



Paul Garstki Consulting

**INDEPENDENT REVIEW**  
OF A PROPOSED  
**ELECTIONS SYSTEM REPLACEMENT**  
**PROJECT**

*For the*  
**STATE OF VERMONT**  
**AGENCY OF DIGITAL SERVICES (ADS)**  
*And*  
**The VERMONT SECRETARY OF STATE (SOS)**

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

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## 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.*

Among the other responsibilities of the office of the Vermont Secretary of State (SOS), the Elections Division protects the integrity of campaigning and elections in Vermont. It administers Vermont's elections, oversees campaign finance reporting and lobbyist disclosure laws and encourages civic participation.

SOS employs an elections management system (EMS) that was originally procured in 2014. Besides elections management, the existing system also manages Campaign Finance and Lobbying oversight. The existing system is in its 10<sup>th</sup> contract year of operation.

SOS proposes to replace the existing system with a modern system of much higher reliability and significantly more functionality. The new system would be procured as an EMS only, with Campaign Finance and Lobbying oversight systems procured through separate procurement efforts.

The selected vendor is WSD Digital, LLC, d.b.a. ReFrame Solutions, of Windsor, CT., a young company with a well-experienced staff.

The proposed system employs state-of-the-art architecture, is securely and resiliently cloud-hosted, and is well-aligned with State preferences and requirements. The proposed system is reasonably priced. It would very likely deliver significant intangible benefits to Vermont voters, Town Clerks, the Secretary of State elections staff, the media, and the general public.

## 1.1 COST SUMMARY

Table 1 - Cost Summary

<b>IT Activity Lifecycle (years):</b>	<b>6 years</b>
<b>Total Lifecycle Costs:</b>	<b>\$7,224,001.00</b>
<b>Total Implementation Costs:</b>	<b>\$5,080,501.00</b>
<b>New Average Annual Operating Costs:</b>	<b>\$428,700.00</b>
<b>Current Annual Operating Costs</b>	<b>\$86,000.00</b>
<b>Difference Between Current and New Operating Costs:</b>	<b>\$342,700.00</b>
<b>Funding Source(s) and Percentage Breakdown if Multiple Sources:</b>	<b>Procurement</b> <b>Federal: 80%</b> <b>State: 20%</b>  <b>M&amp;O</b> <b>Federal: 80%</b> <b>State: 20%</b>

## 1.2 DISPOSITION OF INDEPENDENT REVIEW DELIVERABLES

Table 2 - Disposition of Independent Review Deliverables

Deliverable	Highlights from the Review <i>Include explanations of any significant concerns</i>
<b>Acquisition Cost Assessment</b>	<p>The total cost of acquisition is <b>\$5,080,501.00</b>, of which <b>\$4,224,878.00</b> constitutes selected vendor implementation services and <b>\$86,850.00</b> covers hosting during implementation. The costs are reasonable.</p> <p>A cost comparison with a different state’s procurement for a project indicates that, in our estimation, the State would be paying about the same or a little more than other entities.</p> <p>The early decision to remove lobbying and campaign finance management from the original project design was likely a good idea, given the time pressure to replace the existing system and its unreliable vendor.</p>
<b>Technology Architecture Review</b>	<p>The system as proposed is a Modified-Off-The-Shelf (MOTS) solution built on an application created by the vendor and currently in use in other contexts. The solution would be fully cloud-based and hosted in a secure Azure GovCloud environment.</p> <p>The architecture is modern and clearly designed. It comprehensively addresses the State’s requirements and would be likely to rectify many of the frustrations of the existing system. Use of a microservices architecture means individual components can be updated without affecting the rest of the system.</p> <p>The system as proposed is well-aligned with the State’s IT Strategic Plan and with Enterprise Architecture Guiding Principles. The Service Level Agreement is adequate.</p>
<b>Implementation Plan Assessment</b>	<p>The implementation plan and timeline is in an early stage of development. The preliminary Implementation Master Schedule (IMS) is a narrative description of the implementation process, mostly as described in the vendor’s proposal. It is detailed and well written, and excellent for what it is, but it is not a conventional IMS and it does not contain a timeline (there is a table of . The IMS will be updated by the vendor’s project manager after contract execution as allowed by Attachment A Section 5.3 of the draft contract.</p> <p>The elections staff is very enthusiastic about the project and anxious for the system to be implemented.</p>



	All deliverables look likely to meet the business needs of the State.
<b>Cost Analysis and Model for Benefit Analysis</b>	<ol style="list-style-type: none"> <li>1. <b>Tangible Cost: \$6,708,001.00</b></li> <li>2. <b>Tangible Cost State funds only: \$928,800.20</b></li> <li>3. <b>Average tangible increase in annual M&amp;O cost: \$342,700.00</b></li> <li>4. <b>Average tangible benefit in annual M&amp;O State funds only: \$260.00</b></li> </ol> <p>Intangible benefits are significant and listed in a table in this section, with metrics for measuring success.</p> <p>The benefits of this project (both tangible and intangible) outweigh the costs. The proposed project was always expected to be expensive in relation to continuing the existing system. (see 8.7 IT ABC Form Review, below.) The existing system is increasingly unreliable and the State has lost confidence in the vendor who is maintaining it. The State of Vermont absolutely requires a functional, updateable, and reliable EMS maintained by a responsive vendor to conduct statewide elections in a manner compliant with federal and State law. The intangible benefits primarily derive from acting on that need. Also, federal funds are available, making this a good time to develop and implement the proposed project.</p>
<b>Analysis of Alternatives</b>	The obvious alternative technical solution (other than the choice of a different vendor) would be to continue to use the existing system. Doing so would also continue and exacerbate the support and performance problems which led to the proposed project in the first place. Additionally, the current vendor supporting the existing system did not respond to the RFP. The selected vendor for the proposed project will likely be engaged to take over M&O of the existing system, as they have the requisite intimate knowledge of the system to do so. That was on offer as part of the proposed project only as a temporary measure to keep the existing system running while the new system was built.
<b>Impact Analysis on Net Operating Costs</b>	<p>The total cost of the project compared to hypothetically continuing to use the existing system would be an increase of <b>\$6,825,301.00</b> over the lifecycle.</p> <p>The project would be partially funded by the federal government (HAVA) at a rate of 80%, and the State would pay 20%. The breakdown over the lifecycle would be:  Federal: \$5,779,200.80  State: <b>\$1,444,800.20</b></p>
<b>Security Assessment</b>	The information in this section indicates a vendor who is security conscious and aligned with the State on security mechanisms and practices. Their

	<p>responses to RFP security-related non-functional-requirements (NFRs) were sufficiently comprehensive and transparent.</p> <p>The system would be resilient and well-secured, with measured and reported performance. Proper controls would be in place to defend the information contained in the system.</p>
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### 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
[none]	<b>0</b> <b>0/0</b>	--	--

### 1.4 OTHER ISSUES

**none**

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... 8/17/2023

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:  
Alex Ivey 289191A4D6AB4C0... 8/17/2023

ADS Oversight Project Manager

Date

DocuSigned by:  
Denise Reilly-Hughes 6041A76735A7442... 8/24/2023

State of Vermont Chief Information Officer

Date

## 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.

### 3 SOURCES OF INFORMATION

#### 3.1 INDEPENDENT REVIEW PARTICIPANTS

Table 4 - Independent Review Participants

Name	Title	Role
<b>Sarah Copeland Hanzas</b>	Secretary of State	Executive Sponsor
<b>Lauren Hibbert</b>	Deputy Secretary of State	Project Sponsor
<b>Will Senning</b>	Director of Elections	Business Lead
<b>Jon Welch</b>	SOS IT Director	IT Lead
<b>Burgandy Webster</b>	Enterprise Business Analyst	Business Analyst
<b>Tammy Sink</b>	Assistant Director, Elections Division	Election Staff Members
<b>Alex Ibey</b>	IT Project Portfolio Manager	IR Oversight, SPOC

### 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
<b>attachment-d_information_technology_system_implementation_terms_conditions.docx</b>
<b>attachment-e_maintenance_support_service_level_terms.docx</b>
<b>attachment-f_critical_security_controls_azure.docx</b>
<b>election_management_system_contract_draft_v1.docx</b>
<b>exhibit-1_state_technical_functional_requirements.docx</b>
<b>exhibit-2_preliminary_implementation_master_schedule.docx</b>
<b>exhibit-3_project_management_plan.docx</b>
<b>exhibit-4_state_third-party_software.docx</b>
<b>exhibit-5_pricing_breakout_implementation_operating_costs_annually.docx</b>
<b>MS RFP Scoring Evaluation Workbook.xlsx</b>
<b>RFP Package - SoS Elections Management System.pdf</b>
<b>RFP_Reframe-Solutions_Election-Management-System.pdf</b>
<b>Risk Register.xlsx</b>
<b>SOS Elections Replacement - IR Amendment Date Extension.docx.pdf</b>
<b>VT_SOS_Election_Mgmt_System_Project - IT ABC Form - FULLY EXECUTED.pdf</b>

## 4 PROJECT INFORMATION

### 4.1 HISTORICAL BACKGROUND

The existing Elections Management System (EMS) employed by the Vermont Secretary of State was developed by PCC Technology Group, LLC (PCCTG) and became operational in 2016. For the first several years of operation, the system performed well. Also in 2016, PCCTG was acquired by GCR, Inc.<sup>1</sup> In 2020, GCR unified all their subsidiaries under the single name Civix. That transition coincides with the State's experience that support and maintenance of the EMS began to deteriorate. We were told that support requests often took unreasonably long to resolve; requested enhancements were slow in coming or never arrived at all; and by the 2022 elections following Vermont's 2021 redistricting process, the system encountered significant problems when displaying election night results (ENR). The State lost confidence in Civix's ability to maintain and support the system adequately and began to pursue a replacement system.

Following approval of the IT ABC Form, a Request for Proposals (RFP) was developed and issued in January of 2023. 13 vendors were approached and 6 compliant proposals were received. As a result of the scoring process, 3 of these progressed to the finalist stage. All were invited to present demonstrations (demos) of their proposed products. After these had taken place and were evaluated, the State proposed WSD Digital, LLC dba ReFrame Solutions (ReFrame) as the prospective vendor.

(Besides the EMS component, SOS utilizes lobbying and campaign finance management applications. Replacement of those applications is not part of the present project, although the State is replacing them through separate projects.)

Besides the quality of the proposed system, several other factors worked in ReFrame's favor. The founder and CEO of ReFrame, and the proposed team leader, had been key in developing the existing system, although he left PCC sometime after the acquisition by GCR, Inc. He therefore has knowledge of current State data structures and the rules, processes, and statutes that govern the election process in Vermont. The State's experiences with him regarding the existing system's implementation as well as in projects for other State Agencies had been very positive. As part of their proposal (but not part of the draft contract for the presently proposed project), ReFrame offered to support and maintain the existing EMS while the new one is being developed, at no additional cost to the State aside from AWS hosting fees required to support the existing cloud. The State is inclined to accept that offer.

ReFrame is a young company with a well-experienced staff. This is only the second implementation of the proposed system. Offsetting that is the fact that many of their staff have long experience with EMSs, including the original implementation of the existing system (before it became problematic). They are well acquainted with the State and its election cycles and needs.

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<sup>1</sup> <https://gocivix.com/company/about-civix/>



## 4.2 PROJECT GOAL

As the Chief Election Official for the State of Vermont, the Secretary of State (SOS) is responsible for the administration of all statewide Primary and General Elections in Vermont, as well as administration of the Statewide Voter Checklist. The State is seeking to purchase a new EMS to facilitate the administration of these elections in compliance with state and federal law.

## 4.3 PROJECT SCOPE

### 4.3.1 IN-SCOPE

- Implementation of an Elections Management System with the features listed in 4.3.3 Major Deliverables, *below*.
- Maintenance and Operation of the resulting system for 6 years following implementation.

### 4.3.2 OUT-OF-SCOPE

- Lobbying and Campaign Finance management systems

### 4.3.3 MAJOR DELIVERABLES

Table 6 - Major Deliverables

Deliverable
An Elections Management System with the following features:
<ul style="list-style-type: none"> <li>• A statewide voter checklist to be used by State and town clerks across the state to add, remove, and otherwise manage Vermont registered voters. This checklist will be required to interface with the Vermont Department of Motor Vehicles (DMV) to facilitate the automatic voter registration (AVR) process at the DMV and the electronic transfer of voter registration information coming from DMV.</li> </ul>
<ul style="list-style-type: none"> <li>• Absentee ballot management and tracking for individual voters, town clerks, and State.</li> </ul>
<ul style="list-style-type: none"> <li>• A voter-specific portal for every registered voter in Vermont with capabilities including absentee ballot requests and tracking, polling place information, voter registration updating/editing, access to sample ballots and other election-specific information, and other voter-specific information.</li> </ul>

<ul style="list-style-type: none"><li>• An election results reporting and processing feature that will allow town clerks to enter the unofficial results of elections on election night, entry of official results following the election, and performance of canvassing functions and final certification of results and winning candidates.</li></ul>
<ul style="list-style-type: none"><li>• A public facing election night results reporting website for the display of unofficial results as they are reported on election night as well as official results as they are certified and canvassed in the days following the election.</li></ul>
<ul style="list-style-type: none"><li>• A candidate registration /election management feature that will allow the defining of an election including registered candidates and ballot questions for production of a data file that may be used for the creation of ballots and all other needs regarding the administration of a given election.</li></ul>
<ul style="list-style-type: none"><li>• An online voter registration module.</li></ul>
Design, development, and implementation (DDI) services (including project management deliverables) for the EMS described above.
Operations Management, Support, and Maintenance

#### 4.4 PROJECT PHASES, MILESTONES, AND SCHEDULE

*Note: Please see Section 7 Assessment of Implementation Plan, below, for a discussion about the timeline.*

Table 7 - Project Phases

Phase	Estimated Dates	Phase Description
<b>Initiation</b>	Aug 2023	Kick-off meeting, Planning, and preparation of project management planning documentation.
<b>Requirements Gathering</b>	--	Contractor performs necessary requirements gathering to finalize functional and technical requirements and identify gaps between State requirements and Solution capabilities. In this phase, at a minimum, the Contractor will complete outstanding current state analysis including data dictionary, data flows, transcribing functional requirements (found in Exhibit 1) into User Stories, business rules, process flows, reporting inventory, notices inventory and completion of the same for the future state.
<b>Implementation</b>	Aug – Nov 2023	Contractor installs and configures the Solution in a Test environment.
<b>Testing</b>	--	State subject matter experts perform Solution testing in in a test User Acceptance Testing (UAT) environment accordance with Contractor-developed Test plans.
<b>Training</b>	Dec 2023 – Sep 2024	Contractor performs training of State personnel (train the trainer or train the user).
<b>Legacy Data Migration</b>	Jan – Sep 2024	Contractor shall perform all necessary legacy data migrations using State-approved migration plan and data mapping templates.
<b>Deployment</b>	Dec 2024 – Feb 2025	Contractor implements the tested and State-approved Solution in the production environment for additional State testing and Go-Live.
<b>Post-Implementation Support/Warranty</b>	Mar 2025	Contractor shall be responsible for fixing all Defects found during the Warranty Period. All Defects found within the Warranty Period, shall be corrected by Contractor at no additional cost to the State.

The table below lists the milestones which will be employed for payment purposes.

Table 8 – Contract Payment Milestones

Payment #	Month	Phase Completed	Scope of Work	Payment Amount
1	0	Requirements Gathering	Requirements	\$422,487.61
2	4	Implementation	Design & Development	\$663,316.81
3	8	Implementation	Design & Development	\$713,316.81
4	12	Implementation	Design & Development	\$713.316.82
5	15	Training	System Testing, Training	\$744,975.30
6	18	Deployment	Quality Management, Implement/Deploy	\$422,488.52
7	21	Post-Implementation and Warranty (effectively constitutes the release of an informal “retainage”)	Project Management, Defect Removal	\$544,976.13

## 5 ACQUISITION COST ASSESSMENT

Table 9 - Acquisition Costs

Acquisition Costs	Cost	Comments
<b>Hardware Costs</b>	<b>\$0.00</b>	<i>No hardware costs to State</i>
<b>Software Costs</b>	<b>\$250,000.00</b>	<i>Enterprise Application license fees during implementation</i>
<b>Implementation Services</b>	<b>\$4,311,728.00</b>	<ul style="list-style-type: none"> <li>• <i>\$4,224,878.00 to selected vendor</i></li> <li>• <i>\$86,850.00 for hosting during implementation</i></li> </ul>
<b>State Personnel</b>	<b>\$163,504.00</b>	<i>See attach. 3, Cost Spreadsheet</i>
<b>Professional Services (e.g., Project Management, Business Analyst, Ind. Review, etc.)</b>	<b>\$355,269.00</b>	<i>See attach. 3, Cost Spreadsheet</i>
<b>Total Acquisition Costs</b>	<b>\$5,080,501.00</b>	

### 5.1 COST VALIDATION:

*Describe how you validated the Acquisition Costs.*

- Implementation Services and Software Costs are as memorialized in the draft contract. They are consistent with the vendor's Best and Final Offer (BAFO).
- State Personnel costs are based on actuals during project development and procurement and estimates using standard State rates for implementation.
- Professional Services include:
  - Contract labor for Project Management and Business Analysis services at rates for State retainer contract labor and estimated need for implementation.
  - Independent Review is actual.

### 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)?*

The table below lists the states we could identify as having recently implemented a full statewide elections management system similar to that proposed for Vermont *plus* Vermont and Rhode Island (because it chose one of the 3 finalist vendors in the present project – ReFrame, Stonewall Solutions, and KNOWiNK). “Recently” means in the last 3-5 years (as best as we could determine).

State	Vendor	Vendor Location	notes
<b>Vermont</b>	<b>Civix</b>	<b>LA</b>	<b><i>Existing; not new</i></b>
<b>Vermont</b>	<b>ReFrame</b>	<b>CT</b>	<b><i>pending</i></b>
<b>New Hampshire</b>	ReFrame	CT	<i>Live?</i>
<b>Rhode Island</b>	Stonewall	RI	<i>voter registration only</i>
<b>New Mexico</b>	KNOWiNK	MO	
<b>Arizona</b>	KNOWiNK	MO	
<b>Utah</b>	KNOWiNK	MO	
<b>Montana</b>	KNOWiNK	MO	
<b>Washington</b>	KNOWiNK	MO	
<b>N. Dakota</b>	KNOWiNK	MO	
<b>S. Dakota</b>	KNOWiNK	MO	
<b>Nebraska</b>	KNOWiNK	MO	
South Carolina	Kopis	SC	
Maine	Kopis	SC	
Maryland	The Canton Group	MD	<i>M&amp;O only</i>

ReFrame Solutions, Stonewall Solutions, and KNOWiNK were the 3 finalist vendors in the State’s proposal evaluation process. In the collection above, clearly KNOWiNK is the market leader. (The KNOWiNK website claims 36 states plus D.C. installations; however, most of those deployments are of their electronic voter check-in product.)

Not all states manage general elections and primaries at the state level. Some manage them at the county level. Similarly, not all statewide EMSs are procured with the same requirements; some modules may be standalone or have functions to meet specific state laws.

To get a reasonable cost comparison we looked at the procurement process for a similar system in the state of Maine. The functional and technical requirements in the RFP are similar to those of the present project. The contract term was for implementation plus one year of M&O, with up to 4 more years of M&O at the state’s option. The bidders were required to submit a price for implementation plus M&O during procurement, and an annual price for M&O. (Vermont’s RFP for the present project required pricing for implementation (including any M&O costs) plus 5 years of M&O.) The state of Maine received 9 bids, of which 2 (Civix and WSD/ReFrame) were disqualified for non-compliance with bid requirements. Kopis was the selected bidder at the conclusion of the process.

The table below shows the compliant bidders in the Maine procurement and the bid price for each. Costs for statewide data-based systems are often, though not always, related to the population size. We make that assumption in the tabular calculations. The estimated population size of Vermont is

approximately 47% of that of Maine. The third column shows 47% of the bid price. The bottom two rows show the average and median of each column of prices.

Vendor	Bid Price	47%
<b>The Canton Group</b>	\$13,114,646.00	\$6,219,911.44
<b>IVS</b>	\$6,980,000.00	\$3,310,419.65
<b>Konnech</b>	\$5,214,526.00	\$2,473,104.49
<b>Kopis</b>	\$5,016,000.00	\$2,378,949.14
<b>OSET Institute</b>	\$5,120,000.00	\$2,428,273.44
<b>Stonewall Solutions</b>	\$7,518,416.50	\$3,565,775.61
<b>WSD (ReFrame)</b>	\$10,592,578.00	\$5,023,764.81
<b>Average</b>	\$7,650,880.93	\$3,628,599.80
<b>Median</b>	\$6,980,000.00	\$3,310,419.65

<b>VT Implementation</b>	\$4,561,728.00
<b>VT average annual M&amp;O</b>	\$428,700.00
<b>TOTAL</b>	<b>\$4,990,428.00</b>

We compared the Vermont proposed cost as shown above (\$4,990,428.00) with the average (\$3,628,599.80) of the 47% adjusted prices. We also compared the Vermont price with the WSD (ReFrame) 47% adjusted price.

The Vermont cost is 27.29% higher than the Maine-derived average. The Vermont cost is 0.67% lower than the Maine WSD/ReFrame adjusted bid price.

**From these estimations we conclude that the State is paying about the same as, or a little more than other entities for similar solutions.**

### 5.3 COST ASSESSMENT:

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

Yes, the costs are reasonable and generally in line with other State projects of this scope.

Some Project Manager documentation commonly in place before contract execution (e.g., charter, formal risk register, RACI) have not been produced, but they likely would not have added all that much process value to the project, although those documents will be necessary during implementation.

**Additional Comments on Acquisition Costs:**

Had the decision been made to acquire lobbying and campaign finance management capability at the same time, the project would likely have been lengthier and more complex. It would also have been more costly, but whether it would be more or less costly than implementing those other functions separately remains to be seen. Importantly, however, the State has effectively lost confidence in the current vendor's quality of work and the ability of the existing system to continue to meet the State's needs, making time of the essence in replacing that system.

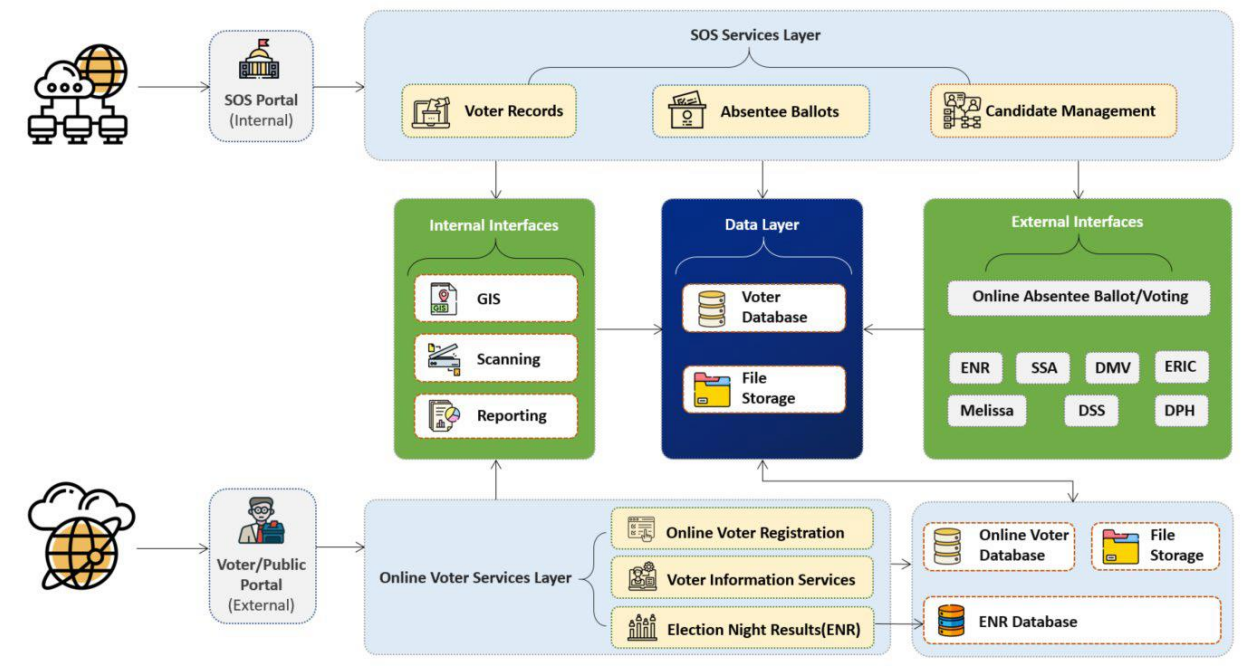


## 6 TECHNOLOGY ARCHITECTURE REVIEW

The EMS system as proposed is a Modified-Off-The-Shelf (MOTS) solution built on an application created by the vendor and currently in use in other contexts. The application employs a microservices architecture. With a microservices architecture, an application is built as independent components that run each application process as a service. These services communicate via a well-defined interface using lightweight APIs.<sup>2</sup> All services are designed to be RESTful, service-oriented, and avoid sessions. The resulting application is meant to be resilient, highly scalable, and able to evolve quickly.

The solution is fully cloud-hosted in Azure GovCloud, ensuring a high level of hosting security and recoverability. It is accessed via standard web browsers using encrypted protocols.

The diagram below was provided by the vendor and shows the high-level architecture of the solution:



Two separate portals with appropriate security configurations are deployed, one for State users and municipality users and the other for voters and the general public. Each portal accesses the services needed for its functions. This arrangement separates business functions from public access functions.

The State and town clerk portal connects to voter records, absentee ballots, and candidate management services. These services in turn connect to internal interfaces, e.g., location services (GIS), document scanning, and reporting; external interfaces, e.g., address confirmation (Melissa), Department of Motor Vehicles (DMV, for voter registration); and the data layer, which hosts the voter database and EMS file

<sup>2</sup> <https://aws.amazon.com/microservices/>

storage. The database platform is Microsoft SQL Server. SQL Server Report Services is employed for report generation.

The public portal connects to online voter registration, voter information services, and Election Night Results (ENR).<sup>3</sup> These in turn connect to the online voter database, the ENR database, and such EMS functions as are appropriate. To ensure maximum security for the data in the application, a separate database is used for Online Voter services and Election Night Results application, and the data is synchronized between these applications.

### Assessment

The microservices architecture is a good choice for security-intensive applications, as each service is separate, stateless, and communicates via APIs. The architectural description from the vendor was comprehensive and sufficiently granular – more detailed than we often see in proposals. The technical architecture and production environment diagrams were clear, used conventional symbols, and had accompanying text elaboration.

The separate portals approach is a good choice for user clarity and ease of development, as well as for security purposes.

The vendor’s proposal contained screen shots that were useful for understanding and evaluating the system, and demonstrated a modern, easy to use user interface.

The Single-SignOn (SSO) for SOS/town users connects to State directory services. This is a good choice because security is enhanced by having employee status changes managed by the State. The solution employs multi-factor authentication for SOS/town users.

The hosting environment, the hosting platform, the database platform, and the coding platform (Microsoft .NET 6) each constitute technology familiar to the State. The use of proprietary software is appropriate; EMS solutions do not constitute a large market, so to our knowledge true Commercial Off The Shelf (COTS) solutions are not available.

All told, the architecture is modern and clearly designed. It comprehensively addresses the State’s requirements. Individual components can be updated without affecting the rest of the system. The system as designed would be likely to rectify many of the frustrations of the existing system.

## 6.1 STATE’S ENTERPRISE ARCHITECTURE GUIDING PRINCIPLES

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

<sup>3</sup> The ENR component is under development. Please see Section 7, Assessment of Implementation Plan.

The proposed solution all meets all current and currently anticipated SOS Elections needs. It reduces the excessive time Elections staff have had to spend on getting support from the current vendor, time which will now be available for business tasks.

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

The solution will maintain and continue to maintain compliance with all relevant federal and State requirements. It appears to be adaptable to changes in legislation, including redistricting, regulation, business need, and compliance standards. Voters, the general public, and media will have modern and more functional access to voting information.

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

The voting information contained in this solution, including data migrated from the prior system as well as new and current information, is essential to the functioning of a democracy. The solution will continue to support the use of and access to that information.

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#### 6.1.4 D. ASSESS IF THE TECHNOLOGY SOLUTION WILL OPTIMIZE PROCESS

The solution has the potential to improve process efficiencies for both SOS and town clerk functions. It does not significantly change the processes per-se.

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

Resilience-driven security refers to the practice of not only defending against known and anticipated threats, but also building systems that by their design intrinsically hardened against unknown threats. The proposed solution supports this architecturally in at least three ways: first, by having two separate portals for public and “internal” users, eliminating a common avenue of attack; second, by employing microservices, which by definition are separate and using lightweight protocols to communicate, thus reducing or eliminating the ability for changes caused by a bad actor in one service to affect the operation of another service; and three, by hosting the solution in Azure GovCloud which uses advanced security standards to minimize the attack surface.

## 6.2 SUSTAINABILITY

The solution architecture is apparently adaptable to changes in legislation, regulation, business need, and compliance standards. This should enhance the long-term usefulness of the solution.

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

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### 6.3.1 IT MODERNIZATION

The project is a modernization by replacement effort. Modernization takes place in the architecture, useability, and functionality realms.

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### 6.3.2 CYBERSECURITY & DATA PRIVACY

Please see Section 11, Security Assessment.

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### 6.3.3 VERMONT EXPERIENCE

The proposed solution would facilitate and improve voter registration processes by user interface streamlining, and increase Vermonters access to elections information, through functions such as ENR.

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### 6.3.4 FINANCIAL TRANSPARENCY

N/A

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

The solution is designed to be WCAG 2.1 Level “AA” compliant and will meet all standards required by the State and federal government.

### 6.5 DISASTER RECOVERY

The solution is configured with a mirror Disaster Recovery (DR) site in Azure GovCloud, with a continuously updated database. All the application components are deployed to run without any single point of failure. The database is continuously synchronized to the DR site database, which works as a stand-by database to the production environment. In case of primary database failure, the services are routed to the DR database automatically.

### 6.6 DATA RETENTION

The solution will comply with the Agency Specific Records Retention Schedule for SOS, found at [https://sos.vermont.gov/media/pgkexafv/secretaryofstate\\_recordschedule\\_current.pdf](https://sos.vermont.gov/media/pgkexafv/secretaryofstate_recordschedule_current.pdf).

### 6.7 SERVICE LEVEL AGREEMENT

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

The draft contract Attachment E Maintenance and Support Service Level Terms contains a list of supported maintenance activities, including clearly defined tasks for the Level 1 and Level 2 support teams, and definitions of the escalation protocol for the Levels. Incidents escalated to Level 2, as well as enhancement requests, are entered into a ticket system and addressed as shown in the following table:

Level	Severity	Issue	Response Time	Update Frequency
1	Critical	System currently not functioning, application is completely unavailable or severely impaired. Multiple users unable to access functionality. No suitable workaround available.	1 hour	Every 2 hours
2	Serious	System is not functioning properly, or a core component is no longer functional. Work can continue in an acceptable capacity with sufficient workaround.	4 hours	Daily
3	Moderate	System is functioning within acceptable design parameters, but a specific feature is not fully configured to specifications.	2 business days	Weekly
4	Minimal	Incident can be regarded as cosmetic or non-business essential.	5 business days	Bi-weekly

Additionally, the draft contract includes Key Performance Indicators (KPIs) delineated in two contract Exhibits:

#### Exhibit 5 – KPIs – APPLICATION

Lists 17 KPIs applicable to the Solution’s application within the production environment. These KPIs will provide an on-going evaluation of the following four (4) functional areas: Election Results, Public, State, and Town Clerk. The Contractor will establish an evaluation process for each KPI, using the Description Field, to measure the effectiveness of the Solutions functionality specifically related to Ease of Use. The Contractor will then provide these results to the State, based on the Desired Frequency related to each KPI.

#### Exhibit 6 – KPIs SECURITY OPERATIONS & INCIDENT REPORTING

Lists 13 KPIs are applicable to the Solution’s production environment. These KPIs will provide an on-going evaluation of the following seven (7) core components of operations and system monitoring: Analyst Skills, Cost of Value, Detection Success, Key Risks, Mitigation Success, Process Success, and Workload. The Contractor will establish an evaluation process for each KPI, using the related “What Do We Measure?” and “Possible Measurements” fields, to measure the effectiveness of its security operations and incident reporting processes. The Contractor will then provide these results to the State, on a recurring basis, agreed to by both parties.

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

Yes, there is sufficient detail and reasonable *response time* targets. There are no *resolution time* targets; the draft contract contains the following disclaimer:

*Disclaimer: The Contractor does not commit to specific timings for the final resolution of issues, as this will be dependent on the complexity and priority of the issue. Contractor will make every effort to provide a resolution by the next scheduled release or if necessary, an emergency patch for higher priority issues outside of the schedule release window, when possible.*

That seems reasonable.

## 6.8 SYSTEM INTEGRATION

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

Yes. The solution employs SQL Server Reporting Services, a system familiar to the State, to generate canned, configurable, and ad-hoc reports. Reports can be run in real time or scheduled to run at a pre-assigned date and time.

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

The solution may interface with the DMV and with the State's GIS provider. System integration has not been discussed and/or agreed to with these two agencies. DMV has an active project to replace its aging system and SOS has hopes to integrate the new DMV system to automate the transferal of voter registration records into new EMS system. (As yet, potential integration with VCGI (GIS) to automate EMS mapping has not been discussed.)

The external interface layer has the capacity to interface with any external source or destination potentially required by the State, such as external ENR, Social Security Administration(SSA), Electric Registration Information Center (ERIC), Melissa (address validation), etc.

#### **Additional Comments on Architecture:**

*none*

## 7 ASSESSMENT OF IMPLEMENTATION PLAN

The draft contract Attachment A, section 6.2, Project Major Phases, Warranty and Options, includes the following table:

Phase	Estimated Dates	Phase Description
<b>Initiation</b>	Aug 2023	Kick-off meeting, Planning, and preparation of project management planning documentation.
<b>Requirements Gathering</b>	--	Contractor performs necessary requirements gathering to finalize functional and technical requirements and identify gaps between State requirements and Solution capabilities. In this phase, at a minimum, the Contractor will complete outstanding current state analysis including data dictionary, data flows, transcribing functional requirements (found in Exhibit 1) into User Stories, business rules, process flows, reporting inventory, notices inventory and completion of the same for the future state.
<b>Implementation</b>	Aug – Nov 2023	Contractor installs and configures the Solution in a Test environment.
<b>Testing</b>	--	State subject matter experts perform Solution testing in in a test User Acceptance Testing (UAT) environment accordance with Contractor-developed Test plans.
<b>Training</b>	Dec 2023 – Sep 2024	Contractor performs training of State personnel (train the trainer or train the user).
<b>Legacy Data Migration</b>	Jan – Sep 2024	Contractor shall perform all necessary legacy data migrations using State-approved migration plan and data mapping templates.
<b>Deployment</b>	Dec 2024 – Feb 2025	Contractor implements the tested and State-approved Solution in the production environment for additional State testing and Go-Live.
<b>Post-Implementation Support/Warranty</b>	Mar 2025	Contractor shall be responsible for fixing all Defects found during the Warranty Period. All Defects found within the Warranty Period, shall be corrected by Contractor at no additional cost to the State.

These phases can be mapped to the following Milestone Payments table from section 7 (We are omitting the payment figures column for clarity):

Payment #	Month	Phase Completed	Scope of Work
1	0	Requirements Gathering	Requirements
2	4	Implementation	Design & Development
3	8	Implementation	Design & Development
4	12	Implementation	Design & Development
5	15	Training	System Testing, Training
6	18	Deployment	Quality Management, Implement/Deploy
7	21	Post-Implementation and Warranty (effectively constitutes the release of an informal "retainage")	Project Management, Defect Removal

The implementation period from contract execution to deployment is projected at 21 months, but not to exceed 24 months.

The draft contract Exhibit 2, Preliminary Implementation Master Schedule (IMS) contains a detailed narrative definition project implementation phases, in large part copied from the vendor's proposal. The narrative is a good description of the vendor's intended process and methods, but it is not in a usual implementation master schedule format. It includes a list of implementation phases different from the contract list in the table above, which could cause confusion, but we understand that the IMS will be updated to a more conventional schedule format.

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

## 7.1 THE REALITY OF THE IMPLEMENTATION TIMETABLE

The 21-month timeframe to deployment is reasonable, given the selected vendor's experience in implementing similar (but not identical) projects, and the narrative detail presented in the preliminary IMS. The selected vendor is already familiar with the rhythms of State election cycles and the reduced availability of State elections staff during certain times. We expect the State and the selected vendor will consider staff availability when defining a more detailed timeline.

As mentioned previously, the proposed vendor has offered to maintain the existing system until the new system goes live at no additional cost (except for hosting). The proposed vendor includes several team members who were central to implementing the existing system, when they were employed by the original vendor of the existing system. The project team is confident of the proposed vendor's capacity to do this, and enthusiastic about the prospect. However, there is no agreement to this effect currently drafted. We identified this as a risk **RISK\_ID#\_R3** to the timeline because the existing system M&O



could place time demands on the selected vendor's project manager, potentially interfering with the present project. Additionally, it seems to us that there is an expectation that an agreement will be reached, and if it is not, the State will continue to depend on an apparently unreliable existing vendor, which in turn could place an extra burden on elections staff availability. The State responded:

*The 3rd party contract with ReFrame Solutions to perform O&M services is outside scope of this contract and will have no negative impact on the EMS project. Appropriate language will be included in an agreement between ReFrame Solutions and O&M responsibilities and conflict resolution between current and future systems.*

We find this to be a reasonable response, but we assess that the impact could be moderate and the likelihood is unlikely but not rare.

Relatedly, the proposed vendor would use the same Team Leader as for M&O of the existing system as well as for the proposed system implementation. We identified this as a risk **RISK\_ID#\_R5** because there might be Interference with project progress if that individual becomes over-extended. The State responded:

*Include in the contract an agreement on appropriate recourse if the State in its discretion determines that the individual is over-extended.*

This is a good mitigation, and consequently we rate the likelihood of this risk being realized is rare, although the impact would be moderate.

## 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).*

The project team and leadership are very anxious to get a new system in place because of low confidence in the existing vendor and in the adaptability of the existing system and are ready to take on the time demands of implementation.

## 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
Schedule and Work Breakdown Structure (WBS)
Resource Management Plan
Communication Plan
System Configuration Management Plan

Change Control Plan
Conversion Plan
Implementation Plan
System Security Plan
System Installation / Availability Plan
System Testing Plan
Training Plan

Each deliverable is defined in sufficient detail. The definitions are derived from those suggested by the State, but the vendor has adjusted and revised them to more fully match the vendor’s style of work.

### 7.3.2 B. TRAINING

The vendor’s proposal puts significant emphasis on training. The vendor employs the ADDIE training model (Analyze, Design, Develop, Implement, and Evaluate), popular in the field of instructional design, wherein each phase produces deliverables to feed the next stage. The table below is the vendor’s high-level view of their training approach:

ADDIE Phase	Key Activities	Key Deliverables
Analysis	<ul style="list-style-type: none"> <li>Identify training audience</li> <li>Define training objectives through discussions with State’s project team</li> <li>Assess the needs for each role through review of impacts and stakeholder feedback.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder identification</li> <li>Training needs assessment</li> </ul>
Design	<ul style="list-style-type: none"> <li>Assess and select design and delivery methods</li> <li>Develop learning objectives for each role</li> <li>Establish training schedules</li> <li>Define activities for each role</li> </ul>	<ul style="list-style-type: none"> <li>Design document (curriculum outline by role, delivery methods, etc.)</li> <li>Templates for training materials</li> <li>List of training environment account conditions</li> <li>Refined training plan</li> </ul>
Development	<ul style="list-style-type: none"> <li>Develop training materials and training class schedule</li> <li>Secure resources</li> <li>Prepare and test training environment</li> <li>Conduct pilot through “train the testers”</li> <li>Evaluate training and revise materials</li> </ul>	<ul style="list-style-type: none"> <li>Training materials for State and Municipal users—manuals for each module, evaluations, etc.</li> <li>Tested training environment</li> <li>Feedback sheets for user lab exercises</li> <li>Engage Schedule online</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>Schedule training via Engage</li> <li>Training preparation and logistics</li> <li>End-user training</li> <li>Refine materials and support changes</li> </ul>	<ul style="list-style-type: none"> <li>Finalize training schedule</li> <li>Conduct Training</li> <li>Revised training materials</li> </ul>
Evaluation	<ul style="list-style-type: none"> <li>Define quality assurance and evaluation tools (summative evaluations)</li> <li>Conduct user evaluations</li> <li>Incorporate feedback into training materials</li> <li>Training remediation, if necessary</li> <li>Transfer training documents to Users</li> </ul>	<ul style="list-style-type: none"> <li>QA scorecard and performance evaluation results</li> <li>Final training materials</li> </ul>

The proposal continues with a detailed description of training scope by user, with accompanying matrix, and finally lists training materials:

- User Quick-Guides – Two-page quick guide with instructions for common activities to be performed by the average user will be provided in .PDF format.
- User Guide – complete user documentation of SVRS functionality provided including any backlog functionality provided post-production will be provided in searchable .PDF formats.
- Documentation – Administrative documentation of system features including but not limited to User Administration, System Monitoring, Work Queue Management, Report Queue Management, Interface Management, Correspondence Development/Updates, Troubleshooting, and other key topics will be provided in searchable .PDF formats.
- Chat Bot – Chat Box/Online “Assist” technology will be provided as an online tool to users to get instant support request assistance, which is built with a comprehensive decision tree and machine learning capabilities to understand the context and provide context related support.

All materials will be provided to the State for review and approval at least 2 weeks in advance of any training activity.

The training proposal is one of the more comprehensive we have seen. It would certainly meet the business needs of the State.

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### 7.3.3 C. TESTING

As solution components are configured by the vendor’s technical staff for subsequent deployment to the staging environment for system integration and user testing, the vendor’s technical leads will review the configuration and any solution modifications to ensure software source code meets development standards for the project as well as the design requirements (including performance measures) being implemented. If any item fails code review and testing the work item is returned to the technical staff for correction. Once completed updates have been tested and approved, the configuration is included in the next solution deployment build deployed in the User Acceptance Testing (UAT) environment for State acceptance.

The State’s significant advance work on business analysis and User Stories will provide a good basis for comprehensive UAT. The description of the vendor’s software testing and UAT process in the preliminary IMS is sufficiently detailed to expect good results.

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### 7.3.4 D. DESIGN

An 8-week Gap Analysis / Joint Design activity (see Phase 2 – Requirements Validation and Initial Configuration, in the preliminary IMS) of collaboration with the State develops results in process recommendations and functions specifications to guide the development of all system features including:

- Security architecture
- Technology components

- Workflow and configuration specifications
- Screens and views
- Fields and rules
- Dashboard and report parameters
- Correspondence and forms management
- Data migration and data transformation tasks
- Interfaces and data exports

The design process as described in the preliminary IMS is aligned with Agile development practice and is adequate at the current stage of the proposed project.

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### 7.3.5 E. CONVERSION (IF APPLICABLE)

Because much of the elections data in the system must be retained for a very long time, it will be necessary to migrate data from the existing system to the new solution. The proposed vendor will require a data dump of the current system and access to the source code. The existing vendor has indicated to the State that this would be difficult and would incur additional cost. We identified this as a risk **RISK\_ID#\_R4\_** to cost and potentially project delay. The project team's confidence in the existing vendor is so low that they fear that if the existing vendor performs the extraction they might "break the system." The State responded:

*As part of the 3rd party contract with ReFrame Solutions to take over O&M responsibilities from the current vendor, the State will include language in that contract to identify a data dictionary as a deliverable of the contract services.*

The response is fine, but again we would point out that this project is partially dependent on an agreement which to our knowledge has not yet been drafted.

The vendor proposes the following phases for conversion:

- Data Conversion Prerequisites
- Legacy and Target Database Analysis
- Data Conversion Planning
- Data Mapping Document Preparation
- Development of Conversion Program
- Anomalies Reporting
- Conversion Execution & Reporting
- Validation and Verification Process

Each stage has a process description in the proposal. They are carefully designed according to best practices and are likely to meet the business needs of the State.

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### 7.3.6 F. IMPLEMENTATION PLANNING

As described above, the vendor's detailed narrative of implementation gives sufficient assurance that the deliverables will meet the State's business needs.

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### 7.3.7 G. IMPLEMENTATION

As described above, the vendor's detailed narrative of implementation gives sufficient assurance that the deliverables will meet the State's business needs.

### 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?

The State has hired a project manager contracted from a firm holding a retainer service contract with the State. The State has high confidence in the quality of work from individuals hired from that firm.

**Additional Comments on Implementation Plan:**

*Although not strictly an implementation issue, I did not find a payment schedule for M&O in the contract (although the amounts per year are in Exhibit 5). The Milestone Payments schedule similarly does not include software licensing or hosting costs.*

## 8 COST ANALYSIS AND MODEL FOR BENEFIT ANALYSIS

### 8.1 ANALYSIS DESCRIPTION:

*Provide a narrative summary of the cost benefit analysis conducted.*

Tangible benefits were determined by comparing proposed project costs to existing project costs over the lifecycle. See Section 8.4, below. Intangible benefits were derived from elections staff interviews and the IT ABC Form.

### 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.*

- 1. Tangible Cost: \$6,708,001.00**
- 2. Tangible Cost State funds only: \$928,800.20**
- 3. Average tangible increase in annual M&O cost: \$342,700.00**
- 4. Average tangible benefit in annual M&O State funds only: \$260.00**

#1 represents the difference between the cost of the project over the entire lifecycle compared to the cost of a hypothetical existing system operating over the same period. (1 year implementation + 6 years M&O = 6 years).

#2 is the same calculation as #1 if only State funds are considered.

#3 represents the difference between the cost of M&O over the entire lifecycle compared to the cost of a hypothetical existing system operating over the same period. (The M&O period during implementation is considered part of implementation cost.)

#4 is the same calculation as #3 if only State funds are considered.

## 8.5 INTANGIBLE COSTS & BENEFITS:

*Provide a list and descriptions of the intangible costs and benefits. It is "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:

Table 10 - Intangible Benefits

Benefit	Measure
<b>This project will bring the elections platform further into alignment with the state's strategic plan for Government Modernization and Efficiency: Data and Cyber Security</b>	This will be measured through compliance with the NIST Cyber Security Framework. Non-functional requirements will be provided to the vendor(s) via the RFP process and built into the contract vehicle, establishing an initial review (prior to implementation) and additional annual reviews by vendor and the state
<b>A more reliable and resilient EMS retaining all the required functions of the existing system and adding significant new features.</b>	Measured by deployment of a system meeting that definition.
<b>A more reliable Election Night Results (ENR) portal.</b>	Testing shows that portal is resilient under changing conditions
<b>An EMS more easily adaptable to changes in needs, such as redistricting.</b>	Measured by UAT using the developed User Stories.
<b>A more reliable and responsive EMS M&amp;O vendor</b>	Measured by elections staff assessment
<b>Improved useability and access to information for Vermont voters</b>	
<b>Improved useability for town clerks</b>	Feedback from clerks

## 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. The proposed project was always expected to be expensive in relation to continuing the existing system. (see 8.7 IT ABC Form Review, below.) The existing system is increasingly unreliable and the State

has lost confidence in the vendor maintaining it. The State of Vermont absolutely requires a functional, updateable, and reliable EMS maintained by a responsive vendor to conduct statewide elections in a manner compliant with federal and State law. The intangible benefits primarily derive from acting on that need. Also, federal funds are available, making this a good time to develop and implement the proposed project.

#### 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 executed at a time when the State intended to procure an EMS with lobbying and campaign finance management functions as well. Consequently, some of the narrative is different. The estimated costs are not that far off – the cost of the proposed project is 38% more than the estimated cost on the IT ABC form. The lifecycle is appropriate and quite common across State projects.

#### **Additional Comments on the Cost Benefit Analysis:**

*none*



## 9 ANALYSIS OF ALTERNATIVES

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

N/A

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

The obvious alternative technical solution (other than the choice of a different vendor) would be to continue to use the existing system. Doing so would also continue and exacerbate the support and performance problems which led to the proposed project in the first place. The selected vendor for the proposed project will likely be engaged to take over M&O of the existing system, as they have the requisite intimate knowledge of the system to do so. That was on offer as part of the proposed project only as a temporary measure to keep the existing system running while the new system was built.

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

N/A

## 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	Year 6	Total
<b>Total Project Cost</b>	\$5,080,501.00	\$548,700.00	\$486,200.00	\$423,700.00	\$361,200.00	\$323,700.00	\$323,700.00	<b>\$7,547,701.00</b>
<b>Current Cost</b>		\$103,200.00	\$103,200.00	\$103,200.00	\$103,200.00	\$103,200.00	\$103,200.00	<b>\$516,000.00</b>
<b>Total Cost</b>	\$5,080,501.00	\$445,500.00	\$383,000.00	\$320,500.00	\$258,000.00	\$220,500.00	\$220,500.00	<b>\$6,928,501.00</b>

Table 12 - Project Lifecycle Cumulative Costs

	Procurement	M&O Year 1	M&O Year 2	M&O Year 3	M&O Year 4	M&O Year 5	M&O Year 6
<b>Project Cost Cumulative</b>	\$5,080,501.00	\$5,629,201.00	\$6,115,401.00	\$6,539,101.00	\$6,900,301.00	\$7,224,001.00	<b>\$7,547,701.00</b>
<b>Current Costs Cumulative</b>		\$103,200.00	\$206,400.00	\$309,600.00	\$412,800.00	\$516,000.00	<b>\$619,200.00</b>
<b>Cumulative Cost Savings</b>	<b>-\$5,080,501.00</b>	<b>-\$5,526,001.00</b>	<b>-\$5,909,001.00</b>	<b>-\$6,229,501.00</b>	<b>-\$6,487,501.00</b>	<b>-\$6,708,001.00</b>	<b>-\$6,928,501.00</b>

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

Table figures were determined by comparing proposed project costs to existing project costs over the project Lifecycle.

Assumptions for the analysis:

- That vendor costs for implementation and M&O will be as memorialized in the contract Exhibit 5.
- That estimates of State and contract labor rates and time needed are accurate.
- That existing system annual cost is accurate.
- That existing system annual costs would continue at the same level over the lifecycle.
- That federal funding will be available as stated.

## 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 project would be supported in part by Federal Funding in the following proportions:

- Procurement and Implementation: Federal 80%, State 20%
- Maintenance and Operations: Federal 80%, State 20%

The table below delineates these allocations.

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	M&O Year 6	Total
<b>Total Project Cost</b>	\$5,080,501.00	\$548,700.00	\$486,200.00	\$423,700.00	\$361,200.00	\$323,700.00	\$323,700.00	\$7,547,701.00
<b>Federal Share of Cost</b>	\$4,064,400.80	\$438,960.00	\$388,960.00	\$338,960.00	\$288,960.00	\$258,960.00	\$258,960.00	\$5,779,200.80
<b>State Share of Cost</b>	<b>\$1,016,100.20</b>	<b>\$109,740.00</b>	<b>\$97,240.00</b>	<b>\$84,740.00</b>	<b>\$72,240.00</b>	<b>\$64,740.00</b>	<b>\$64,740.00</b>	<b>\$1,444,800.20</b>

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

**There is no break-even point for this activity when the full project cost is considered**, as is common for modernization/replacement projects.

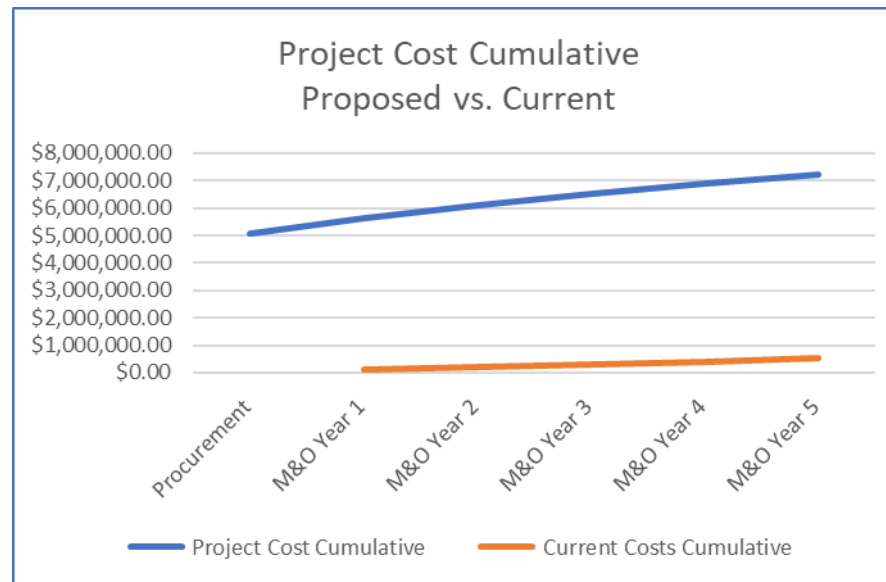
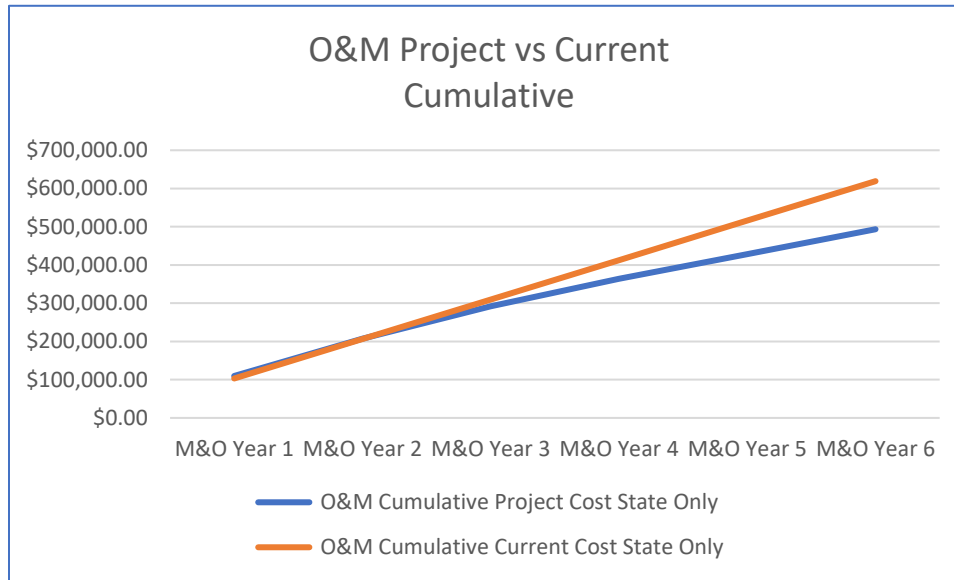


Figure 1 - Cumulative Cost Impact over Lifecycle

	M&O Year 1	M&O Year 2	M&O Year 3	M&O Year 4	M&O Year 5	M&O Year 6
<b>O&amp;M Cumulative Project Cost State Only</b>	\$109,740.00	\$206,980.00	\$291,720.00	\$363,960.00	\$428,700.00	\$493,440.00
<b>O&amp;M Cumulative Current Cost State Only</b>	\$103,200.00	\$206,400.00	\$309,600.00	\$412,800.00	\$516,000.00	\$619,200.00



Considering only State costs (i.e., excluding federal contributions) for Maintenance & Operations, the breakeven point is reached in the second year of M&O.

## 11 SECURITY ASSESSMENT

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

The descriptive information below is largely derived from the vendor's description of the solution.

At the application level, all user interfaces, processes, and entities are designed to be accessed through the Authorization module which provides access based on configurable roles. Routing logic ensures unauthorized users are directed away from protected pages. Multi-factor authentication is used to ensure access to critical components. The application logic is written to handle XSS, SQL injection attacks using client and server-side input validations, query parameterization, etc.

JSON Web Tokens (JWT) ensure API level security allowing access to only authorized resources to the authenticated users. The database is accessible only to the administrator and entity privileges are defined in database such that only authorized accounts can view/update the records. Sensitive data is encrypted while stored in the database and decrypted on the fly.

All layers and tiers run under different security contexts and are secured using a "default deny" approach. Network services and their ports are secured, and only designated IPs are allowed access. For e.g., the DB is allowed access only from the application services only through the given port.

From a code perspective, the security of systems and applications developed by the vendor is addressed at all layers and tiers including, but not limited to:

- All user interfaces, processes, and entities are designed to be accessed through the Authorization module which provides access based on configurable roles.
- Routing logic ensures unauthorized users are directed away from protected pages.
- Multi-factor authentication is used to further limit access to critical components or PII.
- The application logic is written to handle XSS, SQL injection attacks using client and server-side input validations, query parameterization, etc.
- JWT tokens ensure API level security allowing access to only authorized resources to the authenticated users.
- Database is accessible only to the administrator and entity privileges are defined in the database such that only authorized accounts can view/update the records.
- Sensitive data is encrypted while stored in the database and decrypted on the fly.
- All layers and tiers run under different security contexts and are secured using a "default deny" approach.
- Network services and their ports are secured, and only designated IPs are allowed access (i.e. The DB server is allowed access only from the application server only through the given port).

The selected vendor makes at least the following security testing commitments:

Table 14 - Vendor's Security Testing Commitments

Testing Component	Recommended Frequency
Cybersecurity Training for all vendor resources on the Project	Upon project onboarding and Annually at a minimum
Secure Coding Practices and Monitoring with SonarQube	Ongoing throughout development and code checking
Standard Penetration/Vulnerability Testing after each Sprint using Qualys	After each Sprint and/or release to Testing Environment
Ongoing security Monitoring using third-party such as Site 24/7	Ongoing Real-Time in Test and Production Environments
Third-Party Static Code Review	At the start of UAT, Upon Go-Live, and Annually
Third Party External Penetration Testing	At the start of UAT, Upon Go-Live, and Annually
Third-Party Web Application Vulnerability Testing	At the start of UAT, Upon Go-Live, and Annually
Supply Chain Assessment and Monitoring	Annually
Incident Monitoring and Response	Ongoing
Other State-sponsored Security Testing (An Independent Systemwide Security Controls Assessment is performed annually, and the results reported to the State.)	As performed by the State

Vulnerability scanning takes place throughout the entire project using the Qualys scan tool.

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

### Assessment

The information above, combined with the statements below, indicate a vendor who is security conscious and aligned with the State on security mechanisms and practices. Their responses to RFP security-related non-functional-requirements (NFRs) were sufficiently comprehensive and transparent.

The system would be resilient and well-secured, with measured and reported performance. Proper controls would be in place to defend the information contained in the system.

#### 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. The vendor states:

*While ReFrame Solutions is not officially certified yet by these organizations (Which we have a corporate roadmap for over the next 18 months), our policies and procedures provided throughout this response are firmly routed [sic] in both ISO27001 and NIST-800 controls and guidelines, and we have added several security partners such as Raytheon Corporation that has numerous State, Federal and Security Framework certifications in their mission to protect the nation's defense systems and other critical infrastructures, and Ingalls and Reversing Labs that bring SOC 2 Type 2 and other relevant certifications. In addition, we utilize the secure Azure Gov Cloud for all development and hosting activities which provides FedRAMP, SOC 2 and a myriad of other certifications to our overall proposed solution.*

The vendor's proposal lists specific security controls for ISO 27001, NIST Cybersecurity Framework (CSF), and CISecurity Cybersecurity Controls version 8.

#### 11.2 WHAT METHOD DOES THE SYSTEM USE FOR DATA CLASSIFICATION?

The proposed system uses compliance standards for classifying data. The State has identified 3 types of classified data that the system would contain: Publicly available information, Confidential Personally Identifiable Information (PII), and Personal Information from Motor Vehicle Records. The vendor's solution is already compliant with the first two, and the latter would be implemented in the DMV interface.

#### 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 vendor's risk management process is described in the proposal, and includes risk identification, analysis, tracking, mitigation, escalation, and closure. The description in the proposal primarily refers to overall project risk, whether security-related or not. But it seems clear from the security controls employed that the process would apply equally to information security risks.

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

Encryption of data in transit is conducted using Transport Layer Security (TLS) v1.2 or higher for all application Services, System(s), and any related deliverables. All data in transit are encrypted using Advanced Encryption Standard (AES) 256-bit or higher encryption algorithms. Data at rest is encrypted using the Advanced Encryption Standard (AES) 256-bit or higher encryption algorithms. Access control to



the encrypted data is granted based on an explicit authorization by the Data Owners and IT Security. Access control is enforced through authentication, authorization, and auditing of access to the data.

**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?**

Continuous vulnerability management is a part of CISecurity Cybersecurity Controls. (See 11.1 above.)

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

See 11.1 above.

**11.8 FURTHER COMMENTS ON SECURITY**

***none***

## 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 our evaluation of the State response.

There may be gaps in the risk numbering, to maintain consistency with earlier versions.

---

### 12.1.1 ADDITIONAL COMMENTS ON RISK

**none**

### 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 <b>(probability X impact ratings)</b> ( <i>see below</i> ).	
	<b>1-9 = low</b>	See table below
	<b>10-48 = moderate</b>	
<b>49-90 high</b>		
Probability:	Assessment of likelihood of risk occurring, scale of <b>1,3,5,7, or 9</b> , from least to most likely	
Impact:	Assessment of severity of negative effect, scale of <b>1,3,5,7, or 10</b> , 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 <i>avoid, mitigate, or accept</i> 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

Risk ID: R3	Rating:	15	
	Likelihood:	3	
	Impact:	5	
Finding:	The proposed vendor has offered to maintain the existing system until the new system goes live at no additional cost (except for hosting). The proposed vendor includes several team members who were central to implementing the existing system, when they were employed by the original vendor of the existing system. The project team is confident of the proposed vendor's capacity to do this, and enthusiastic about the prospect. However, there is no agreement to this effect currently drafted		
Risk Of:	This could be a positive risk, in if engaging the proposed vendor could save money for the State; or it could be a negative risk if the State implies an understanding without a formal agreement.		
Risk domains:	compliance with State procurement requirements, project timeline, project cost		
State's Planned Risk Response:	The 3rd party contract with ReFrame Solutions to perform O&M services is outside the scope of this contract and will have no negative impact on the EMS project. Appropriate language will be included in agreement between ReFrame Solutions and O&M responsibilities and conflict resolution between current and future systems.		
Reviewer's Assessment of State's Planned Response	concur		

Risk ID: R4	Rating:	9	
	Likelihood:	3	
	Impact:	3	
Finding:	The proposed vendor will require a data dump of the current system and access to the source code. The existing vendor has indicated to the State that this would be difficult and would incur additional cost.		
Risk Of:	Additional cost, project delay		
Risk domains:	cost, timeline		
State's Planned Risk Response:	As part of the 3rd party contract with ReFrame Solutions to take over O&M responsibilities from the current vendor, the State will include language in that contract to identify a data dictionary as a deliverable of the contract services.		
Reviewer's Assessment of State's Planned Response	concur		

Risk ID: R5	Rating:	5	
	Likelihood:	1	
	Impact:	5	
Finding:	If the State and the proposed vendor agree that the proposed vendor will maintain and support the existing system during implementation of the new system (see above), the proposed vendor will use the same Team Leader as for the proposed system implementation.		
Risk Of:	Interference with project progress if that individual becomes over-extended		
Risk domains:	timeline		
State's Planned Risk Response:	In section 5.1.3. & 5.1.4. of the EMS Contract, Attachment A, the Technical Architect/Manager is listed by name and that position is listed as a critical position (i.e., no changes during active project). Although Contractor has indicated the Technical Architect/Manager listed will also be the lead for the O&M vendor transfer of current system and ongoing support, the State has low-level concerns. The Contractor is aware of our concerns and has indicated this dual role will not impact implementation of the EMS Solution.		
Reviewer's Assessment of State's Planned Response	concur		

## 13 ATTACHMENTS

**Attachment 1 – Cost Spreadsheet**

**Attachment 2 – Risk Register**

Attachment 1: SOS Elections IR Cost Spreadsheet ver. 4.0.a - Paul Garstki Consulting - 2023/06/28

Project Name:			VDOL Workforce Development System								Lifecycle Total @ Current Annual Cost	Benefit	
Description	Qty	Unit Price	Implementation	Maintenance & Operation	Maintenance & Operation	Maintenance & Operation	Maintenance & Operation	Maintenance & Operation	Maintenance & Operation	Total			
Fiscal Year			18 months	FY1	FY2	FY3	FY4	FY5	FY6				
<b>Software Licensing</b>													
Enterprise Application: License Fees			\$ 250,000.00								\$ 250,000.00		
<b>Software Licensing Total</b>			<b>\$ 250,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 250,000.00</b>	<b>\$ -</b>	<b>\$ (250,000.00)</b>
<b>Vendor Implementation Services</b>													
Project Management			\$ 633,731.87								\$ 633,731.87		
Requirements			\$ 422,487.61								\$ 422,487.61		
Design (Architect Solution)			\$ 422,487.61								\$ 422,487.61		
Development (Build, Configure or Aggregate)/Testing			\$ 1,267,462.83								\$ 1,267,462.83		
System Testing			\$ 725,340.41								\$ 725,340.41		
Defect Removal			\$ 211,244.26								\$ 211,244.26		
Implement/Deploy or Integrate			\$ 211,244.26								\$ 211,244.26		
Quality Management			\$ 211,244.26								\$ 211,244.26		
Training			\$ 119,634.89								\$ 119,634.89		
Hosting Fees			\$ 86,850.00								\$ -		
<b>Vendor Implementation Services Total</b>			<b>\$ 4,311,728.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 4,311,728.00</b>	<b>\$ -</b>	<b>\$ (4,311,728.00)</b>
<b>Vendor Annual Costs</b>													
Support and Maintenance Fees				\$ 375,000.00	\$ 312,500.00	\$ 250,000.00	\$ 187,500.00	\$ 150,000.00	\$ 150,000.00		\$ 1,425,000.00		
Hosting Fees				\$ 173,700.00	\$ 173,700.00	\$ 173,700.00	\$ 173,700.00	\$ 173,700.00	\$ 173,700.00		\$ 1,042,200.00		
<b>Vendor Licensing Total</b>			<b>\$ -</b>	<b>\$ 548,700.00</b>	<b>\$ 486,200.00</b>	<b>\$ 423,700.00</b>	<b>\$ 361,200.00</b>	<b>\$ 323,700.00</b>	<b>\$ 323,700.00</b>	<b>\$ -</b>	<b>\$ 2,467,200.00</b>	<b>\$ 516,000.00</b>	<b>\$ (1,951,200.00)</b>
<b>State-Provided Licensing</b>													
[none]													
<b>State-Provided Licensing Total</b>			<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Professional Services</b>													
Contracted Services for Project Management			\$ 187,500.00								\$ 187,500.00		
Contracted Services for Business Analyst			\$ 150,000.00								\$ 150,000.00		
Independent Review			\$ 17,769.00								\$ 17,769.00		
<b>Professional Services Total</b>			<b>\$ 355,269.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 355,269.00</b>	<b>\$ -</b>	<b>\$ (355,269.00)</b>
<b>Training</b>													
[included in Vendor Implementation Services above]			0								\$ -		
<b>Training Total</b>			<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Implementation Services Additional</b>													
[none]											\$ -		
<b>Implementation Services Total</b>			<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>State Personnel</b>													
ADS EPMO Project Oversight & Reporting			\$ 9,504.00								\$ 9,504.00		
ADS Enterprise Architect Staff for implementation			\$ 52,800.00								\$ 52,800.00		
ADS Security Staff for implementation			\$ 66,000.00								\$ 66,000.00		
ADS Quality Assurance Services for implementation			\$ 35,200.00								\$ 35,200.00		
<b>State Personnel Total</b>			<b>\$ 163,504.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 163,504.00</b>	<b>\$ -</b>	<b>\$ (163,504.00)</b>
<b>Grand Total</b>			<b>\$ 5,080,501.00</b>	<b>\$ 548,700.00</b>	<b>\$ 486,200.00</b>	<b>\$ 423,700.00</b>	<b>\$ 361,200.00</b>	<b>\$ 323,700.00</b>	<b>\$ 323,700.00</b>	<b>\$ -</b>	<b>\$ 7,547,701.00</b>	<b>\$ 516,000.00</b>	<b>\$ (6,868,197.00)</b>

NOTES / ASSUMPTIONS:

Notes:  
 1.



**ATTACHMENT 2 - SOS ELECTIONS MGT INDEPENDENT REVIEW -- Risk and Issues Register -- version 3.0.a 2023/July/17-- 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, or 10	1-9 low
									10-48 medium
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
R3	The proposed vendor has offered to maintain the existing system until the new system goes live at no additional cost (except for hosting). The proposed vendor includes several team members who were central to implementing the existing system, when they were employed by the original vendor of the existing system. The project team is confident of the proposed vendor's capacity to do this, and enthusiastic about the prospect. However, there is no agreement to this effect currently drafted	This could be a positive risk, in if engaging the proposed vendor could save money for the State; or it could be a negative risk if the State implies an understanding without a formal agreement.	project timeline, project cost	The 3rd party contract with ReFrame Solutions to perform O&M services is outside scope of this contract and will have no negative impact to the EMS project. Appropriate language will be included in agreement between ReFrame Solutions and O&M responsibilities and conflict resolution between current and future systems.	MITIGATE:  Negotiate appropriate agreement in proposed contract.		3	5	15
R4	The proposed vendor will require a data dump of the current system and access to the source code. The existing vendor has indicated to the State that this would be difficult and would incur additional cost.	Additional cost, project delay	cost, timeline	As part of the 3rd party contract with ReFrame Solutions to take over O&M responsibilities from the current vendor, the State will include language in that contract to identify a data dictionary as a deliverable of the contract services.	AVOID:  If the existing vendor contract includes Attachment D (Section 13) unmodified, then presumably they agree that: "Contractor shall reasonably cooperate with other parties in connection with all services to be delivered under this Contract, including without limitation any successor provider to whom State Materials are to be transferred in connection with termination. Contractor shall assist the State in exporting and extracting the State Materials, in a format usable without the use of the Services and as agreed to by State, <b>at no additional cost.</b> " [emphasis added] Seek State legal assistance if needed.		3	3	9
R5	If the State and the proposed vendor agree that the proposed vendor will maintain and support the existing system during implementation of the new system (see above), the proposed vendor will use the same Team Leader as for the proposed system implementation.	Interference with project progress if that individual becomes over-extended	timeline	In section 5.1.3. & 5.1.4. of the EMS Contract, Attachment A, the Technical Architect/Manager is listed by name and that position is listed as a critical position (i.e., no changes during active project). Although Contractor has indicated the Technical Architect/Manager listed will also be the lead for the O&M vendor transfer of current system and ongoing support, the State has low-level concerns. The Contractor is aware of our concerns and has indicated this dual role will not impact implementation of the EMS Solution.	MITIGATE:  Include in the contract an agreement an agreement on appropriate recourse if the State in its discretion determines that the individual is over-extended.		1	5	5
<b>ISSUES</b>	<b>Issue Description</b>			<b>State Response</b>					