived from requirements in the draft contract. Significantly, though, a read of the vendor's original proposal reveals that they not only agree with the State's requirements but have an understanding and approach demonstrating a familiarity with stringent security controls and the heightened privacy controls of systems with Medicaid data.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

1.3 IDENTIFIED HIGH IMPACT &/OR HIGH LIKELIHOOD OF OCCURRENCE RISKS

NOTE: Throughout the narrative text of this document, **Risks and Issues are identified by bold red text**, and an accompanying tag (**_RISK_ID# _0_**) provides the Risk or Issue ID to reference the risk, response, and reference in the Risk Register.

The following table lists the risks identified as having high impact and/or high likelihood (probability) of occurrence.

Please see the **Risk & Issues Register, in Section 10**, for details.

Table 3 - Identified High Impact & High Likelihood of Occurrence Risks

Risk Description	RATING IMPACT/ PROB	State's Planned Risk Response	Reviewer's Assessment of Planned Response
The project team is aware from work on the MMIS Interoperability Project that the data detail in the VHIE is at the provider level. Multiple provider records for a single member "encounter" will increase data transmission volume and may require an increase in previously estimated storage and processing allocations. **An increased data volume may require an update to the prior estimated storage and processing allocations used during MDLAS contract negotiations.**	**49** **7/7**	**MITIGATE** **Further investigation and determination of clinical data transmission volume from the VHIE will be vetted during the data source validation phase of the MDLAS contract.**	**concur**
Several vendors involved with the MDWAS project must work together closely throughout the project duration to ensure project scope, schedule and budget remains intact. Collaboration and	**35** **5/7**	**MITIGATE:** **There are no current contracted vendors aside from the selected MDLAS vendor. This will become an open risk after MDLAS vendor kickoff. Vendors**	**concur**

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

communication must remain top priorities for overall project success. **Failure to align vendors may result in project schedule delays, rework, missed work or other critical project issues.**		**are aware this is coming and when the State expects them to fully engage. Team must set expectations up front with any involved vendors. As required by their project role, vendors must be aware of both workstreams' scopes and the interdependencies between them.**	
At the time of this writing, the ADW procurement is not complete and therefore the implementation timeline for the ADW has not been firmly set. The target date for ADW contract start date is 20 months after MDLAS contract start date. The implementation period maintained in the ADW RFP is 9 to 20 months. **There is the possibility of a "gap" in MDLAS implementation timelines.**	**35** **7.5**	**The State is aware of this risk and reflected it on the overarching MDWAS project timeline. Dates shifted due to the procurement strategy decision resulting in a MDLAS Technical Design Architecture (TDA) deliverable to inform the ADW RFP. The State is working to update the ADW RFP and will revisit the maximum period of implementation prior to posting, understanding reduced timeline will have increased costs. The length of gap, if any, will be determined after a vendor is selected and contract dates solidified for the ADW module. Discretionary funds are available on the MDLAS contract to account for some delay if required, but more significant delays may require a contract amendment.**	**concur**

1.4 OTHER ISSUES

Issue: Current project funding requires $600K in additional general fund from DVHA.

State response: The State may request the $600k additional funds via a BAA submission or a governor recommendation budget submission anticipated to occur during SFY '25-'26 or SFY '26-'27.

Assessment: The response is adequate and reasonably likely to resolve the issue.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

1.5 RECOMMENDATION

We recommend this project go forward as planned.

1.6 INDEPENDENT REVIEWER CERTIFICATION

I certify that this Independent Review Report is an independent and unbiased assessment of the proposed solution's acquisition costs, technical architecture, implementation plan, cost-benefit analysis, and impact on net operating costs, based on the information made available to me by the State.

DocuSigned by:
Paul Garstki
493B2479DEA04AE...

7/6/2023

Independent Reviewer Signature **Date**

1.7 REPORT ACCEPTANCE

The electronic signature below represent the acceptance of this document as the final completed Independent Review Report.

DocuSigned by:
Paul Pratt
793629E7EE37476...

7/6/2023

ADS Oversight Project Manager **Date**

DocuSigned by:
Denise Reilly-Hughes
6041A76735A7442...

7/7/2023

State of Vermont Chief Information Officer **Date**

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

2 SCOPE OF THIS INDEPENDENT REVIEW

2.1 IN-SCOPE

The scope of this document is fulfilling the requirements of Vermont Statute, Title 3, Chapter 056, §3303(d):

2.1.1 THE AGENCY SHALL OBTAIN INDEPENDENT EXPERT REVIEW OF ANY NEW INFORMATION TECHNOLOGY PROJECTS WITH A TOTAL COST OF $1,000,000.00 OR GREATER OR WHEN REQUIRED BY THE CHIEF INFORMATION OFFICER

2.1.2 THE INDEPENDENT REVIEW REPORT INCLUDES:

A. An acquisition cost assessment;
B. A technology architecture and standards review;
C. An implementation plan assessment;
D. A cost analysis and model for benefit analysis;
E. An analysis of alternatives;
F. An impact analysis on net operating costs for the Agency carrying out the activity; and
G. A security assessment.

2.2 OUT-OF-SCOPE

- A separate deliverable at additional cost as part of this Independent Review may be procurement negotiation advisory services at the State's request, but those services are not currently part of the deliverables in this report.
- Review and assessment of any other workstream.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

3 SOURCES OF INFORMATION

3.1 INDEPENDENT REVIEW PARTICIPANTS

Table 4 - Independent Review Participants

Name	Title	Role	Topic
Chelsea Carriveau	IT Project Manager	Project Manager	All topics
Bill Clark	Medicaid Compliance Officer	Business Lead	History & Overview,
Lori Collins	Project & Operations Director	Support Business Lead	History & Overview,
Ben Cullen	IT Project Coordinator	Project Coordinator	History & Overview, EA & Security, Finances & Funding
Dave Johnston	IT Manager I	MDLAS Technical Lead	History & Overview, EA & Security
Sean Judge	Enterprise Architect	Enterprise Architect	History & Overview, EA & Security
Emily Wivell	Director of Security	Security Lead	EA & Security
Cathy Petrini	IT Manager II	ADW Technical Lead	EA & Security
Erik Poitras	Financial Director I	Finance Lead	Finances & Funding
Grant Steffens-Hodgkins	IT Manager III	Technical Sponsor	Finances & Funding

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

3.2 INDEPENDENT REVIEW DOCUMENTATION

The following documents were used in the process and preparation of this Independent Review

Table 5 - Independent Review Documents

Document	Source
Deloitte VT BAFO Submission.docx	Vendor
IT_ABC_Updated_MDLAS+ADW_20230510.docx	State
MDLAS_Contract.docx	State
MDLAS_RFP_v1.1_20220126.pdf	State
MDLAS_Scoring Workbook_Vendor Proposals_Top Three Bidders.xlsx	State
MDWAS_Actuals_IT ABC Form_20230510.xlsx	State
MDWAS_Architecture Vision Document_v3.0.docx	State
MDWAS_IT_ABC_Form_Final_05102023.pdf	State
MDWAS_Project Charter V2_DRAFT.docx	State
MDWAS_Risk & Issue Report__20230523.xlsx	State
MDWAS_Stakeholder Register.xlsx	State
VT Analytic Proposal Consolidated Response.pdf	Vendor

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

4 PROJECT INFORMATION

4.1 HISTORICAL BACKGROUND

The State's existing Medicaid Management Information System (MMIS) has been in operation since it was implemented in 1986. Over the past decade this 37-year-old legacy system has become increasingly difficult for the State to use to meet new and more complex reporting requirements, new data sources, and new analytical needs, often requiring hard coding changes. This existing system does not include a centralized data repository with robust reporting and analysis tools that contains all Medicaid-related claims and clinical data. It consists primarily of two separate environments, "Medicaid Management Information System Enhanced Vermont Ad Hoc (MMIS EVAH)" and "whMedicaid". In addition to these environments, Medicaid data queries and extracts are also performed against other systems of record where necessary. Eligibility and enrollment information, for example, is stored in the ACCESS mainframe system and replicated to a MS SQL data store, "whACCESS", for limited and specific reporting and extract purposes. Several years ago, DVHA began considering implementation of a new MMIS with modern capabilities.

The State attempted several unsuccessful procurements of a new MMIS enterprise system that would have multiple modules, but they would all be in one RFP with one contractor. As the project team got closer to selecting vendors in 2 RFPs, they realized in every case that the State would be making compromises. So, in discussion with CMS, and also realizing that the preference now is not to do that with one vendor but to develop multiple modules with multiple vendors, in 2015 the State began forming the conceptual model for the current procurement efforts.

This new model would employ 3 major modules:

- A Medicaid Data Lake (MDL) – to pull in data from multiple data sources, and then move those into a the ADW.
- An Analytics Data Warehouse (ADW), which would store information at a member (i.e., individual person) level and then use that as a source for the DAR.
- A Data Analytics and Reporting (DAR) platform, where the State and other authorized data scientists could use data from the ADW to perform research, analysis, and report creation.

The new ADW would be operated by the Vermont Health Information Exchange (VHIE) operator after CMS certification, as the planned approach is to reuse key existing VHIE components where possible. The VHIE operator as created by Vermont statute is Vermont Information Technology Leaders (VITL). During initial project development, the State approached VITL to be the State's sole-source vendor for creating the data warehouse. After a period of sometimes difficult conversations, the State determined that VITL did not have the capacity to create the ADW.

Coming as it did rather late in the project development process, this understanding required a change of strategy and a move toward procuring a data warehouse vendor through an open bidding process. Once

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

finished with certification and fully in a maintenance and operational (M&O) phase, the intent is to transfer operation of the warehouse to the VHIE operator.

The unitary project, known as the Medicaid Data Warehouse & Analytics Solution (MDWAS), would procure the 3 modules (MDL, ADW, and DAR) in two workstreams, still related as a single solution, but using 2 discrete Requests for Proposals (RFPs): the first for the MDL and DAR, the second for the ADW. **The present Independent Review considers only the MDL and DAR workstream – known collectively as MDLAS – and not the ADW workstream.**

The Sealed Bid **RFP for the Vermont Medicaid Data Lake and Data Analytics and Reporting Solution** was issued to prospective vendors on January 26, 2022, with responses due by March 8, 2022. Of the compliant responses received, 3 finalists were identified, following a properly documented scoring process. All 3 were invited to present demonstrations ("demos") to the project team.

The selected vendor, Deloitte Consulting, LLP, of Boston, MA. scored highest in all categories except price. Although their offer had the highest price, their proposal was closer than any other vendor to the State's vision for the project.

4.2 PROJECT GOAL

The MDL will ingest, integrate, and store Medicaid-related data and make it available to the ADW. The DAR solution will be the primary Business Intelligence (BI) platform for stakeholders to access and use aggregated Medicaid-related data to perform reporting and data analytics.

The MDLAS workstream will also include the development of a Sandbox environment that will enable data scientists to query and analyze Medicaid datasets from the ADW and other sources. The MDL and DAR must be scalable and extensible to (1)support potential future transformation initiatives of the State's Medicaid Management Information System (MMIS) modernization strategy, and (2) leverage additional data and information sources to meet the needs of the State's Medicaid Enterprise System (MES). The MDL and DAR components must be implemented as separate modules so that either module can be changed or replaced without requiring the other module to be changed or replaced.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

4.3 PROJECT SCOPE

4.3.1 IN-SCOPE

Table 6 - MDLAS Project In-Scope

#	Category	High-level Description of In-scope
1	Medicaid Financial Management Reporting	Reports, analytics, and business processes that support fiscal oversight, management, and planning.
2	Federal Reporting	Reports submitted directly to a federal agency or partner, including any supporting business process, analytics, or report to supply data for a federal report or response to a federal request for additional information except for Eligibility & Enrollment reports currently managed through the VHC solution.
3	Provider Enrollment and Management Reporting	Reports and analytics to support the oversight and management of provider eligibility & enrollment and business processes, such as monitoring provider eligibility & enrollment, location, specialty, licensing, background checks, and screenings.
4	Claims Management Reporting	Reports used to quantify encounter claims (i.e., shadow claims, zero-pay claims) and monitor the phases of the claim lifecycle (i.e., version, submission volume, suspense metrics, denial reasons).
5	Utilization Management Reporting	Reports, analytics, and business processes used to identify trends in utilization, support prior authorization reviews, and clinical case management.
6	Healthcare Quality Reporting	Reports used to evaluate the success of the State Medicaid program and its providers to help individuals and populations achieve desired health outcomes through the efficient delivery of health care services.
7	Management Dashboards	Comprehensive, at-a-glance management- or executive-level visualizations of key performance metrics of a program, process, or area.
8	Pharmacy Management Reporting	Reports and analytics used to track and trend drug utilization (including member and provider prescription/fulfillment activities), prior authorization requests, drug costs, and drug rebates.
9	T-MSIS File Creation and Research Support	Reports, analytics, and business processes that support the creation of the T-MSIS dataset and research.
10	Special Investigations Unit (formerly Program Integrity) Reporting and Analysis	Reports to complement existing SIU system used to ensure the overall integrity of the State's Medicaid benefits and programs through the prevention and identification of potential fraud, waste, or abuse.
11	Data Analytics Tools in support of Reporting	Data analytics tools leveraging the necessary architecture and enabling advanced data analytics and data visualization with the ability to provide accurate, near real-time data for querying, summarization, integration, and comprehensive analysis to reliably inform and bring value to our decisions.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

12	Claims and clinical data for Interoperability Service	As required by CMS Interoperability, data support will be made available in Fast Healthcare Interoperability Resources (FHIR) format.

4.3.2 OUT-OF-SCOPE

Table 7 - MDLAS Project Out-of-Scope

#	Item or Category	Justification
1	Modifications to current-state business processes that are not required to deliver MDLAS scope.	The MDLAS scope of analysis is limited to the analytics, reporting, and business processes necessary to support the oversight and management of the State's Medicaid program and fulfillment of state and federal reporting obligations.
2	Federal Tax Information (FTI) and Payment Card Information (PCI).	Achieving security and privacy compliance beyond NIST 800-53 and MARS-E controls would involve meeting several complex and auditable requirements. It is expected that a future project to extend the solution to include FTI/PCI would be readily accomplished.
3	Decommissioning current operational systems.	The MDWAS project will replace State user reliance and use of some systems (e.g., MMIS EVAH) for Medicaid data; however, those systems may continue to be needed to maintain the business and reporting processes of external stakeholders (e.g., the State's fiscal agent).
4	Replacing current-state Special Investigations Unit (SIU) Case Management solutions.	The solution will include the analytics tools and reports to support SIU but will not replace the current-state case management solution.
5	Care Management data sourced from the Accountable Care Organization (ACO).	Care Navigator is sunsetting in 2023 and has optional participation in 2022.
6	Replacing current-state solution for administering, analyzing, or presenting the findings of the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Survey.	Administering, analyzing, and presenting the CAHPS Survey is a separately contracted service.
7	Supporting electronic fund transfers back to the State and temporary suspension of future payments to providers.	Managing and withholding payments are responsibilities of the State's fiscal agent.
8	Maintenance and Operations for the system in existence at the start of this project.	Although this project may fund modifications to current systems, Maintenance & Operations (M&O) costs for MMIS, HIE, etc. will not be included in this project's DDI. In addition, these modifications are only for Medicaid program benefit.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

4.3.3 MAJOR DELIVERABLES

Table 8 - Major Deliverables

Deliverable
MDL Milestone 1: Project Initiation
MDL Milestone 2: DDI Phase
MDL Milestone 3: DDI Go-Live
MDL Milestone 4: CMS Certification
MDL M&O Year 1 (note 11 Months)
MDL M&O Year 2
MDL M&O Year 3
MDL M&O Year 4
MDL M&O Year 5
MDL M&O Year 6
DAR Milestone 1: Project Initiation
DAR Milestone 2: DDI Phase
DAR Milestone 3: DDI Data Go-Live
DAR Milestone 4: DDI Reporting Go-Live
DAR Milestone 5: CMS Certification
DAR M&O Year 1
DAR M&O Year 2
DAR M&O Year 3
DAR M&O Year 4
DAR M&O Year 5

4.4 PROJECT PHASES, MILESTONES, AND SCHEDULE

Note: The table below contains start and end dates as currently listed in the draft contract. Each will shift appropriately starting from the actual date of contract execution.

Table 9 – Project Phases, Milestones, and Schedule

Project / Contract phases	Duration	Start Date	End Date
MDL Milestone 1: Project Initiation	4 months	4/24/2023	8/24/2023
DEL-1: Project Management Plan			
DEL-2: Project Management Repository			
DEL-3: Risk Management Plan (RMP)			
DEL-4: Business Analysis Plan (BAP)			
DEL-5: Change Management and Modification Pool Plan			
DEL-6: System Testing Plan (STP)			

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

DEL-7: Quality Management Plan (QMP)			
DEL-8: Communication Plan (ComMP)			
MDL Milestone 2: DDI Phase	6 months	4/24/2023	10/24/2023
DEL-9: Business Continuity, Cyber Incident Response, and Disaster Recovery Plan (BC/CIR/DR)			
DEL-10: System Security Plan (SSP)			
DEL-11: Business Design / System Design Document			
DEL-12: Implementation Plan			
DEL-13: Data Management Strategy (DMS)			
DEL-14: Data Integration / Interface Design and Control Document (DIID&CD)			
DEL-15: Release Management Plan (RelMP)			
MDL Milestone 3: DDI Go-Live	Approx. 8 months	6/1/2023	1/24/2024
DEL-16: Certification Management Plan (CMP)			
DEL-17: Operating Procedures Guide (OPG)			
DEL-18: System Maintenance Support Plan (SysMSP)			
DEL-19: Performance Management Plan (PerfMP)			
DEL-20: Turnover and Closeout Plan (TO&COP)			
MDL DDI Implementation milestone			
MDL Milestone 4: CMS Certification	Approx. 9 months	4/24/2025	1/26/2026
MDL M&O Year 1 (note 11 Months)	Approx. 11 months	1/24/2024	12/23/2024
MDL M&O Year 2	12 months	12/24/2024	12/23/2025
MDL M&O Year 3	12 months	12/24/2025	12/23/2026
MDL M&O Year 4	12 months	12/24/2026	12/23/2027
MDL M&O Year 5	12 months	12/24/2027	12/23/2028
MDL M&O Year 6	12 months	12/24/2028	12/23/2029
DAR Milestone 1: Project Initiation	4 months	4/24/2023	8/24/2023
DEL-1: Project Management Plan			
DEL-2: Project Management Repository			
DEL-3: Risk Management Plan (RMP)			
DEL-4: Business Analysis Plan (BAP)			
DEL-5: Change Management and Modification Pool Plan			
DEL-6: System Testing Plan (STP)			
DEL-7: Quality Management Plan (QMP)			
DEL-8: Communication Plan (ComMP)			
DEL-21: User Training Plan (UTP)			
DAR Milestone 2: DDI Phase	12 months	4/24/2023	4/19/2024

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

DEL-9: Business Continuity, Cyber Incident Response, and Disaster Recovery Plan (BC/CIR/DR)			
DEL-10: System Security Plan (SSP)			
DEL-11: Business Design / System Design Document			
DEL-12: Implementation Plan			
DEL-13: Data Management Strategy (DMS)			
DEL-14: Data Integration / Interface Design and Control Document (DIID&CD)			
DEL-15: Release Management Plan (RelMP)			
DAR Milestone 3: DDI Data Go-Live	Approx. 16 months	8/1/2023	12/24/2024
DEL-16: Certification Management Plan (CMP)			
DEL-17: Operating Procedures Guide (OPG)			
DEL-18: System Maintenance Support Plan (SysMSP)			
DEL-22: Help Desk Plan (HDP)			
DAR DDI Data implementation milestone			
Conversion of 10 years of data			
DAR Milestone 4: DDI Reporting Go-Live	Approx. 11 months	6/1/2024	4/24/2025
DEL-17: Operating Procedures Guide (OPG) updates			
DEL-18: System Maintenance Support Plan (SysMSP) updates			
DEL-19: Performance Management Plan (PerfMP) updates			
DEL-20: Turnover and Closeout Plan (TO&COP) updates			
DEL-22: Help Desk Plan (HDP) updates			
Sandbox implementation			
DAR Milestone 5: CMS Certification	Approx. 9 months	4/24/2025	1/26/2026
DAR M&O Year 1	12 months	12/24/2024	12/23/2025
DAR M&O Year 2	12 months	12/24/2025	12/23/2026
DAR M&O Year 3	12 months	12/24/2026	12/23/2027
DAR M&O Year 4	12 months	12/24/2027	12/23/2028
DAR M&O Year 5	12 months	12/24/2028	12/23/2029

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

5 ACQUISITION COST ASSESSMENT

Table 10 - Acquisition Costs

Acquisition Costs	Cost	Comments
Hardware Costs	**$0.00**	*No hardware costs to State*
Software Costs	**$2,782,182.86**	*M&O during implementation*
Implementation Services	**$24,400,761.32**	*To MDLAS vendor*
State Personnel	**$2,122,579.05**	*See attach. 3, Cost Spreadsheet*
Professional Services (e.g., Project Management, Enterprise Architecture, Ind. Review, etc.)	**$1,884,902.43**	*See attach. 3, Cost Spreadsheet*
Total Acquisition Costs	**$31,190,425.67**	

5.1 COST VALIDATION:

Describe how you validated the Acquisition Costs.

Implementation services are as agreed in the draft contract. State personnel and Professional services are actuals already accrued combined with estimates for the remainder of implementation.

5.2 COST COMPARISON:

How do the above Acquisition Costs compare with others who have purchased similar solutions (i.e., is the State paying more, less or about the same)?

It is not possible to accurately compare the cost of this solution to what different states are paying, since there is so much variance among states in the structure, scope, and purpose of MMIS systems in each. To get a more useful comparison, we began with the rate card the vendor supplied as a requirement of the Bidder Response Form in the RFP. We chose 5 of the most “expensive” IT-related job titles (on the premise that they would have major roles in the implementation process), then took the first-year hourly rate for each (“Hourly”). We multiplied this by a 40-hour, 52-week year (“Yearly”). From the Salaries database of Indeed.com, we found the high-end average rate (to compare with the quality of personnel required of the vendor) for each job title in Massachusetts (“Mass.”), as that is where the

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

MDLAS vendor is located. We then adjust this rate by multiplying by 1.3 (to adjust to a fully-loaded salary) and multiplied that by 2.5 to approximate a common markup figure for consultancy firm rates ("Adjusted for Consultancy Rate").

This is admittedly a rough calculation, but it does give us some basis for comparison. The final column ("Vermont % of Mass. Rate") compares the "Yearly" cost to the "Adjusted for Consultancy Rate" cost to compare the price offered to Vermont to the high-end average rate in the vendor's home state, as a percentage:

Rate Card Title	Hourly	Yearly	Mass.	Adjusted for Consultancy Rate	Vermont % of Mass. Rate
Project Director	$290.00	$603,200.00	$192,389.00	$625,264.25	96.5%
Data Scientist - Level 3	$275.00	$572,000.00	$176,329.00	$573,069.25	99.8%
Program Manager	*$280.55*	*$583,544.00*	*$177,572.00*	*$577,109.00*	*101.1%*
Enterprise Architect	*$250.00*	*$520,000.00*	*$247,711.00*	*$805,060.75*	*64.6%*
Solution Architect	*$225.00*	*$468,000.00*	*$204,753.00*	*$665,447.25*	*70.3%*

The percentage difference ranged from 64.6% to 101.1%, and **the average comparison rate was 86.5%.**

From this, we estimate that Vermont is paying from somewhat less to about the same as comparable customers.

5.3 COST ASSESSMENT:

Are the Acquisition Costs valid and appropriate in your professional opinion? List any concerns or issues with the costs.

The acquisition costs are valid, as demonstrated in Attachment 1 – Cost Spreadsheet in light of the comments above, and they are appropriate for the personnel the vendor is providing, as estimated by the above comparison.

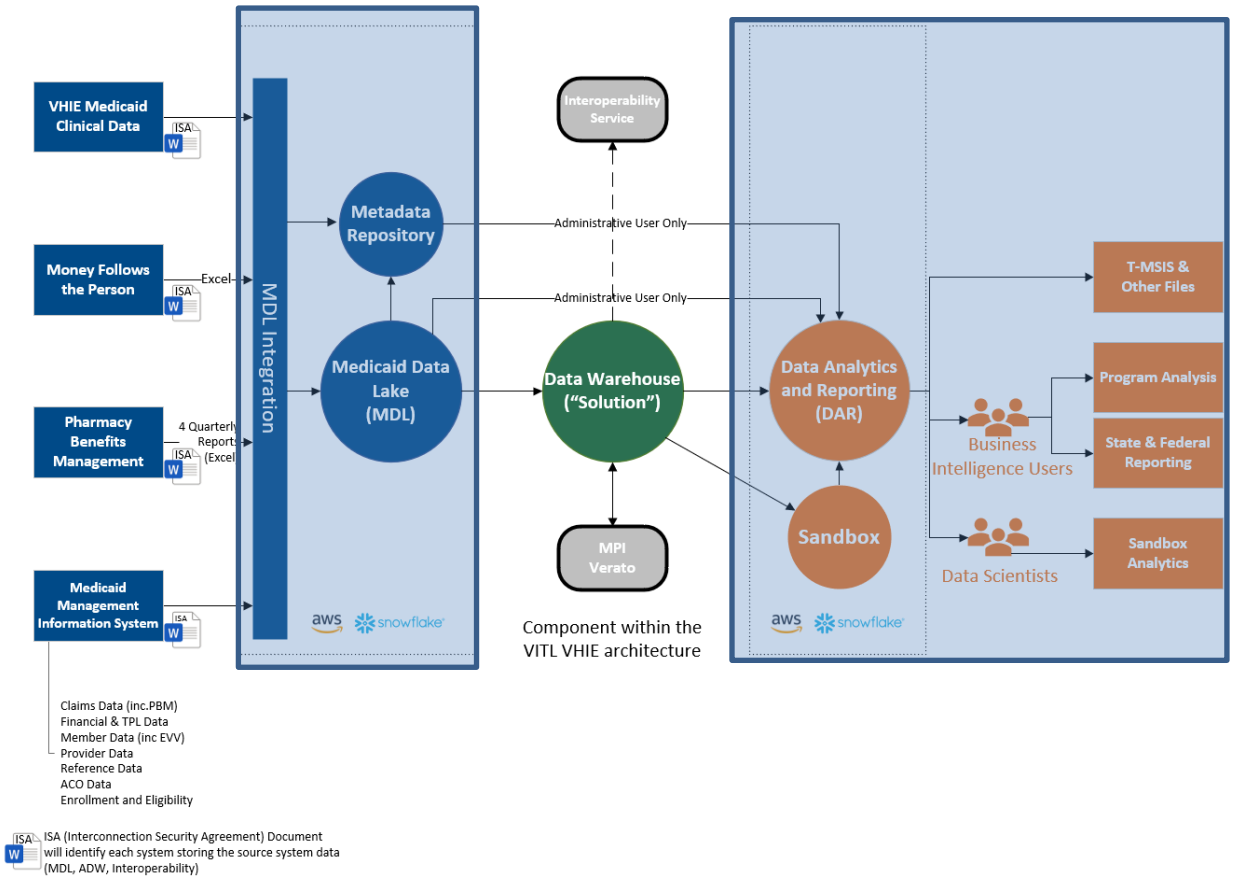
Additional Comments on Acquisition Costs:

None

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

6 TECHNOLOGY ARCHITECTURE REVIEW

The following diagram is excerpted from the State's Architecture Vision document for the MDWAS project, provided by the ADS Enterprise Architecture division:



The shaded blue areas represent the components implemented and operated as part of the MDLAS workstream. There are two modular components:

- The Medicaid Data Lake (MDL) component
- The Data Analytics and Reporting (DAR) component

The MDLAS components are Software-as-a-Service (SaaS) applications, cloud hosted in Amazon Web Services (AWS) GovCloud, a highly secure environment.

The components are modular in the sense that they are effectively free-standing applications. Either one is designed to be replaceable without the other having to be changed or replaced. They will both be implemented by the MDLAS vendor, but in theory they could have been implemented by separate vendors (although the State does see some advantages in having the same vendor implement both). Each of the components will have its own separate database.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

The MDL receives data from a variety of data sources which could change or increase in number in the future. The MDL will ingest, integrate, and store Medicaid-related data and make it available to the ADW.

The DAR accesses data from the ADW for analysis and reporting, using a variety of tools, via a data mart with a variety of authorized users.

The data platforms for both the MDL and the DAR will be implemented using Snowflake, a multi-tenant cloud-agnostic columnar database configured with Continuous Data Protection (CDP) that includes a comprehensive set of features that help protect data stored in Snowflake against human error, malicious acts, and software or hardware failure. At every stage within the data life cycle, Snowflake enables the data to be accessible and recoverable in the event of accidental or intentional modification, removal, or corruption. The database software supports Time Travel, whereby data can be restored to points in time in the past, along with other configurable failsafe options. The ingested data stored in the Medicaid Data Lake and DAR data marts are encrypted using AES-256 strong encryption along with files that may be prepared to support data loading and unloading operations. The State is familiar with, and has previous experience with, Snowflake-based applications.

Snowflake's architecture is a hybrid of traditional shared-disk and shared-nothing database architectures. Similar to shared-disk architectures, Snowflake uses a central data repository for persisted data that is accessible from all compute nodes in the platform. But similar to shared-nothing architectures, Snowflake processes queries using MPP (massively parallel processing) compute clusters where each node in the cluster stores a portion of the entire data set locally. This approach offers the data management simplicity of a shared-disk architecture, but with the performance and scale-out benefits of a shared-nothing architecture.

Snowflake runs completely on cloud infrastructure and separates out the data storage and processing layers. Data from source systems, once loaded into the snowflake tables, can be compressed up to 70% - thereby adding overall cost efficiencies. The processing layer can be scaled up and down depending upon the data processing needs. Consequently, the State will not have to purchase more computing power than it needs, nor will it have insufficient power for intensive operations.

Note that the DAR does not access the MDL directly (some administrative connections will be necessary, but Medicaid data will not traverse these connections). The ADW workstream will need to be implemented before the system as a whole is operational. The ADW implementation is anticipated to begin when the MDLAS is ready for production.

Although implementation of the AWS is not in-scope for the present workstream, the project team is aware from work on the MMIS Interoperability Project that the data detail in the VHIE is at the (medical) provider level while the MDWAS is building a member level (individual Medicaid recipient) data record, and this is relevant to design of the MDLAS. If VITL sends the data as-is, the work to create a member level extract will need to be done in the MDLAS. This will likely require an increase in estimated storage as well as further development. We identified this as a risk **_RISK_ID# _R3_**. To mitigate, the State will

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

work with VITL to understand their limitations on creating a member detail level extract. If such an extract is not possible, the technology team will explore adjustments to the MDLAS implementation.

We concur with this approach.

The system as it would be implemented is state-of-the-art, modular and robust. It is highly aligned with both CMS and State strategic directions and with State technology preferences. It is scalable, resilient, designed to be updated as needed, and likely to deliver the benefits expected.

6.1 STATE'S ENTERPRISE ARCHITECTURE GUIDING PRINCIPLES

6.1.1 A. ASSESS HOW WELL THE TECHNOLOGY SOLUTION ALIGNS WITH THE BUSINESS DIRECTION

The proposed MDLAS solution would enable a significant advancement of DVHA efficiency and capability, transitioning from the existing legacy applications to a modular, state-of-the-art, unitary data analytics and reporting platform, aggregating data from disparate sources. This represents a business direction that is in line with AHS increasing the need and desire to fully utilize new and available data to the benefit of the Vermont Medicaid program, as well as aligning with technology directions and preferences promulgated by CMS.

6.1.2 B. ASSESS HOW WELL THE TECHNOLOGY SOLUTION MAXIMIZES BENEFITS FOR THE STATE

Within one year of go-live, the solution will provide reporting and analytics to assess progress on Medicaid Enterprise System (MES) established outcomes-based measures. These measures provide the basis for State policy decision-making to maintain and improve access to and delivery of Medicaid Services to Vermont residents.

An important function of the final project will be combined Medicaid claims and non-claims data and VHIE clinical data available in the DAR solution, allowing stakeholders and business users for the first time to analyze and report on aggregated Medicaid data from a single location.

6.1.3 C. ASSESS HOW WELL THE INFORMATION ARCHITECTURE OF THE TECHNOLOGY SOLUTION ADHERES TO THE PRINCIPLE OF INFORMATION IS AN ASSET

The data lake architecture accesses existing data streams (e.g., MMIS data, VHIE clinical data, pharmacy benefits information, claims data, etc.) aggregates and feeds that data to the warehouse (when it is operational), from which it can be used for analysis, reporting, and understanding. When both workstreams have been implemented, the State will achieve a much more connected and holistic view of the information it generates from a large variety of related, but not necessarily technologically connected, data processes.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

6.1.4 D. ASSESS IF THE TECHNOLOGY SOLUTION WILL OPTIMIZE PROCESS

The solution will optimize State business processes as described in the statements immediately above, but in addition these processes will be boosted initially by a reduction in frustration with the existing systems and the ability to respond to new federal and State reporting requirements without resorting to new code development.

6.1.5 E. ASSESS HOW WELL THE TECHNOLOGY SOLUTION SUPPORTS RESILIENCE-DRIVEN SECURITY.

The concept of resilience-driven security rests on the notion that implementers and operators should not only evaluate security in terms of the nature and severity of external threats, but also should reduce the vulnerability of their systems to threats as yet unknown. In the present case, this sort of security employs the security practices as described in **Section 11, Security Assessment, *below***; as well as the State's architectural preferences for open systems, modular code, iterative testing during implementation, cloud hosting, and third-party testing of implemented systems.

6.2 SUSTAINABILITY

The proposed solution is a pure, Software-as-a-Service (SaaS) platform. Aside from web browser-equipped workstations and adequate network access, no additional hardware is required to access the system for either State or other authorized users. State analysts use existing business intelligence tools such as Tableau and PowerBI. Cloud hosting uses advantages of scale to reduce environmental impact. Taken together, these characteristics help to ensure long-term sustainability, as the State has minimal capital investment and maximum flexibility should its needs change in the future.

6.3 HOW DOES THE SOLUTION COMPLY WITH THE ADS STRATEGIC GOALS ENUMERATED IN THE AGENCY OF DIGITAL SERVICES STRATEGIC PLAN 2022-2026?

6.3.1 IT MODERNIZATION

Replacement of 30 legacy applications with State-preferred enterprise platforms

While this project does not have decommissioning of any existing systems in-scope, it will in practice replace core data analysis and reporting functions currently employing the MMIS (EVAH and whMedicaid). However, those systems may continue to be needed to maintain the business and reporting processes of external stakeholders (e.g., the State's fiscal agent).

6.3.2 CYBERSECURITY & DATA PRIVACY

All Dashboards and analytics available through PowerBI by 2024

The proposed project employs PowerBI as a data analytics tool.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

6.3.3 VERMONTER EXPERIENCE

The MDLAS does not employ any public-facing interfaces. In that sense the Vermont public does not experience the system directly. However, it is deeply connected to the delivery of Medicaid Services and the improvement thereof, so in that sense it improves the experience of Vermont Medicaid recipients.

6.3.4 FINANCIAL TRANSPARENCY

Further reduce the number of applications through consolidation and elimination. This will result in lower IT maintenance costs, purchasing costs, licensing costs and employee costs over the life cycle.

The present solution is essentially a modernization and consolidation project. While it does not exactly map onto the statement above, it can be expected to realize some of the objectives, including lowering IT maintenance costs by facilitating more efficient and effective use of State personnel to perform data analysis and reporting tasks instead of developing workarounds for an under-performing legacy system. We think it is reasonable to expect that IT maintenance costs for the legacy systems would be lessened for similar reasons. (The net impact of the project, however, is a tangible cost to the State to realize significant benefits.)

6.4 COMPLIANCE WITH THE SECTION 508 AMENDMENT TO THE REHABILITATION ACT OF 1973, AS AMENDED IN 1998

The draft contract includes this Global Administrative Requirement (ID 14242):

> *All user interfaces must comply with Section 508 Standards (2017), WCAG 2.0 Level A and AA Success Criteria. Contractor shall identify and review any user interface(s) that do not comply or cannot comply with Section 508 Standards with the State with potential remediation plans which the State will use to decide if a compliance exception or remediation plan is accepted.*

The vendor states in their proposal that “all user interfaces will align with Section 508 requirements to confirm comparable access to people with disabilities,” and “user interfaces will be assessed for 508 compliance.” Additionally, the Identity and Access Management (IAM) component for the solution provides a 508-compliant administrative interface for security administrators.

We have no concerns regarding 508 compliance as demonstrated at this point in the vendor engagement process.

6.5 DISASTER RECOVERY

The AWS GovCloud environment is highly recoverable by design.

The State requires the vendor to provide, test, update, maintain, and submit, for State review and approval, a Business Continuity (BC), Disaster Recovery (DR), and Cyber Incident Response (CIR) Plan

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

that is aligned to NIST CP-2, NIST-800-53, standards[2] and meets all Federal (CMS) Standards and the associated Risk Management Handbook Procedures (CMSCISO2 4vIIIstd4.4 or its replacement) as well as State standards on an annual basis or more frequently as directed by the State.

The vendor will work with the State to provide a plan aligning with those standards and to outline the steps and processes necessary to recover the Solution and coordinate recovery activities across various other systems, stakeholders, and diverse providers to recover systems in an agreed timeframe so that impact of an unplanned outage to normal business operations can be minimized.

The draft contract defines the Recovery Time Objective (RTO) and Recovery Point Objective (RPO) timeframes for the production environment as follows:

- Recovery Time Objective = 24 hours
- Recovery Point Objective = 8 hours

The vendor appears well-versed in the planning and procedures of disaster recovery. They have implemented similar plans for other states. We have no concerns in this area.

6.6 DATA RETENTION

The draft contract explicitly requires the retention of data and documentation for a minimum of ten years, in compliance with State data retention policies and needs. Aside from statutory requirements, trend analysis and other data analysis requires access to historical data. Practically stated, the system is capable of unlimited data storage. The draft contract includes agreed pricing should the State desire additional storage space.

6.7 SERVICE LEVEL AGREEMENT

6.7.1 WHAT ARE THE POST IMPLEMENTATION SERVICES AND SERVICE LEVELS REQUIRED BY THE STATE?

The draft contract requires that “All systems are available 24/7, 365 days a year, 99% of the time, measured and reported weekly (Sunday through Saturday), except for scheduled downtime, natural disaster and other force majeure, or as agreed to in the Contract.” The State has also negotiated agreement on service levels for:

- Plan of Action and Milestones (POA&M) Remediation
- Incident Notification
- Root Cause Analysis/Debrief
- Disaster Recovery RTO and RPO

[2] The draft contract adds MARS-E-2.2 to this list, but as MARS-E-2.2 has been de-scoped from this project, it will be deleted from the contract.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

- Incident Restoration

All these are consistent with State preferences and expectations as we understand them.

6.7.2 IS THE VENDOR PROPOSED SERVICE LEVEL AGREEMENT ADEQUATE TO MEET THOSE NEEDS IN YOUR JUDGMENT?

(*Note: This explanation refers to the SLA in the draft contract, and not to any previously proposed SLA from the vendor*.) The agreed SLA meets all State requirements, is thoroughly detailed, and defines reporting responsibilities and remediation times. We are very pleased to read that it also includes a table and process for Service Level Credits, to compensate for any period when the agreed targets are not met.

Taken as a whole, the SLA is very well crafted.

6.8 SYSTEM INTEGRATION

6.8.1 IS THE DATA EXPORT REPORTING CAPABILITY OF THE PROPOSED SOLUTION CONSUMABLE BY THE STATE?

Yes, and this is the primary objective of this project – to give the State and authorized users a better toolset for analyzing data and generating reports for external and internal use.

6.8.2 WHAT DATA IS EXCHANGED AND WHAT SYSTEMS (STATE AND NON-STATE) WILL THE SOLUTION INTEGRATE/INTERFACE WITH?

See the diagram at the beginning of **Section 6, *above***.

Data sources and content for the MDL include:

- VHIE Medicaid Clinical Data
- Money Follows the Person
- Pharmacy Benefits Management
- Medicaid Management Information System (MMIS)
    - Claims Data (incl. Pharmacy Benefits Manager (PBM))
    - Financial & TPL Data
    - Member Data (incl. Electronic Visit Verification (EVV))
    - Provider Data
    - Reference Data
    - Accountable Care Organization (ACO) Data
    - Enrollment and Eligibility Data

The State's existing integration platform, Mulesoft, was proposed by the vendor as one way to interface to data sources. Mulesoft is costly to implement and is not necessary for the MDLAS at this time. Most

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

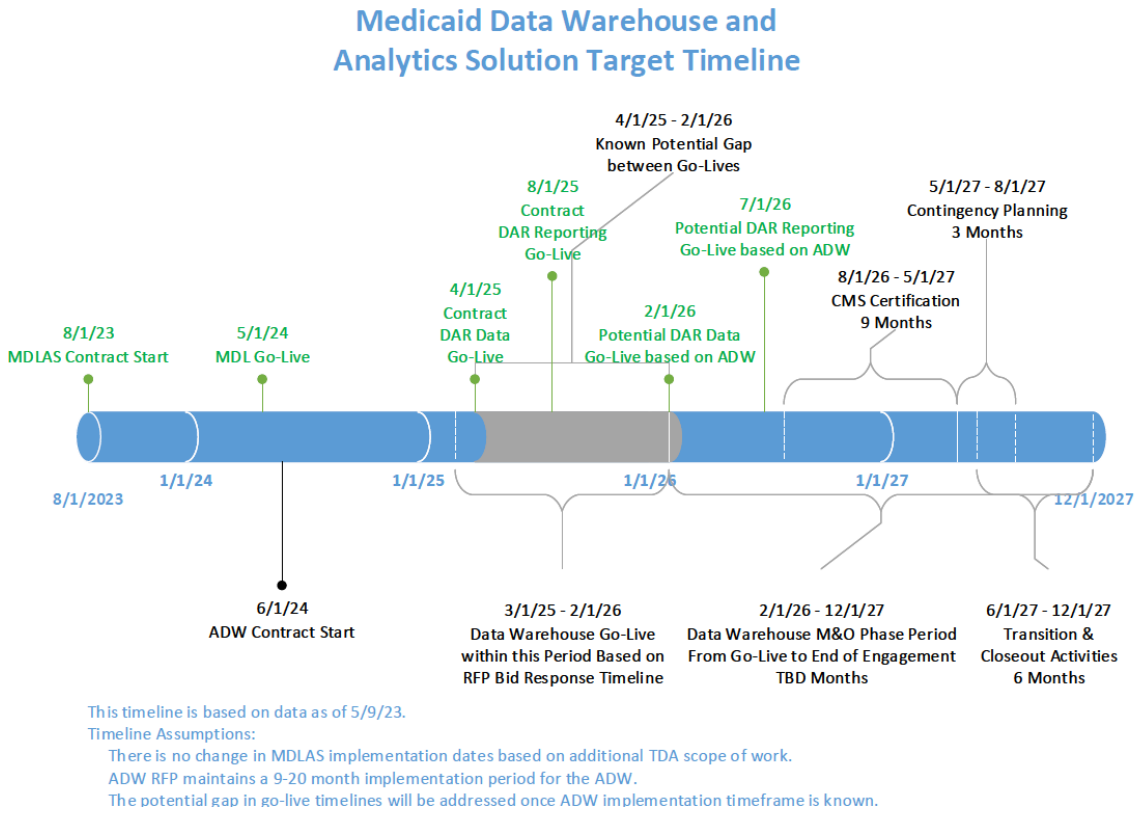
of the data sources for the MDL will extract via flat files. This type of “simple” file transfer is not considered to be the best use of Mulesoft. The vendor’s proposed system has a number of options already in place for data receipt. Consequently, the State has decided not to use Mulesoft to interface to data sources in the MDLAS at this time.

Additional Comments on Architecture:

none

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

7 ASSESSMENT OF IMPLEMENTATION PLAN



The diagram above is extracted from the MDWAS project Charter. It includes both MDLAS and ADW timelines, as well as CMS Certification and Contingency Planning, so it can be a little confusing to read. The green text refers to the MDLAS implementation. Here, it is useful to remember that the MDLAS solution cannot completely operate before the ADW is ready for data (although it can and would be thoroughly tested before that time).

- MDL and DAR implementations begin at the contract start date.
- Target completion date for MDL is 9 months from contract execution, not including CMS certification.
- The completion date for DAR is 24 months from the contract start date, not including CMS certification.
- The CMS certification process takes place after the entire MDWAS system is functioning.

At the time of this writing, the ADW procurement is not complete and therefore the implementation timeline for the ADW has not been firmly set. The target date for ADW contract start date is 20 months after MDLAS contract start date. The implementation period maintained in the ADW RFP is 9 to 20 months. Consequently, there is the possibility of a "gap" in timelines. We identified this as a risk **_RISK_ID# _R7_**. The State responded:

> *The State is aware of this risk and reflected it on the overarching MDWAS project timeline. Dates shifted due to the procurement strategy decision resulting in a MDLAS Technical Design*

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Architecture (TDA) deliverable to inform the ADW RFP. The State is working to update the ADW RFP and will revisit the maximum period of implementation prior to posting, understanding reduced timeline will have increased costs. The length of gap, if any, will be determined after a vendor is selected and contract dates solidified for the ADW module. Discretionary funds are available on the MDLAS contract to account for some delay if required, but more significant delays may require a contract amendment.

The response shows that the State is sufficiently focused on this risk to support a reasonably good outcome, so we concur.

The vendor employs an Agile/hybrid model. The Agile sprints are informed by the contract requirements, stated in the form of User Stories (common for Agile development). The implementation deliverables are described in fairly extensive detail in the draft contract, and the implementation is defined in phases.

The multiple data sources for the MDLAS are maintained by a variety of vendors. They must work together closely throughout the project duration to ensure project scope, schedule and budget remains intact. Collaboration and communication must remain top priorities for overall project success. Failure to align vendors may result in project schedule delays, rework, missed work or other critical project issues. We identified this as a risk **_RISK_ID# _R2_**. The State responds that they will MITIGATE this risk: "There are no current contracted vendors aside from the selected MDLAS vendor. This will become an open risk after MDLAS vendor kickoff. Vendors are aware this is coming and when the State expects them to fully engage. The team must set expectations up front with any involved vendors. As required by their project role, vendors must be aware of both workstreams' scopes and the interdependencies between them."

We concur.

After assessing the Implementation Plan, please comment on each of the following.

7.1 THE REALITY OF THE IMPLEMENTATION TIMETABLE

The implementation timetable is sufficiently detailed and tied to deliverables. (See Table 9 – Project Phases, Milestones, and Schedule, *above*.) The vendor is experienced with similar implementations and is adequately staffed. The State team is competent, enthusiastic, and tracking risks (see below).

We assess the implementation timetable to be realistic.

7.2 READINESS OF IMPACTED DIVISIONS/ DEPARTMENTS TO PARTICIPATE IN THIS SOLUTION/PROJECT

(Consider current culture, staff buy-in, organizational changes needed, and leadership readiness).

Like other AHS projects we have seen, this project is well-designed, managed, documented, and supported. This is due both to the skill and dedication of State staff and the context of CMS oversight.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

DVHA and ADS staff, and outsourced staff, appear to be working together very efficiently. There is a lot of knowledge transfer and appropriate knowledge redundancy; a lot of confidence and cooperation; a demonstrated ability to change direction when appropriate; and an enthusiasm for the final product.

Nearly all the risks listed in the present Review were previously identified by the team in their formal risk register. That register is up-to-date, well maintained, and informs ongoing discussions. We commend the project team and project manager for this competent and self-aware approach to project risk.

The implementation will make significant demands on already very busy staff. If State staff cannot maintain pace with the vendor, the project could be delayed. This would impact the go-live date and require contract amendment. We identified this as a risk **_RISK_ID# _R6_**. The State responded with the following MITIGATION:

> *The State has completed modeling of staff requirements. The State continues to have dialogue around future staff requirements and has been planning accordingly.*

We see appropriate attention paid to this risk, and so we concur with the response.

7.3 DO THE MILESTONES AND DELIVERABLES PROPOSED BY THE VENDOR PROVIDE ENOUGH DETAIL TO HOLD THEM ACCOUNTABLE FOR MEETING THE BUSINESS NEEDS IN THESE AREAS:

7.3.1 A. PROJECT MANAGEMENT

The following project management deliverables are required by the draft contract:

Project Management Deliverables
1. PROJECT MANAGEMENT PLAN, **consisting of:**
A) Communication Management Plan.
B) Schedule Management Plan.
C) Risk Management Plan.
D) Action Item, Issue, Decision and Lessons Learned Management Plans.
E) Change Management Plan.
F) Quality Management Plan.
Test Plans
Test cases and expected results
Test results
Final test summary report
G) Resource Management Plan.
2. MDLAS PROJECT SCHEDULE
A) Tasks to be performed with associated Work Breakdown Structure (WBS)
B) Deliverables to be developed, submitted, reviewed, and approved
C) Resources and teams assigned to each task

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

D)	Work efforts, duration, start, and finish dates defined for each task
E)	Task dependencies, where appropriate
F)	Percent completion for all tasks
G)	Key phase, activity, and deliverable milestones
H)	Integration tasks from related stakeholders that have a direct impact and/or dependency with the MDLAS project
3. DESIGN, DEVELOPMENT, and IMPLEMENTATION PLAN	

Each deliverable is accompanied by a detailed definition. The deliverables are appropriate to a project of this size. They are consistent with the State's usual expectations for large projects and contracts. They are adequate to ensure sufficient project management detail for the State.

The Project Manager identified in the draft contract is appropriately skilled and experienced. This individual is named as a Key Project Staff member for the vendor.

7.3.2 B. TRAINING

The requirements in the draft contract, in the form of User Stories, identify the specific trainings the State expects. They are quite detailed and will form a "roadmap" to training that can be used by the vendor.

The vendor's Training and Documentation Manager is also named as a Key Project Staff member for the vendor.

7.3.3 C. TESTING

The vendor is required to provide a Master Test Plan outlining the testing methodology for

- Component
- System
- Regression
- Integration
- Parallel
- Performance
- Load
- User Acceptance Testing (UAT)
- Converted data validation

This is a reasonably comprehensive list. There is a separate environment for UAT, and the User Stories will provide a good basis for UAT design.

The vendor will collaborate with the State's Quality Assurance and Testing team throughout the project lifecyle. All Test plans must be reviewed and approved by the State.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

7.3.4 D. DESIGN

See 7.3.6, below, for deliverables relevant to the design phase. In addition, numerous requirements/user stories listed in Exhibit 1 of the draft contract specifically enumerate design requirements, e.g., a data architecture design, enabling of efficient loading and querying of high volumes of data, etc.

The State, with the assistance of the assigned Business Analyst, has done an admirable job of defining in quite some detail the specific design needs of the State. This should enable the project to "hit the ground running" at the commencement of DDI.

7.3.5 E. CONVERSION (IF APPLICABLE)

During the contract negotiations, the State increased the scope of the data conversion requirement of the project from 7 to 10 years of historical data. Both the State and the vendor are very experienced in conversion of data for new projects. In the present project, the State has a very deep understanding of the structure and content of legacy data. We would not expect any major hurdles in this phase of the project.

7.3.6 F. IMPLEMENTATION PLANNING

The deliverables for implementation planning (the "Design, Development, and Solution Implementation Phases") are listed in the table below:

Implementation Deliverables
Project Management Plan (PMP)
Project Management Repository (PMR)
Risk Management Plan (RMP)
Business Analysis Plan (BAP)
Change Management and Modification Pool Plan (ChMP)
System Testing Plan (STP)
Quality Management Plan (QMP)
Communication Plan (ComMP)
Business Continuity, Cyber Incident Response, and Disaster Recovery Plan (BC/CIR/DR)
System Security Plan (SSP)
Business Design / System Design Document (BD/SDD)
Implementation Plan (ImP)
Data Management Strategy (DMS)
Data Integration / Interface Design and Control Document (DIID&CD)
Release Management Plan (RelMP)
Certification Management Plan (CMP)
Operating Procedures Guide (OPG)

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

System Maintenance Support Plan (SysMSP)
Performance Management Plan (PerfMP)
Turnover and Closeout Plan (TO&COP)
User Training Plan (UTP)
Help Desk Plan (HPD)

Note: All deliverables in the table above are applicable to both MDL and DAR, with the exception of the Help Desk Plan (HPD), which is only applicable to DAR.

These deliverables are repeated for each phase of the implementation. They comprise an excellent vehicle for structured communication throughout the project. The reiteration at each phase should help both vendor and State to maintain useful communication and collaboration through a very long and complex project.

7.3.7 G. IMPLEMENTATION

The MDLAS Project Schedule, part of the project management deliverables, details the deliverables to be developed, submitted, reviewed and approved at each phase of the project.

Taken as a whole, the deliverables listed in the draft contract, in all their many forms (requirements/use stories; project management deliverables; implementation deliverables) are comprehensive, sufficiently detailed at this stage of the project, and very likely to guide the vendor to fulfill the needs of the State.

We have no concerns.

7.4 DOES THE STATE HAVE A RESOURCE LINED UP TO BE THE PROJECT MANAGER ON THE PROJECT? IF SO, DOES THIS PERSON POSSESS THE SKILLS AND EXPERIENCE TO BE SUCCESSFUL IN THIS ROLE IN YOUR JUDGMENT?

Yes, the current project manager is a certified and experienced professional. We have witnessed her work on this and a previous project. She is highly efficient and respected by the project team and leadership. We have no concerns in this area.

Additional Comments on Implementation Plan:

The MMIS Independent Verification and Validation (IV&V) agency engaged by the State noted that "Demonstrating a level of data governance has been a requirement from CMS for certification of the data warehouse from the project's onset. The current project team, leadership, and CMS have recognized that having a data governance structure is a critical success factor (CSF) for the project However, with the Medicaid Data Lake and Data Warehouse procurement acceleration, IV&V sees the need for increased urgency and emphasis on implementing data governance processes and structure ahead of DDI for these projects." And "If a data governance structure is not put into place as part of Medicaid Data Warehouse and Analytic Solution (MDWAS) Design, Development, and Implementation (DDI), the State runs the risk of not having a completely certifiable system based on CMS requirements. In addition, implementing the various MDWAS components will have added difficulty without the

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

guidance of a data governance strategy which would put the entire project at risk." We identified this as a risk **_RISK_ID# _R1_.** The State responds with this MITIGATION:

> *Part of mitigation has been completed (Data Governance Council).*
>
> *This has been included in the IAPD and will be submitted to CMS in June. 250k has been allocated. Requesting another 250k, total of 500k. The 500k is included in the data governance costs. The State has contracted with Briljent as the vendor to support the standup and integration of data governance for the MDWAS project. The State is very confident of CMS approval.*

This response is entirely appropriate, and we rate the likelihood of the risk being realized as very low.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

8 COST ANALYSIS AND MODEL FOR BENEFIT ANALYSIS

8.1 ANALYSIS DESCRIPTION:

Provide a narrative summary of the cost benefit analysis conducted.

As this project has no eliminated costs (such as decommissioning of existing systems) to offset project costs, in the language of this Independent Review, the costs will be tangible and the benefits will be intangible. (See discussions in **8.4 and 8.5, *below***).

8.2 ASSUMPTIONS:

List any assumptions made in your analysis.

- Cost assumptions are as described in **Section 10, *below***.

8.3 FUNDING:

Provide the funding source(s). If multiple sources, indicate the percentage of each source for both Acquisition Costs and on-going Operational costs over the duration of the system/service lifecycle.

Please see **Section 10.3, in Impact Analysis on Net Operating Cost, *below*.** (Includes Acquisition and Operating costs)

8.4 TANGIBLE COSTS & BENEFITS:

Provide a list and description of the tangible costs and benefits of this project. Its "tangible" if it has a direct impact on implementation or operating costs (an increase = a tangible cost and a decrease = a tangible benefit). The cost of software licenses is an example of a tangible cost. Projected annual operating cost savings is an example of a tangible benefit.

TANGIBLE COST: $73,075,203.13

TANGIBLE BENEFIT: NONE IDENTIFIED

ASSESSMENT:

This project moves the bulk of State Medicaid data analysis to a new, reliable, and scalable platform. Typically, this would result in a tangible benefit as the costs of maintaining the legacy systems would be recovered as they are eventually put out of commission. And indeed, an earlier conception of this project, the State considered whether to retire those systems. However, these systems serve additional functions beyond processing Medicaid program data, such as serving as a data source for the State's fiscal agent. These functions will very likely continue to operate for an indefinite period. The project

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

team decided – wisely, in our opinion – not to claim a tangible financial benefit from decommissioning these systems, as doing so would require a level of coordination, planning, timing, and instigation of parallel projects which would unnecessarily complicate and delay the present project.

That said, we think it is reasonable to speculate that these other functions will eventually be replaced through implementation of more modern systems, in keeping with the State's strategy of replacing aging legacy systems; but it would not be proper to identify such as a benefit to the present project.

8.5 INTANGIBLE COSTS & BENEFITS:

Provide a list and descriptions of the intangible costs and benefits. Its "intangible" if it has a positive or negative impact but is not cost related. Examples: Customer Service is expected to improve (intangible benefit) or Employee Morale is expected to decline (intangible cost)

THE STATE EXPECTS THE FOLLOWING INTANGIBLE BENEFITS:

Intangible Benefit	How will Achievement be Measured?
Solution will be capable of storing all data required for the administration and operation of the Medicaid program, which will allow all analytics to be performed from a single DAR solution. This will reduce errors related to manually linking data sources for reporting and analytics purposes. Support federal CMS 64/21 drawdown, Payment and Delivery System (PADS) Reform, and business areas, such as Finance that needs flexible, scalable, and robust data mining tools to adequately perform their jobs.	Consolidate the sources of data to one data warehouse. Provide worker accessibility to a single DAR solution and sandbox. Increased data quality and integrity.
The proposed solution will contain built-in technology for meeting current and future federal and state compliance guidelines including MES federal reporting, HIPAA compliance and functionality to meet technical requirements outlined by the Centers for Medicare & Medicaid Services (CMS) and the Office of the National Coordinator (ONC).	Solution meets CMS certification requirements which proves that it meets current CMS policy guidelines. Increase MITA assessments based on system functionality and maturity. New solution has no CMS compliance corrective action measures.
Solution supports complex analysis of program data from health outcome measures to assist in rate-setting for value-based payment models including the all payer model.	Increased visibility to trend and pattern analysis of Medicaid data. Solution provides new tools for querying and grouping data.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

The proposed solution will enable SOV teams to have "self-service" access to data as needed. The solution will enable the business to transition from outsourced data and reporting tools provided by a contracted third-party supporting the MMIS solution and also decrease reliance on in-house data analysts for simple reporting and querying needs.	SOV reduced reliance on contracted third-party MMIS support for data reporting needs. SOV teams access their routine queries and reports directly through the Solution without assistance from contractors or SOV data experts.
The solution is able to meet current and future MMIS data needs such as analytics reporting and future scalability.	The solution architecture meets MMIS data scalability and modularity requirements and modifications are easier to implement. The number of MMIS data related IV&V observations are reduced or easily remediated. The solution is extensible to meet AHS' future data strategies.
The DAR solution will enable stakeholders to produce reports and data extract files; create data visualizations and dashboards; monitor financials; perform rate modeling; and monitor post-payment MMIS activity for fraud, waste, and abuse. The DAR solution will allow the State of Vermont to meet State and Federal reporting obligations.	Exploring analytical insights will allow the State of Vermont to assess program effectiveness, forecast health care trends with analysis to make informed policy decisions, and strengthen and grow cross-agency and Federal/State initiatives.
This project aligns with the plan shared with CMS for the state to comply with the CMS Interoperability and Patient Access final rule.	The State will analyze the ADW data elements to ensure that they are complete and are provided to the State interoperability system.
The solution will cleanse and filter Medicaid clinical data to provide quality data for reporting and analytics.	The majority of critical Medicaid clinical data quality issues are identified and addressed.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

The system supports various business processes' reporting requirements.	**1) Within one year of go-live, the solution will support the creation of end-to-end reports for at least 50% of the State's Federal/State reporting obligations (Medicaid Enterprise System established outcomes-based measures). Reports not yet supported by the solution will continue to follow legacy processes until they are brought online with the new solution.** 2) Within three years of go-live, the solution will support the creation of end-to-end reports for at least 90% of the State's Federal/State reporting obligations. Reports not yet supported by the solution will continue to follow legacy processes until they are brought online with the new solution.
The solution includes analytical and reporting capabilities to support key policy decision making.	**1) Within one year of go-live, the solution will provide reporting and analytics sufficient to gather information to assess progress on 75% of Medicaid Enterprise System (MES) established outcomes-based measures.** 2) Within three years of go-live, the solution will provide reporting and analytics to gather information to assess progress on 95% of the MES established outcomes-based measures.
The solution provides opportunities to continuously improve and innovate by ensuing data completeness.	Within one year of go-live, achieve 95% data completeness for all developed reporting obligations.
The solution supports document traceability and data lineage for the State's reporting obligations.	Within one year of go-live, the solution supports document traceability and data lineage for at least 95% of utilized data elements for all currently developed reporting obligations.
The State of Vermont has architected the data warehouse to be extensible and scalable in order to accommodate what the state has projected its future business needs to be.	Within two years of go-live, the State has expanded the number of data sources and programs to achieve business objectives.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

ASSESSMENT:

These intangible benefits are supported by extensive Business Analysis performed by the State; by guidance and requirements issued by CMS; by experience and business knowledge possessed by the State Medicaid program staff; and by data analyzed in numerous reports produced by the State. Most are tied in the IT ABC Form to outcome measurements which are for the most part empirical rather than quantitative, but nonetheless verifiable. We assess that all of the intangible benefits above are fairly claimed.

8.6 COSTS VS. BENEFITS:

Do the benefits of this project (consider both tangible and intangible) outweigh the costs in your opinion? Please elaborate on your response.

Yes. This is a costly program but bears very strong benefits for an area of high priority for the State and its legislature, as well as for the federal CMS. Relying on existing systems and processes, conversely, would carry a strong likelihood of increased financial risk to funding, and diminishment of SoV efficiency and effectiveness.

8.7 IT ABC FORM REVIEW:

Review the IT ABC form (Business Case/Cost Analysis) created by the Business for this project. Is the information consistent with your independent review and analysis? If not, please describe. Is the lifecycle that was used appropriate for the technology being proposed? If not, please explain.

The IT ABC Form was revised shortly before the commencement of the present Review, and so it accurately reflects the goals and structure of the project, benefits expected, vendor costs as negotiated in the draft contract, and estimated professional services and personnel costs. We reviewed the source documentation for these costs, and find they are reasonable and well-supported.

(*One very minor error was that Independent Reviews for the two workstreams was projected as maximum $100,000; this was apparently based on the $50K cap for a complex Independent Review as envisioned when the two workstreams were combined in an earlier form of the project. The Reviews for the two workstreams as now envisioned are standard IRs, with a $25K cap each.*)

Additional Comments on the Cost Benefit Analysis:

none

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

9 ANALYSIS OF ALTERNATIVES

9.1 PROVIDE A BRIEF ANALYSIS OF ALTERNATE TECHNICAL SOLUTIONS THAT WERE DEEMED FINANCIALLY UNFEASIBLE.

None of the finalists selected in the procurement effort were found to be financially unfeasible. Total cost was a part of the scoring process, combined with other scoring categories to produce a final score for each vendor. The selected vendor was the most expensive of the three (but not unreasonably) yet scored highest in every one of the other categories. This is consistent with State competitive bidding process, where bid cost is *a* factor, but not *the only* factor to consider.

9.2 PROVIDE A BRIEF ANALYSIS OF ALTERNATE TECHNICAL SOLUTIONS THAT WERE DEEMED UNSUSTAINABLE.

It would clearly be feasible to continue to use the existing systems and processes as they are, as the State is currently operating that way. The IT ABC Form states:

> *The current solution has a dependency on a third-party vendor to manage federal reporting, limits SOV access to data for analysis, and ad-hoc requests for various reports, data feeds and information from multiple sources which are non-scalable and time consuming. These disparate data sources have their own data structures, reporting processes and points of failure. The current solution also limits the state's ability to analyze clinical and claims data, which limits our understanding of how policy decisions impact clinical outcomes. There are many manual reporting processes that have a risk for human error.*

We think this is a good summary of the risks. The State's existing systems are CMS compliant and certified; however, they are not scalable nor easily modified or updated, so it is reasonable to speculate that such compliance will become increasingly difficult over coming years as the CMS requirements evolve. As important, the State's own internal needs for data analysis and use will continue to evolve, and this would conceivably stretch the existing data analysis resources to the breaking point.

Consequently, "doing nothing" is unsustainable.

9.3 PROVIDE A BRIEF ANALYSIS OF ALTERNATE TECHNICAL SOLUTIONS WHERE THE COSTS FOR OPERATIONS AND MAINTENANCE WERE UNFEASIBLE.

N/A

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

10 IMPACT ANALYSIS ON NET OPERATING COSTS

10.1 INSERT A TABLE TO ILLUSTRATE THE NET OPERATING COST IMPACT.

Table 11 - Project Lifecycle Costs

	Procurement	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Total Project Cost	$31,190,425.67	$6,946,858.51	$8,346,102.32	$8,559,548.84	$8,754,526.06	$9,277,741.75	$73,075,203.13
Current Cost	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Cost	$31,190,425.67	$6,946,858.51	$8,346,102.32	$8,559,548.84	$8,754,526.06	$9,277,741.75	$73,075,203.13

Table 12 - Project Lifecycle Cumulative Costs

	Procurement	Year 1	Year 2	Year 3	Year 4	Year 5
Project Cost Cumulative	$31,190,425.67	$38,137,284.18	$46,483,386.49	$55,042,935.33	$63,797,461.39	$73,075,203.13
Current Costs Cumulative	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Cumulative Cost Savings	**-$31,190,425.67**	**-$38,137,284.18**	**-$46,483,386.49**	**-$55,042,935.33**	**-$63,797,461.39**	**-$73,075,203.13**

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

10.2 PROVIDE A NARRATIVE SUMMARY OF THE ANALYSIS CONDUCTED AND INCLUDE A LIST OF ANY ASSUMPTIONS.

Because there is no existing system to offset project costs, the impact analysis consists of a straightforward listing of workstream costs by implementation and by operating year. These figures are available on **Attachment #1, Cost Spreadsheet**. As noted on the Cost Spreadsheet, certain costs for this workstream are approximated by multiplying the total costs for those items by 2/3 (66.6%). None of those costs are contractual costs to the MDLAS vendor.

Assumptions for the analysis:

- 66.6% approximation as described above is accurate.
- No existing data systems will be decommissioned as part of this workstream's scope
- Estimates of required State personnel hours and roles are accurate for this workstream.
- Estimates of required professional services are accurate for this workstream.
- The draft contract Payment Provisions are an accurate representation of the vendor costs for this workstream.
- No contract amendments impacting cost will occur during the lifecycle, aside from discretionary amounts memorialized in the draft contract.

10.3 EXPLAIN ANY NET OPERATING INCREASES THAT WILL BE COVERED BY FEDERAL FUNDING. WILL THIS FUNDING COVER THE ENTIRE LIFECYCLE? IF NOT, PLEASE PROVIDE THE BREAKOUTS BY YEAR.

This workstream would be supported in part by Federal Funding in the following proportions:

- Procurement and Implementation: Federal 90%, State 10%
- Maintenance and Operations: Federal 75%, State 25%

The table below delineates these allocations.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Table 13 - Federal vs State Share of Cost

	Procurement	M&O Year 1	M&O Year 2	M&O Year 3	M&O Year 4	M&O Year 5	Total
Total Project Cost	$ 31,190,425.67	$ 6,946,858.51	$ 8,346,102.32	$ 8,559,548.84	$ 8,754,526.06	$ 9,277,741.75	$ 73,075,203.13
Federal Share of Cost	$ 28,071,383.10	$ 5,210,143.88	$ 6,259,576.74	$ 6,419,661.63	$ 6,565,894.54	$ 6,958,306.31	$ 59,484,966.20
State Share of Cost	**$ 3,119,042.57**	**$ 1,736,714.63**	**$ 2,086,525.58**	**$ 2,139,887.21**	**$ 2,188,631.51**	**$ 2,319,435.44**	**$ 13,590,236.93**

10.4 WHAT IS THE BREAK-EVEN POINT FOR THIS IT ACTIVITY (CONSIDERING IMPLEMENTATION AND ON-GOING OPERATING COSTS)?

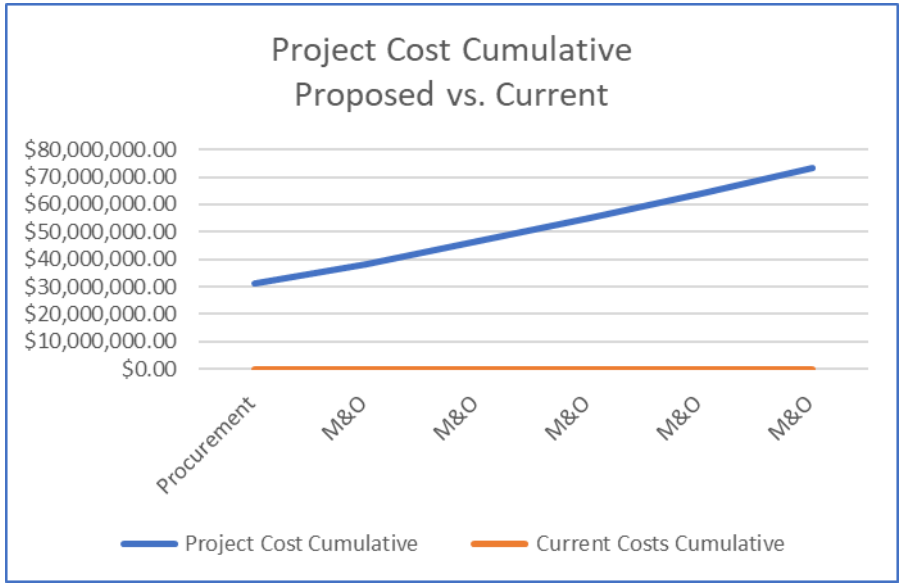


Figure 1 - Cumulative Cost Impact over Lifecycle

There is no break-even point for this activity since it is not replacing a current system.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

11 SECURITY ASSESSMENT

Assess Information Security alignment with State expectations. ADS-Security Division will support reviewer and provide guidance on assessment.

The vendor is obligated contractually to fulfill and align with all State security requirements and expectations. Several of the comments below are derived from requirements in the draft contract. Significantly, though, a read of the vendor's original proposal reveals that they not only agree with the State's requirements but have an understanding and approach demonstrating a familiarity with stringent security controls and the heightened privacy controls of systems with Medicaid data.

The system will be cloud hosted in AWS GovCloud, guaranteeing compliance with NIST 800-53 requirements.

11.1 WILL THE NEW SYSTEM HAVE ITS OWN INFORMATION SECURITY CONTROLS, RELY ON THE STATE'S CONTROLS, OR INCORPORATE BOTH?

Most of the controls in a cloud environment are shared between the cloud provider and the consumer. The Systems Security Plan required of the vendor includes Management Controls, Operational Controls, Technical Controls, and Equipment Inventory Lists. An Independent Systemwide Security Controls Assessment is performed annually, and the results reported to the State.

11.2 WHAT METHOD DOES THE SYSTEM USE FOR DATA CLASSIFICATION?

The proposed system uses compliance standards for classifying data, such as Personally Identifiable Information (PII) and Protected Health Information (PHI).

11.3 WHAT IS THE VENDOR'S BREACH NOTIFICATION AND INCIDENT RESPONSE PROCESS?

This process is defined in the draft contract in Attachment D, Information Technology System Implementation Terms and Conditions (rev. 3/08/19) **Section 6.2** and is compliant with Section 9 V.S.A. §2435(b)(3).

11.4 DOES THE VENDOR HAVE A RISK MANAGEMENT PROGRAM THAT SPECIFICALLY ADDRESSES INFORMATION SECURITY RISKS?

The Contractor must collaborate with the State to provide a Risk Management Plan (RMP), for all phases of the overall MDLAS implementation and operations project, that at a minimum, complies with industry project management standards, includes a Comprehensive Risk Assessment and Risk Mitigation Plan, and sufficiently addresses the challenges represented within a multi-Contractor, integrated systems solution.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Relatedly, Federal Medicaid System Security Requirements Compliance requires the vendor to supply a security plan, risk assessment, and security controls review document within three months of the start date of the contract (and update it annually thereafter) in order to support audit compliance with 45 CFR 95.621 subpart F, ADP System Security Requirements and Review Process.

11.5 WHAT ENCRYPTION CONTROLS/TECHNOLOGIES DOES THE SYSTEM USE TO PROTECT DATA AT REST AND IN TRANSIT?

See ***11.7, below***.

11.6 WHAT FORMAT DOES THE VENDOR USE FOR CONTINUOUS VULNERABILITY MANAGEMENT, WHAT PROCESS IS USED FOR REMEDIATION, AND HOW DO THEY REPORT VULNERABILITIES TO CUSTOMERS?

The vendor maintains continuous monitoring measured against agreed security metrics. A monthly report of results is maintained and presented to the State quarterly. This report is contained in the metrics section of the Plan of Action and Milestones (POAM) workbook, which is a State-specified template.

Results of third-party vulnerability scanning is reported to the State on a quarterly basis and the vendor must provide a report of all findings to the State within 10 business days. Any issues identified and reported to the State are to be resolved according to their respective SLA.

These requirements are secure and appropriate.

11.7 HOW DOES THE VENDOR DETERMINE THEIR COMPLIANCE MODEL AND HOW IS THEIR COMPLIANCE ASSESSED?

The vendor must provide an independent, third-party security and privacy controls assessment report that covers compliance with the following:

- NIST SP 800-171 and/or NIST SP 800-53 standards and all relevant controls in HIPAA;
- aligning Health Care Industry Security Approaches pursuant to Cybersecurity Act of 2015, Section 405(d); and
- the Open Web Application Security Project Top 10. Risks should be identified using NIST SP 800-30 Revision 1.

The third-party audit must include, but need not be limited to, a penetration test, a review of all HIPAA compliance areas: user authentication; information disclosure; audit trail; data transfers; and information on correct data use (role-based testing of use). The audit must cover adequate audit trails and logs (ID, access level, action performed, etc.). The audit must also cover encryption of data at rest, in audit logs, and in transit between workstations and mobile devices (where applicable), to external locations and to offline storage. Pursuant to 45 CFR § 95.621(f) and consistent with State Medicaid Director Letter #06-0221.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

11.8 FURTHER COMMENTS ON SECURITY

none

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

12 RISK ASSESSMENT & RISK REGISTER

The risks identified throughout this review are collected below, along with an assessment of their significance, a description of the State response and timing, and our evaluation of the State response.

12.1.1 ADDITIONAL COMMENTS ON RISK

See **Section 1.4, *above***, for a relatively minor issue noted.

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

12.1.2 RISK REGISTER

The following table explains the Risk Register components:

Risk ID:	Identification number assigned to risk or issue.	
Risk Rating:	An assessment of risk significance, based on multiplication of **(probability X impact ratings)** (*see below*).	
	1-9 = low	See table below
	10-48 = moderate	
	49-90 high	
Probability:	Assessment of likelihood of risk occurring, scale of **1,3,5,7, or 9**, from least to most likely	
Impact:	Assessment of severity of negative effect, scale of **1,3,5,7, or 10**, from least to most severe	
Finding:	Review finding which led to identifying a risk	
Risk Of:	Nature of the risk	
Source:	Project, Proposed Solution, Vendor or Other	
Risk domains:	What may be impacted, should the risk occur	
State's Planned Risk Strategy	Decision to *avoid*, *mitigate*, or *accept* risk	
State's Planned Risk response	Detailed description of response to risk, in order to accomplish decision	
Reviewer's Assessment:	Reviewer's evaluation of the State's planned response	

Risk Rating Matrix			IMPACT				
			Trivial	Minor	Moderate	Major	Extreme
			1	3	5	7	10
LIKELIHOOD	Rare	1	1	3	5	7	10
	Unlikely	3	3	9	15	21	30
	Moderate	5	5	15	25	35	50
	Likely	7	7	21	35	49	70
	Very Likely	10	10	27	45	63	90

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Risk ID: R1	Rating:	**7**	
	Likelihood:	**1**	
	Impact:	**7**	
Finding:	Demonstrating a level of data governance has been a requirement from CMS for certification of the data warehouse from the project's onset. The current project team, leadership, and CMS have recognized that having a data governance structure is critical.		
Risk Of:	If a data governance structure is not put into place as part of Medicaid Data Warehouse and Analytic Solution (MDWAS) Design, Development, and Implementation (DDI), the State runs the risk of not having a completely certifiable system based on CMS requirements. In addition, implementing the various MDWAS components will have added difficulty without the guidance of a data governance strategy which would put the entire project at risk.		
Risk domains:	CMS Certification, Data governance		
State's Planned Risk Response:	MITIGATE: Part of mitigation has been completed (Data Governance Council). This has been included in the IAPD and will be submitted to CMS in June. 250k has been allocated. Requesting another 250k, total of 500k. The 500k is included in the data governance costs. The State has contracted with Briljent as the vendor to support the standup and integration of data governance for the MDWAS project. The State is very confident of CMS approval.		
Reviewer's Assessment of State's Planned Response	concur		

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Risk ID: R2	Rating:	**35**	
	Likelihood:	**5**	
	Impact:	**7**	
Finding:	Several vendors involved with the MDWAS project must work together closely throughout the project duration to ensure project scope, schedule and budget remains intact. Collaboration and communication must remain top priorities for overall project success.		
Risk Of:	Failure to align vendors may result in project schedule delays, rework, missed work or other critical project issues.		
Risk domains:	timeline		
State's Planned Risk Response:	MITIGATE: There are no current contracted vendors aside from the selected MDLAS vendor. This will become an open risk after MDLAS vendor kickoff. Vendors are aware this is coming and when the State expects them to fully engage. Team must set expectations up front with any involved vendors. As required by their project role, vendors must be aware of both workstreams' scopes and the interdependencies between them.		
Reviewer's Assessment of State's Planned Response	Concur		

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Risk ID: R3	Rating:	**49**	
	Likelihood:	**7**	
	Impact:	**7**	
Finding:	The project team is aware from work on the MMIS Interoperability Project that the data detail in the VHIE is at the provider level. Multiple provider records for a single member "encounter" will increase data transmission volume and may require an increase in previously estimated storage and processing allocations.		
Risk Of:	An increased data volume may require an update to the prior estimated storage and processing allocations used during MDLAS contract negotiations.		
Risk domains:	technology		
State's Planned Risk Response:	MITIGATE Further investigation and determination of clinical data transmission volume from the VHIE will be vetted during the data source validation phase of the MDLAS contract.		
Reviewer's Assessment of State's Planned Response	concur		

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Risk ID: R6	Rating:	**9**	
	Likelihood:	**3**	
	Impact:	**3**	
Finding:	The implementation will make significant demands on already very busy staff. If State staff cannot maintain pace with the vendor, the project could be delayed.		
Risk Of:	This would impact the go-live date and require contract amendment.		
Risk domains:	timeline		
State's Planned Risk Response:	MITIGATE The State has completed modeling of staff requirements. The State continues to have dialogue around future staff requirements and will continue to plan accordingly.		
Reviewer's Assessment of State's Planned Response	concur		

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Risk ID: R7	Rating:	**35**	
	Likelihood:	**7**	
	Impact:	**5**	
Finding:	At the time of this writing, the ADW procurement is not complete and therefore the implementation timeline for the ADW has not been firmly set. The target date for ADW contract start date is 20 months after MDLAS contract start date. The implementation period maintained in the ADW RFP is 9 to 20 months.		
Risk Of:	There is the possibility of a "gap" in MDLAS implementation timelines.		
Risk domains:	timeline		
State's Planned Risk Response:	The State is aware of this risk and reflected it on the overarching MDWAS project timeline. Dates shifted due to the procurement strategy decision resulting in a MDLAS Technical Design Architecture (TDA) deliverable to inform the ADW RFP. The State is working to update the ADW RFP and will revisit the maximum period of implementation prior to posting, understanding reduced timeline will have increased costs. The length of gap, if any, will be determined after a vendor is selected and contract dates solidified for the ADW module. Discretionary funds are available on the MDLAS contract to account for some delay if required, but more significant delays may require a contract amendment.		
Reviewer's Assessment of State's Planned Response	concur		

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

13 ATTACHMENTS

Attachment 1 – Cost Spreadsheet

Attachment 2 – Risk Register

DocuSign Envelope ID: 0A0C3EB8-9F61-4669-B1E4-11BD2C26A3B7

Attachment 1: AHS MDLAS IR Cost Spreadsheet ver. 2.1.a - Paul Garstki Consulting - May/30/2023

Project Name:	VDOL Workforce Development System										
Description	Qty	Unit Price	Implementation	Maintenance & Operation	Maintenance & Operation	Maintenance & Operation	Maintenance & Operation	Maintenance & Operation	Total	Lifecycle Total @ Current Annual Cost	Benefit
Fiscal Year			24 months[2]	FY1	FY2	FY3	FY4	FY5			
Vendor Implementation Services											
Data Lake Implementation			$ 5,378,008.27						$ 5,378,008.27		
Data Analytics and Reporting Implementation			$ 19,022,753.05						$ 19,022,753.05		
Vendor Implementation Services Total			**$ 24,400,761.32**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 24,400,761.32**	$ -	**$ (24,400,761.32)**
Vendor Annual Costs											
Data Lake M&O			$ 2,782,182.86	$3,064,965.22	$3,139,866.11	$3,217,010.03	$3,296,628.26	$3,670,980.37	$ 19,171,632.85		
Data Analytics and Reporting M&O			$ -	$3,761,928.78	$5,086,271.70	$5,222,574.30	$5,337,933.29	$5,486,796.87	$ 24,895,504.94		
Vendor Licensing Total			**$ 2,782,182.86**	**$6,826,894.00**	**$8,226,137.81**	**$8,439,584.33**	**$8,634,561.55**	**$9,157,777.24**	**$44,067,137.79**	$ -	**$ (44,067,137.79)**
State-Provided Licensing											
[none]											
State-Provided Licensing Total			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ -	**$ -**
Professional Services											
Contracted Enterprise Architect			$ -	$ 53,040.00	$ 53,040.00	$ 53,040.00	$ 53,040.00	$ 53,040.00	$ 265,200.00		
Contracted Project Manager			$ 1,100,209.13						$ 1,100,209.13		
Other Contracted Professional Services[1, 3]			$ 766,924.30						$ 766,924.30		
Independent Review			$ 17,769.00						$ 17,769.00		
Professional Services Total			**$ 1,884,902.43**	**$ 53,040.00**	**$ 53,040.00**	**$ 53,040.00**	**$ 53,040.00**	**$ 53,040.00**	**$ 2,150,102.43**	$ -	**$ (2,150,102.43)**
Training											
[included in Vendor Services above]		**0**							$ -		
Training Total			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ -	**$ -**
Implementation Services Additional											
[none]									$ -		
Implementation Services Total			**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ -	**$ -**
State Personnel[1]											
State-provided M&O			**$ -**	$ 66,924.51	$ 66,924.51	$ 66,924.51	$ 66,924.51	$ 66,924.51	$ 334,622.53	$ -	
ADS Project Oversight & Reporting			$ 242,431.09						$ 242,431.09		
ADS EPMO Business Analyst for Implementation			$ 1,176,542.33						$ 1,176,542.33		
ADS Security Staff for Implementation			$ 50,395.63						$ 50,395.63		
ADS IT Other Labor for Implementation			$ 653,210.01						$ 653,210.01		
State Personnel Total			**$ 2,122,579.05**	**$ 66,924.51**	**$ 66,924.51**	**$ 66,924.51**	**$ 66,924.51**	**$ 66,924.51**	**$ 2,457,201.59**	$ -	**$ (2,457,201.59)**
Grand Total			**$31,190,425.67**	**$ 6,946,858.51**	**$ 8,346,102.32**	**$ 8,559,548.84**	**$ 8,754,526.06**	**$ 9,277,741.75**	**$ 73,075,203.13**	$ -	$ (73,075,203.13)

NOTES / ASSUMPTIONS:

Notes:
1. *Figures for "Contracted Enterprise Architect," "Contracted Project Manager," "Other Contracted Professional Services," and "State Personnel" represent 66.66% of corresponding figures in the IT ABC Form, to approximate costs for the MDL/DAR workstreams only (i.e., exluding ADW). In reality, there would be significant overlap of implementation tasks among the 3 workstreams.*
2. *The CMS Certification phase for each component, which is ~20% of each not including discretionary funds, is not expected to be paid until ~33 months after CMS Certification is achieved. Those costs are included here to clarify that they are incurred during imiplementation.*
3. *Includes actuals + estimate for Enterprise Architect (current), actuals for Enterprise Architect (completed), and actuals for*

ATTACHMENT 2 - DVHA MDLAS INDEPENDENT REVIEW -- Risk and Issues Register -- version 4.0.a 2023/July/05 -- Paul E. Garstki, JD -- Paul Garstki Consulting

RISKS — What is the finding that leads to identifying a risk? (This is a highly condensed version that is explained more fully in the report narrative) — What are the risks implied by the finding? — What aspects of the project are at risk if the risk(s) are realized? — What is the State's response to the risk? — Does the review have a suggestion for mitigating the risk? — Is the State's response to this risk adequate? — Reviewer's assessment of likelihood risk is realized 1,3,5,7, or 10 — Reviewer's assessment of impact if risk is realized 1,3,5,7, or10

1-9 low
10-48 medium
49-100 high

Note: Risk ID # list may have gaps, in order to maintain consistency with earlier drafts

Risk #	Finding	risk of	risk domains	SOV response	Reviewer's Recommendation, if any	Reviewer Assessment of SOV Response	likelihood 1-10	impact 1-10	total rating
R1	Demonstrating a level of data governance has been a requirement from CMS for certification of the data warehouse from the project's onset. The current project team, leadership, and CMS have recognized that having a data governance structure is critical.	If a data governance structure is not put into place as part of Medicaid Data Warehouse and Analytic Solution (MDWAS) Design, Development, and Implementation (DDI), the State runs the risk of not having a completely certifiable system based on CMS requirements. In addition, implementing the various MDWAS components will have added difficulty without the guidance of a data governance strategy which would put the entire project at risk.	CMS Certification, Data governance	Vendor services to support MDWAS Data Governance has been included in the MMIS-IAPD and will be submitted to CMS in July 2023. $250k has been allocated and the State is requesting another $250k, total of $500k. The $500k is included in the data governance costs. The State has contracted with Briljent as the vendor to support the standup and integration of data governance for the MDWAS project. The State is very confident of CMS approval		concur	1	10	**10**
R2	Several vendors involved with the MDWAS project must work together closely throughout the project duration to ensure project scope, schedule and budget remains intact. Collaboration and communication must remain top priorities for overall project success.	Failure to align vendors may result in project schedule delays, rework, missed work or other critical project issues.	timeline	MITIGATE: There are no current contracted vendors aside from the selected MDLAS vendor. This will become an open risk after MDLAS vendor kickoff.Vendors are aware this is coming and when the State expects them to fully engage. Team must set expectations up front with any involved vendors. As required by their project role, vendors must be aware of both workstreams' scopes and the interdependencies between them.		concur	5	7	**35**
R3	The project team is aware from work on the MMIS Interoperability Project that the data detail in the VHIE is at the provider level. Multiple provider records for a single member "encounter" will increase data transmission volume and may require an increase in previously estimated storage and processing allocations.	An increased data volume may require an update to the prior estimated storage and processing allocations used during MDLAS contract negotiations.	technology	MITIGATE Further investigation and determination of clinical data transmission volume from the VHIE will be vetted during the data source validation phase of the MDLAS contract. .		concur	7	7	**49**
R6	The implementation will make significant demands on already very busy staff. If State staff cannot maintain pace with the vendor, the project could be delayed.	This would impact the go-live date and require contract amendment.	timeline	MITIGATE The State has completed modeling of staff requirements.The State continues to have dialogue around future staff requirements and will continue to plan accordingly.		concur	3	3	**9**
R7	At the time of this writing, the ADW procurement is not complete and therefore the implementation timeline for the ADW has not been firmly set. The target date for ADW contract start date is 20 months after MDLAS contract start date. The implementation period maintained in the ADW RFP is 9 to 20 months.	There is the possibility of a "gap" in the MDLAS implementation timeline, delaying the project.	timeline	The State is aware of this risk and reflected it on the overarching MDWAS project timeline. Dates shifted due to the procurement strategy decision resulting in a MDLAS Technical Design Architecture (TDA) deliverable to inform the ADW RFP. The State is working to update the ADW RFP and will revisit the maximum period of implementation prior to posting, understanding reduced timeline will have increased costs. The length of gap, if any, will be determined after a vendor is selected and contract dates solidified for the ADW module. Discretionary funds are available on the MDLAS contract to account for some delay if required, but more significant delays may require a contract amendment.		concur	7	5	**35**
ISSUES	**Issue Description**			**State Response**					
I1	Current project funding requires $600K in additional general fund from DVHA.			The State may request the $600k additional funds via a BAA submission or a governor recommendation budget submission anticipated to occur during SFY '25-'26 or SFY '26-'27.					