



## Independent Review

Network Replacement Project  
for the  
Vermont Judiciary



**Submitted  
April 18, 2023**

**Final**

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## 1.0 Executive Summary

For all Information Technology (IT) activities over \$1,000,000, Vermont statute (or at the discretion of the Chief Information Officer [CIO]) requires an Independent Review by the Office of the CIO before the project can begin. The Vermont Judiciary has adopted this review process as a best practice, and as such has retained BerryDunn to conduct an Independent Review to evaluate the replacement of their network infrastructure, which is currently primarily supported by Agency of Digital Services (ADS), with a modern network infrastructure that will be wholly managed by the Judiciary.

A State of Vermont Judiciary Security Risk Assessment Report was published on March 30, 2023. In that report, the National Center for State Courts (NCSC) cited the Judiciary's lack of visibility into the ADS network, lack of control over network functions, and the lack of protocol for ADS to prioritize the Judiciary's urgent requests for assistance as concerns that the Judiciary should address. Additionally, the Judiciary has indicated that they seek to achieve the following business objectives through the Network Replacement Project:

- Assume control over the delivery system of Odyssey and Webex so that Vermont Judiciary can gain ownership and accountability for the network and other core technologies required to meet its responsibilities to the State of Vermont and its constituencies.
- Implement a dedicated network connectivity and infrastructure that will not contend with traffic from other statewide agencies, thus increasing the available bandwidth and speed of the network. The results of this are expected to significantly increase reliability and performance of the Judiciary's applications and help ensure the reliable and timely service delivery.
- Incorporate layers of security into this dedicated network and eliminate the cyber exposure of a multi-tenant, shared network while complying with CJIS data protective regulations.

The network architecture described in the C2 proposal provided by the Judiciary aligns with industry best practices, increases availability and redundancy, reduces overall risk, and increases access to justice.

The C2 proposal does not adequately provide detailed breakdown of costs by deliverable, and BerryDunn recommends that the Judiciary consider this prior to executing a contract.

Additionally, on April 10, 2023, the Judiciary provided BerryDunn with an alternate proposal for comparison purposes. Both the C2 and this alternate proposal meet all defined goals for the project; the proposals are technically very similar. The alternate proposal was approximately \$2.4m less over five years than the C2 proposal, but the alternate proposal has not yet been formalized.

The C2 solution should have a positive impact on net operating costs after the initial implementation period, saving the Judiciary an average of \$768,718 annually during FY25

through FY29. Initial implementation costs, however, result in an anticipated breakeven point in FY31.

## 1.1 Cost Summary

Table 1.1 includes a summary of the costs. More detail can be found in Section 5: Acquisition Cost Assessment and Section 10: Impact Analysis on Net Operating Costs.

**Table 1.1: Cost Summary**

IT Activity Life Cycle (FY24 – FY29)	Cost and Funding Source
Total Life Cycle Costs (Implementation + New Operating)	\$15,268,165
Total Implementation Costs (FY24)	\$6,956,363
Total New Lifecycle Operating Costs (FY25 – FY29)	\$8,311,400
Current Operating Costs (FY25 – FY29)	\$12,154,988
Difference Between Current and New Operating Costs (FY25 – FY29)	\$3,843,588 savings
Funding Source(s) and Percentage Breakdown of Multiple Sources	100% State funds

## 1.2 Disposition of Independent Review Deliverables

Table 1.2 includes a summary of the Independent Review findings as elaborated later in the report.

**Table 1.2: Independent Review Deliverables**

Deliverable	Highlights From the Independent Review Including Explanations of Any Significant Concerns
Acquisition Cost Assessment	The total acquisition, implementation, and operational cost for FY24 through FY29 (initial implementation in FY24, operations for FY25 – FY29) is \$15,268,165. Based on BerryDunn’s research and assessment of acquisition cost, the Judiciary appears to be paying comparable costs to others in the market.
Technology Architecture and Standards Review	In accordance with the Judiciary’s requirements, C2’s IT Network Replacement proposal aligns with the State’s IT Strategic Principles; however, the Judiciary did not solicit C2 via competitive proposal. C2 did submit a technical proposal for BerryDunn to review as part of this Independent Review. However, BerryDunn has not identified the lack of a competitive procurement and formal technical proposal as risks for the following reasons: <ul style="list-style-type: none"> <li>C2 is intimately familiar with the Vermont Judiciary’s network infrastructure and the issues that exist with the current design.</li> </ul>

Deliverable	Highlights From the Independent Review Including Explanations of Any Significant Concerns
	<ul style="list-style-type: none"> <li>The C2 proposal aligns with the State’s principal of leveraging shared services and cloud-based IT to take advantage of economies of scale.</li> <li>The C2 proposal is based on state-of-the-art hardware and technology to address the long-term viability of the State’s investment.</li> </ul>
Assessment of Implementation Plan	<p>The 12-month implementation timeline should be sufficient for completing a project of this size and scope. C2 Xerox’s implementation methodology divides implementation into two concurrent workstreams: network connectivity and Microsoft infrastructure, which seems appropriate for this project. The Judiciary has allocated resources to the implementation and identified resource backups where additional support is expected. The training approach addresses technical training only, as end-user training is not required for this project. The implementation go-live approach is sound.</p>
Cost-Benefit Analysis	<p>Operational costs after initial implementation are expected to decrease by an annual average of \$768,718 over five years. The cost during the implementation period (12 months; FY24) is expected to exceed the current operational costs for that year by \$4,877,663). Because of this, the costs of the project outweigh the tangible (cost) benefits through FY29, with an anticipated breakeven point in FY31. Many of the intangible benefits will not be realized until the Judiciary has implemented and acclimated to the replacement network environment. The combination of tangible and intangible benefits of the replacement network should ultimately outweigh the system costs, particularly as the Judiciary is able to realize operational efficiencies over the lifecycle of the system.</p>
Analysis of Alternatives	<p>On April 10, 2023, the Judiciary provided BerryDunn with an alternate proposal for comparison purposes. Both the C2 and this alternate proposal meet all defined goals for the project; the proposals are technically very similar. The primary difference is that the alternate proposal included Cisco as the hardware solution, including telephony. This is relevant since the Judiciary IT staff do not currently have Cisco-certified staff, meaning that they would rely much more heavily on the vendor for support after implementation. This could result in increased costs over the C2 proposal.</p>
Impact Analysis on Net Operating Costs	<p>With the implementation of the replacement network, the ADS costs and C2 managed services (as currently designed) will cease, but the cybersecurity assessments and testing will continue. Additionally, the Judiciary will pay networking costs and software that they are currently not paying for or were included in the ADS chargeback.</p>

Deliverable	Highlights From the Independent Review Including Explanations of Any Significant Concerns
	These include call center software, Adobe Acrobat, Microsoft Office 365, and Microsoft SQL Server. After the initial implementation year, in which there are significant expenditures related to hardware acquisition and professional services to provision the new network, the Judiciary will experience an average decrease in annual costs of \$768,718 over five years. Every five years the cost will increase because the hardware refresh. Over five years, the new network will have a negative impact on net operating costs due to the initial costs of hardware, software, and professional services.
Security Assessment	The C2 Network Replacement project is designed to meet or exceed the functional, technical, and security requirements; including CJIS compliance.

### 1.3 Identified High Impact and/or High Likelihood of Occurrence Risks

Table 1.3 provides summaries of high impact and/or high likelihood of occurrence risks, including the Judiciary’s planned risk response, and BerryDunn’s assessment of the Judiciary’s planned risk response. A complete Risk Register, detailing all four risks, is included in Attachment 2.

**Table 1.3: Project Risk Summaries**

Risk ID	Risk Description	State’s Planned Risk Response	Reviewer’s Assessment of Planned Response
1	Proposed Implementation and Cost Proposal is not granular enough to hold the vendor accountable	The Judiciary plans to mitigate this risk. During the contracting phase of the project, the selected vendor will be required to propose payment milestones. The Judiciary plans to hold 10% back from each payment milestone to ensure satisfactory completion of the project.	The Judiciary’s response to this risk seems reasonable and feasible.
2	Lack of Competitive Proposals may result in the Judiciary paying more than it should	The Judiciary plans to mitigate this risk. The Judiciary has also engaged another vendor for a competitive proposal. To mitigate this risk, we plan to review the proposals and choose the best vendor for the	The Judiciary’s response to this risk seems reasonable and feasible. The Judiciary provided BerryDunn with a copy of the alternate proposal, and the Judiciary’s current

Risk ID	Risk Description	State's Planned Risk Response	Reviewer's Assessment of Planned Response
		plan based on technology solutions and cost.	plan (to proceed with C2) seems appropriate.
3	TSC IT Director playing the Project Manager Role may decrease his effectiveness in his current and project role for the 12 months of implementation	The Judiciary plans to mitigate this risk. The Judiciary has identified that an internal project manager would be critical to the success of this project. As the sponsor for the project the IT Director will oversee the project management activities	The Judiciary's response to this risk to engage a subcontractor resource to act as the project manager for this engagement seems reasonable and feasible.
4	Detailed Test Plan was not included in C2's proposal. This could be a risk for project completion if that detailed plan is not developed before implementation.	The Judiciary plans to mitigate this risk. During the contracting phase payment milestones will be accepted after satisfactory test plans have been conducted. These test plans will be developed during the architecture and project planning phase of the project.	The Judiciary's response to this risk seems reasonable and feasible. BerryDunn further recommends that the contract with the preferred vendor include specific language regarding deliverable review and acceptance procedures and timing.

### 1.4 Other Key Issues

No other key issues were identified.

### 1.5 Recommendation

BerryDunn recommends the Judiciary continue with its acquisition and implementation of a replacement network infrastructure.

### 1.6 Report Acceptance

#### 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 BerryDunn by the Judiciary.



*Signature*

4/18/2023

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**Independent Reviewer Signature**

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**Date**

## 2.0 Scope of This Independent Review

### 2.1 In Scope

The scope of this document follows the guidelines provided in Vermont Statute, Title 3, Chapter 56, §3303(d).

The Independent Review Report includes:

- An acquisition cost assessment
- A technology architecture review and standards review
- An implementation plan assessment
- A cost analysis and model for benefit analysis
- A high-level analysis of alternatives
- An impact analysis on net operating costs for the agency carrying out the activity
- A security assessment

This Independent Review used the following schedule:

- Week of February 27, 2023: Conduct project initiation, schedule interviews, provision KnowledgeLink site; Judiciary provide available documentation
- Week of March 6, 2023: Review documentation, develop interview questions
- Week of March 13, 2023: Conduct interviews, document initial findings, begin drafting Independent Review Report and Risk Register
- Week of March 20, 2023: Complete draft Independent Review report and Risk Register, provide to the Judiciary for review and feedback.
- Week of March 27, 2023: Collect feedback, update the Independent Review Report and Risk Register, submit the proposed final draft Independent Review Report to the Judiciary
- Week of April 3, 2023: Provide BerryDunn feedback regarding Judiciary responses in the Risk Register, schedule management meeting with Judiciary management and the legislative oversight liaison consultant for final review
- Week of April 10, 2023: Present the Independent Review Report to the Judiciary management team and legislative oversight liaison, complete any follow-up work and updates to the Independent Review Report, obtain Judiciary sign-off and facilitate the closeout meeting

## 2.2 Out of Scope

Due to the nature of the Judiciary's network infrastructure replacement project, BerryDunn did not evaluate the following:

- A final detailed implementation plan
- Contracts with C2 and other vendors

## 3.0 Sources of Information

### 3.1 Independent Review Participants

Table 3.1 includes a list of stakeholders who participated in fact-finding meetings and/or communications.

**Table 3.1: Independent Review Participants**

Name	Organization and Role	Participation Topic(s)
<b>Judiciary Representatives</b>		
Gregg Mousley	Chief, Finance and Administration	Procurement
Joe Paquin	Director of Information Technology	Technical Financials Procurement
Marcia Schels	Chief Technology Innovation Officer	Financials Procurement
<b>Vendor Representatives</b>		
Cory Collier	C2 / Xerox	Technical
Jim Collins	C2 / Xerox	Technical
Stephen Grasser	C2 / Xerox	Technical
Jim Heinz	C2 / Xerox	Technical
Nick Hinge	C2 / Xerox	Technical
Kevin Powers	C2 / Xerox	Technical
Jeff Snyder	C2 / Xerox	Technical

### 3.2 Independent Review Documentation

Table 3.2 below includes a list of the documentation utilized to compile this Independent Review. All documents listed were made available to BerryDunn by Friday, *March 3, 2023*, with updates to some provided as the independent review progressed. Any documents shared with BerryDunn after *March 17, 2023*, have not been included in the table below, but might have informed report development.

**Table 3.2: Independent Review Documentation**

Document Name	Description	Source
ABC Form	Provides a standard format that highlights business requirements, financial impact, and project details. This document was provided twice; once as a preliminary draft, the second based on discussions between BerryDunn and the Judiciary.	Joe Paquin
Arctic Wolf Summary	Shows the services and costs provided for 24/7 SOC operations. This will be paid out of Judiciary's operating budget and not from project costs. Highlights the security stance the Judiciary will take moving forward	Joe Paquin
Broad Level EPICS	Describes broad requirements meant to provide the most flexibility for technology to be proposed. They provide the business and technical requirements of this project as a bare minimum	Joe Paquin
C2 IT Network Replacement Proposal	Describes the proposed solution summary from C2/Xerox to meet Judiciary business requirements	Joe Paquin
Criminal Justice Information System (CJIS) Security Policy	Describes the federal information security policy that applies to the Judiciary and the storage and transport of its data	Joe Paquin
FirstLight proposed ELAN costs and coverage of all court locations	Describes the proposed ELAN circuit costs as discussed with First Light. These can include diverse paths with First Light if desired. There would be no upfit cost to the Judiciary to install/retrofit current circuits	Joe Paquin
High-Level Current State Network Diagram	Illustrates the current high-level network diagram as known by the Judiciary	Joe Paquin
High-Level Future State Network Diagram	Illustrates the conceptual high-level diagram as proposed by the Judiciary	Joe Paquin
Judiciary Procurement Process	Subset of Bulletin 3.5 describing the Judiciary's procurement best practices	Gregg Mousley
Judiciary TSC Org March 2023	Illustrates the organizational structure of the Judiciary Technology Services Center (TSC)	Joe Paquin
Memo to House Committee on Appropriations - BAA (1-11-23) (final) (100)	Memo provided by the Judiciary to the House Committee on Appropriations describing the project and requesting funds	Marcia Schels

Document Name	Description	Source
National Institute of Standards and Technology (NIST) Special Publication 800-215	Outlines the policy that the network security and architecture plan has been designed after	Joe Paquin
Responsibility Matrix	Highlights the proposed responsibilities matrix based on current staffing, including secondary points of contact that are familiar with the technology for redundancy	Joe Paquin
TSC Budget Worksheet	Include ongoing budgets as proposed remaining with the ADS provider service model and with separation from the ADS service model. This Worksheet was provided twice; once as a preliminary draft, the second based on discussions between BerryDunn and the Judiciary.	Joe Paquin

## 4.0 Project Information

### 4.1 Historical Background

Throughout the last decade, the Judiciary has undertaken significant IT modernization efforts through its transition to a Next Generation Court Case Management and E-filing System (Odyssey) and through provisioning Webex technology to support remote hearings throughout the state. After experiencing significant operational issues related to bandwidth and connectivity reliability, the Judiciary is seeking an independent IT network that is reliable and more secure.

Currently, the Judiciary's network system is supported by the Executive Branch's ADS which has proven to be undersized, unreliable, and lacks secure Wi-Fi in Judiciary facilities, posing a security risk and a lack of services to the citizens. Since June 2022, the Judiciary has experienced 13 separate major network outages, causing a significant disruption to court operations, and adversely impacting thousands of cases and litigants. Further, the Judiciary entered 522 services requests to ADS Ivanti during 2022 with an average resolution time of 18 days, even though the current Service Level Agreement (SLA) states help desk tickets shall be resolved within a maximum of ten business days.

These network outages have been largely caused by a bottleneck within the ADS firewall and a lack of diverse internet connectivity at each site, resulting in judges unable to issue orders, court staff unable to access filings, and litigants unable to connect to their hearings. In addition to the outages, weekly network congestion has caused further disruptions and impacted productivity. Network slowdowns have occurred regularly during peak traffic times on Tuesdays, Wednesdays, and Thursdays, though the Judiciary has experienced network degradation outside of the peak periods, as well.

Reliable internet connectivity is critical to conduct remote hearings and to support Odyssey functionality. As such, the Judiciary plans to separate from the Executive Branch ADS system and implement a separate network system to provide timely and reliable services for Vermonters. The Judiciary proposes to implement, maintain, and support its own network system (similar to the actions taken by the Legislative Branch). Supported by the Judiciary's Technology Services Center (TSC), the new network will have a backup system, improved security, and increased speed. By managing its own Microsoft licensing and controlling its own network infrastructure, the Judiciary can provide greater workforce and customer satisfaction while increasing protection of its data.

All 24 Judiciary locations will have a network firewall and a secondary backup network to support redundancy. Further, the new network will support secure Wi-Fi connection for Judiciary staff (currently unavailable), eliminating the need for Judiciary laptops to be hardwired to the network and subsequently losing connectivity when moving around a courthouse. The Judiciary plans to acquire firewalls that will adequately support the current state of traffic and will allow for that traffic to double before causing a slowdown. The Judiciary also plans to implement virtual cloud-based firewalls that will allow network traffic to continue during a firewall outage on-site.

In addition to increased bandwidth, the Judiciary's new network will provide increased opportunity for securing CJIS data and protection against unknown threats. The Judiciary has proposed to include federally compliant Wi-Fi devices, allowing for public Wi-Fi access while providing private Wi-Fi for Judiciary users. This means the proposed solution will allow only known devices on the Judiciary network, separating unknown devices to the public network—a feature currently unavailable to the Judiciary. There will be a network monitor examining all traffic within the network and responding to malicious behavior. These additional layers of security will be invaluable for maintaining compliance and protecting the Judiciary's data.

The Judiciary has carefully considered its resource availability and the TSC is prepared to fully assume these responsibilities with support from an outsourced security operations center that will monitor the network around the clock and respond to any attacks. This team would contact TSC on an as-needed basis with recommendations, financial guarantees, and assistance in instances of a security breach. Further, the security operations center would train all judicial staff on the most current network security best practices. With this level of support, the Judiciary anticipates being able to respond to and resolve most tasks within hours, rather than the numerous days and weeks as experienced with ADS. Additionally, the Judiciary currently does not have visibility into the ADS-managed network, including what traffic may be riding on that network that could impact the Judiciary's traffic.

Lastly, the Judiciary estimates that, by undertaking this effort independently, it will save \$3.5 million in operational costs over five years.

## 4.2 Project Goals

The Judiciary seeks to achieve the following business objectives through the Network Replacement Project:

- Assume control over the delivery system of Odyssey and Webex so that Vermont Judiciary can gain ownership and accountability for the network and other core technologies required to meet its responsibilities to the State of Vermont and its constituencies.
- Implement a dedicated network connectivity and infrastructure that will not contend with traffic from other statewide agencies, thus increasing the available bandwidth and speed of the network. The results of this are expected to significantly increase reliability and performance of the Judiciary's applications and help ensure the reliable and timely service delivery.
- Incorporate layers of security into this dedicated network and eliminate the cyber exposure of a multi-tenant, shared network while complying with CJIS data protective regulations.



### 4.3 Project Scope

C2 has proposed two separate workstreams to simultaneously execute over a 12-month period, with an estimated completion date of June 2024. The scope of each workstream is detailed as follows:

**New Redundant Network Connectivity:** C2 plans to establish a new Judiciary-owned network in which redundant internet circuits exist for the data center and each remote Judiciary locations in scope. To begin, C2 will order the necessary hardware and being to develop design and implementation plans. Meanwhile, each identified Judiciary site will require fit up to support the installation of wireless access points. (The Judiciary has identified subcontractors to perform this work.) First Light (the Judiciary’s identified Internet Service Provider) will initiate circuit provisioning. When C2 has completed design details for the management applications (including Aruba Central, Aruba ClearPass, Palo Alto Panorama, and Prisma Access), they will instantiate and prepare the applications to be leveraged prior to hardware arrival. When First Light has established internet connectivity at the Tech Vault data center, C2 will begin the migration from the ADS network onto the new Judiciary network. Next, C2 will stage switches and wireless access points at a C2 facility and preconfigured to facilitate a rapid deployment and integration. Meanwhile, C2 will deploy Palo Alto ION SD-WAN devices to each site as supplies arrive. C2 will begin the cutover process on a site-by-site basis.

**Microsoft Infrastructure Implementation Strategy:** C2 will begin by implementing Active Directory Domain Services and additional core domain services (including Directory Synchronization, DNS, DHCP, Group Policy, Print Server, and Public Key Infrastructure). C2 will assist in creating a new Microsoft 365 tenant, prepare it to accept data, and test the user experience. Once secured, C2 will prepare for data migration using AvePoint Fly Migration. When the core services are in place, C2 will populate the new Microsoft 365 tenant with all existing Judiciary data and facilitate a cutover to go live with the new domain. Following a period of stability post-cutover, C2 will migrate the remaining servers and applications and decommission the legacy server and application components.

### 4.4 Major Deliverables

Table 4.1 provides a summary of the deliverables and descriptions as articulated in C2’s proposal. Please note that this information was included in C2’s pricing, though there is no detailed description of the project deliverables in its proposal.

**Table 4.1: Project Deliverables and Descriptions within the SOW**

Deliverable	Description
Palo Alto Networks	Hardware and Software
Aruba	Hardware and Software
C2 Xerox / SecureDynamics	Professional Services – Design
C2 Xerox	Professional Services – Implementation

Deliverable	Description
Palo Alto Networks	Professional Services – Implementation
SecureDynamics	Professional Services – Implementation
Migration Tools and Services	Professional Services – Implementation
Palo Alto Networks	Training
Aruba	Training

### 4.5 Project Phases and Schedule

Table 4.2 summarizes the project milestones, dates, and tasks planned, as articulated in C2 Xerox’s proposal. Assuming a start date of July 3, 2023, C2 Xerox anticipates a 12-month project duration for both workstreams (Network Connectivity Workstream and Microsoft Infrastructure Workstream).

**Table 4.2: Project Phases/Milestones, Dates, and Tasks**

Project Phase/Milestone	Date(s)	Tasks
Program Kickoff	Month 1	<ul style="list-style-type: none"> <li>Initial meeting with team leads from Judiciary, C2 Xerox, Aruba, Palo Alto, and SecureDynamics</li> </ul>
Program Initiation	Month 1	<ul style="list-style-type: none"> <li>Secondary kickoff meetings supporting two workstreams (Network Connectivity and Microsoft Infrastructure)</li> <li>Introduce team members</li> <li>Validate or update assumptions</li> <li>Agree upon scope</li> <li>Review budget</li> <li>Review timing requirements and dependencies</li> <li>Establish communication plan</li> <li>Define an escalation process</li> <li>Define acceptance criteria</li> <li>Review initial technical designs</li> </ul>
Network Connectivity Workstream	Month 1 to Month 8	

Project Phase/Milestone	Date(s)	Tasks
New Circuit Provisioning	Month 1 to Month 2	<ul style="list-style-type: none"> <li>Order hardware early in the project to manage supply chain issues</li> </ul>
Remote Site Wiring/Fit up	Month 1 to Month 2	<ul style="list-style-type: none"> <li>Develop detailed design and implementation plans for hardware and management applications</li> </ul>
Network Detailed Design Activities	Month 1 to Month 2	<ul style="list-style-type: none"> <li>Fit up each site to support the installation of the wireless access points</li> </ul>
Hardware Order/Lead times	Month 1 to Month 3	<ul style="list-style-type: none"> <li>Coordinate with the Judiciary's subcontractors identified to perform these workstreams</li> </ul>
Network Staging, Installation, Configuration, Testing	Month 3 to Month 4	<ul style="list-style-type: none"> <li>Establish new dedicated redundant internet connectivity to each of the 31 site locations</li> </ul>
Migrate Internet Connectivity from ADS to JUD	Month 3	<ul style="list-style-type: none"> <li>Judiciary collaborates with FirstLight to initiate circuit provisioning</li> </ul>
Migrate ExpressRoute (Megaport) from ADS to JUD	Month 3	<ul style="list-style-type: none"> <li>Instantiated and prepare all application instances (Aruba Central, Aruba ClearPass, Palo Alto Panorama, and Prisma Access) in advance of hardware arrival</li> </ul>
Aruba Switch/WAP and Palo Ion Device Deployment – Test Site 1	Month 3 to Month 4	<ul style="list-style-type: none"> <li>Establish new redundant and high-performance internet connectivity at the Tech Vault data center</li> </ul>
Aruba Switch/WAP and Palo Ion Device Deployment – Test Sites 2-4	Month 4 to Month 5	<ul style="list-style-type: none"> <li>Perform internet connectivity establishment</li> <li>Migrate off the ADS network infrastructure onto new Judiciary network when stable</li> <li>Stage Aruba switches and wireless access points at C2 Xerox facility</li> <li>Deploy Palo Alto ION SD-WAN devices to each site</li> </ul>

Project Phase/Milestone	Date(s)	Tasks
Pilot Site Testing / Stabilization	Month 5	<ul style="list-style-type: none"> <li>• Cutover from ADS WAN connectivity to Judiciary SD-WAN connectivity on a site-by-site basis</li> </ul>
Remaining Site Connectivity Deployment and Stabilization	Month 6 to Month 8	<ul style="list-style-type: none"> <li>• Develop end-user documentation and training</li> <li>• Establish single test site to validate connectivity and migration processes</li> </ul>
Connectivity Project Closure Activities	Month 8	<ul style="list-style-type: none"> <li>• Perform go/no go checkpoints for each site prior to migration</li> <li>• Deploy remaining sites in a serial fashion</li> <li>• Transition to M&amp;O after stabilization period</li> </ul>
Microsoft Infrastructure Workstream	Month 1 to Month 11	
Hybrid Identity, Authentication & M365 Services Design and Build	Month 1 to Month 2	<ul style="list-style-type: none"> <li>• Implement Active Directory Domain Services and additional core domain services including Directory Synchronization, DNS, DHCP, Group policy, Print Server, and the Public Key Infrastructure in new domain name</li> </ul>
Migration Tools: Design, Implementation, Validation, Tech Planning	Month 3	<ul style="list-style-type: none"> <li>• Create new Microsoft 365 tenant</li> <li>• Prepare data migration tools to migrate existing Active Directory and Microsoft 365 Judiciary data</li> </ul>
Active Directory a& M365 Migration, Go live, and Stabilize	Month 4 to Month 5	<ul style="list-style-type: none"> <li>• Populate new Microsoft 365 tenant with all existing Judiciary data</li> </ul>
Servers and Applications Migration Project	Month 6 to Month 8	<ul style="list-style-type: none"> <li>• Cutover to go live with the new domain and associated Microsoft 365 services</li> <li>• Preserve access to existing resources through trust</li> </ul>

Project Phase/Milestone	Date(s)	Tasks
Legacy Components Decommissioning Project	Month 9 to Month 11	relationships with the new and former domains to enable transition of the Distributed File System (DFS), Help Desk applications, and other critical services
Phone Services Migration to Teams Voice Project	Month 8 to Month 10	<ul style="list-style-type: none"> <li>• Migrate remaining servers and applications after cutover stabilization period</li> <li>• Commence decommissioning when all servers, applications, and services have been migrated</li> <li>• Implement Microsoft 365 Teams Phone System to replace legacy VOIP phone system</li> </ul>
Program and Project Management	Month 1 to Month 12	<ul style="list-style-type: none"> <li>• Define scope</li> <li>• Produce project plan</li> <li>• Provide RAID Log (Risks, Actions, Issues, Decisions)</li> <li>• Maintain project schedule</li> <li>• Maintain resource plan</li> <li>• Change request orders</li> <li>• Produce project status reports</li> <li>• Provide migration plan</li> <li>• Provide change management plan</li> <li>• Provide test plan</li> <li>• Provide acceptance plan</li> </ul>
Program Closure Activities	Month 12	<ul style="list-style-type: none"> <li>• Knowledge transfer activities</li> <li>• Aruba Technologies training</li> <li>• Palo Alto Networks Technologies training</li> <li>• Transition documentation</li> </ul>
Program Closure	Month 12	<ul style="list-style-type: none"> <li>• Formal report for each workstream</li> <li>• Lessons learned sessions</li> <li>• Program summary</li> </ul>

Project Phase/Milestone	Date(s)	Tasks
		<ul style="list-style-type: none"> <li>• C2 Xerox Program Manager performs administrative activities to formally close the project</li> </ul>
Ongoing Support	As Needed	<ul style="list-style-type: none"> <li>• Five years of manufacturer's support on all hardware and software</li> </ul>

## 5.0 Acquisition Cost Assessment

Table 5.1 includes a summary of initial acquisition and implementation costs reported to BerryDunn during this Independent Review.

**Table 5.1: Initial Acquisition and Implementation Cost Assessment**

Acquisition and Implementation Costs	Cost	Comments
Software and Hardware	\$2,739,149	Includes hardware from Aruba and Palo Alto Networks, as well as first year of WAN & ISP Networking and Call Center Software costs in FY24
Implementation Services	\$2,058,514	Includes configuration, installation, and implementation payments in FY24; this cost is comprised of two elements: Professional Services (Design & Implementation) and Palo Alto Networks & Aruba Training
<b>Subtotal – SW/HW/Professional Services</b>	<b>\$4,797,663</b>	
Judiciary TSC Team Labor	\$548,370	Includes TSC FTE roles for FY24
Staff Augmentation Resources	\$150,000	Includes staff augmentation services to supplement TSC staff for FY24
External Labor / Services	\$306,420	Includes network management and cybersecurity services for FY24
Independent Review	\$25,000	Includes the cost of BerryDunn’s Independent Review.
<b>Subtotal - Labor</b>	<b>\$1,029,790</b>	
<b>Total Initial Acquisition and Implementation Costs</b>	<b>\$5,827,453</b>	

1. **Cost Validation:** Describe how you validated the acquisition costs.

- BerryDunn validated acquisition costs during multiple interviews with representatives from the Judiciary. BerryDunn also completed a follow-up cost conversation with the Judiciary IT Director to clarify questions.

2. **Cost Comparison:** How do the acquisition costs of the proposed solution compare to what others have paid for similar solutions? Will the Judiciary be paying more, less, or about the same?

- The Judiciary has reached out to another vendor to receive quotes for this project for comparison purposes. Based on BerryDunn’s comparison of costs of the C2 and the alternate proposal, BerryDunn calculates that the Judiciary may save close to \$2.4m over five years by selecting the alternate proposal. However, that proposal was “budgetary” and may not be a fair comparison with the C2 proposal. There are additional factors to consider; please see Section 9 for a complete analysis.
- On April 10, 2023, the Judiciary provided BerryDunn with an alternate proposal for comparison purposes. Both the C2 and this alternate proposal meet all defined goals for the project; the proposals are technically very similar. BerryDunn compared the costs provided in the “budgetary proposal” provided by the alternate solution vendor with those in the C2 proposal. The alternate proposal costs are approximately \$2.4m lower than C2 over a five-year period.

**3. Cost Assessment:** Are the acquisition costs valid and appropriate in your professional opinion? List any concerns or issues with the costs.

- Based on BerryDunn’s analysis above, and previous experience with similar network implementations, the Judiciary appears to be paying reasonable costs. BerryDunn does recommend that the Judiciary review the alternate proposal closely, and receive a firm quote from that vendor before advancing with a C2 contract.



## 6.0 Technology Architecture and Standards Review

**1. State’s IT Strategic Plan:** Describe how the proposed solution aligns with each of the State’s IT Strategic Principles:

- 1) Leverage successes of others, learning best practices from outside Vermont
- 2) Leverage shared services and cloud-based IT, taking advantage of IT economies of scale
- 3) Adapt the Vermont workforce to the evolving needs of State government
- 4) Apply enterprise architecture principles to drive digital transformation based on business needs
- 5) Couple IT with business process optimization, to improve overall productivity and customer service
- 6) Optimize IT investments via sound project management
- 7) Manage data commensurate with risk
- 8) Incorporate metrics to measure outcomes

In accordance with the Judiciary’s requirements, C2’s IT Network Replacement proposal aligns with the State’s IT Strategic Principles; however, the Judiciary did not solicit C2 via competitive proposal. C2 did submit a technical proposal for BerryDunn to review as part of this Independent Review. However, BerryDunn has not identified the lack of a competitive procurement and formal technical proposal as risks for the following reasons:

- C2 is intimately familiar with the Vermont Judiciary’s network infrastructure and the issues that exist with the current design.
- The C2 proposal aligns with the State’s principal of leveraging shared services and cloud-based IT to take advantage of economies of scale.
- The C2 proposal is based on state-of-the-art hardware and technology to address the long-term viability of the State’s investment.

**Table 6.1: Project Business Objectives and Success Criteria**

No.	Business Objective	Success Criteria
1	Alleviate congestion on the State’s network and allow the Judiciary to be accountable for the court backlog.	Provision the Judiciary to maintain full control of all network hardware, wi-fi installation, firewalls, redundant connections, and increase speed from approx. 100mb to >1GB.
2	Protect confidential CJIS data from potentially insecure applications from other branches of	Increase security by segregating unknown traffic to the public side of the

No.	Business Objective	Success Criteria
	government and outside parties with a zero-trust network architecture.	network and only allowing Judiciary traffic to be allowed on associated VLAN's for CJIS compliance.
3	Reduce the Judiciary's projected yearly operating expense.	Eliminate ADS procured licensing and ADS allocation from the Judiciary budget to save more than 3.5 million over five years.
4	Increase equity by allowing an increased presence of stable wi-fi for litigants and parties to cases.	Reduce number of court cancellations or delays due to network connectivity issues.
5	Help ensure CJIS compliance with all hardware and connectivity. Currently, CJIS compliance is unknown and difficult to measure on current infrastructure.	Increase security and CJIS compliance by maintaining a separate Judicial network.

**2. Sustainability:** Comment on the sustainability of the solution's technical architecture (i.e., is it sustainable?).

- C2 IT Network Replacement project will be implemented using readily available hardware with five-year support from the supplier. In addition, C2 will provide a combination of deliberate knowledge transfer, formal training, and thorough documentation. Through this, the Judiciary will have sufficient opportunity to learn these technologies in depth to sustain the solutions technical architecture.
- C2's successful implementations with other systems and projects in the Vermont Judiciary demonstrate a high level of competency in the lifecycle design aspect. This is a partial list of successful C2 engagements:
  - Initial installation of our VxRail private cloud
  - Initial installation of our Tyler Odyssey application
  - Reconfiguration of our Tyler Odyssey application to have SQL Availability Groups
  - Staff Augmentation for both infrastructure and helpdesk
  - Vigilant24 network monitoring
  - Installation and configuration of our two new VxRail nodes
  - Completion of a Security Assessment with the help of the National Center for State Courts

3. **Security:** Does the proposed solution have the appropriate level of security for the proposed activity it will perform (including any applicable State or federal standards)? Please describe.
- The C2 proposal has appropriate levels of security and meets applicable State and federal requirements. For more information, refer to Section 11: Security Assessment.
4. **Compliance with the principles enumerated in the ADS Strategic Plan of January 2020** (<https://digitalservices.vermont.gov/sites/digitalservices/files/documents/ADSStrategicPlan2020.pdf>):
- Based on BerryDunn’s assessment, the IT Network Replacement proposal aligns with the four guiding principles outlined in the ADS Strategic Plan: IT Modernization, Vermonter Experience, Cybersecurity, and IT Budget Reporting.
5. **Disaster Recovery:** What is your assessment of the proposed solution’s Disaster Recovery Plan; do you think it is adequate? How might it be improved? Are there specific actions that you would recommend improving the plan?
- The C2 proposal provides the Vermont Judiciary with a Disaster Recovery Plan as part of the IT Network Replacement project. The current network architecture does not provide the redundancy for disaster recovery.
6. **Service Level Agreement (SLA):** What are the post-implementation services and service levels required by the Judiciary? Is the vendor-proposed SLA adequate to meet these needs in your judgment?
- C2 will provide the Vermont Judiciary staff augmentation time with SMEs to co-manage the technologies for the first six to twelve months of taking operationalize control post-deployment. This includes:
    - Aruba technologies support – Provided by C2 Xerox for six months following completion of the Network Connectivity workstream. Up to eight hours per week for six months included.
    - Microsoft technologies support – Provided by C2 Xerox for six months following completion of Microsoft Infrastructure workstream. Four hours per week included.
    - Palo Alto technologies support – Provided by SecureDynamics for 12 months following completion of the Network Connectivity workstream. Eight hours per month included. Documentation – New and revised documentation, including help files and documents related to configuration data, will be delivered to the Judiciary with the appropriate service packs and new versions.
  - Vermont Judiciary currently utilizes C2 Vigilant24 Managed Services to supplement its IT staff. The spirit for this active support agreement is to supplement in skillset

and capacity until a point in the future whereby the Judiciary is fully staffed and able to take over full operational control. These services include the following:

- Continue to provide services currently contracted throughout the duration of the IT Network Replacement Project, including being available to respond to support issues with which the Judiciary needs assistance.
- Stand ready to include additional services should the Judiciary need.
- Continually adjust as needed based on the partnership with Judiciary.
- Scale back the level of support at an agreed upon time.

## 7.0 Assessment of Implementation Plan

### 1. The reality of the implementation timetable.

- The C2 Xerox proposal anticipates completing implementation over 12 months, including work over the first 7-8 months for network connectivity implementation and (concurrently) over 12 months for Microsoft infrastructure implementation. Table 4.2 above contains a summary of the project phases from kickoff to closure, including milestones, dates, and tasks. The high-level C2 implementation strategy is contained in the proposal, pages 22-35.
- When asked directly, both the Judiciary project leadership team and C2 Xerox indicated that significant time and effort went into the production of a realistic implementation timetable. Nothing in the C2 Xerox proposal suggests otherwise.
- C2 Xerox's implementation methodology divides implementation into two concurrent workstreams: network connectivity and Microsoft infrastructure. In addition to high-level visual representations of the implementation milestones within each workstream, the C2 Xerox proposal includes more detailed descriptions of the following major project components:
  1. Hybrid Identity, Authentication, & Microsoft 365 Services Design & Build.
  2. Migration Tools: Design, Implementation, Validation, Technical Planning.
  3. Migration of Active Directory and Microsoft 365: Go Live & Stabilization.
  4. Migration of Servers and Applications.
  5. Decommissioning of Legacy Components.
  6. Phone Services Migration to Microsoft Teams Phone System.

Both during interviews and in its proposal, C2 Xerox has demonstrated a deep knowledge of the Vermont Judiciary's systems, teams, and needs. That knowledge, the high-level and more detailed implementation descriptions, and the close working relationship demonstrated between the Judiciary's IT team and C2 Xerox provides BerryDunn with confidence that the C2 implementation timetable is realistic.

### 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 Judiciary project leadership team indicated it has begun efforts to prepare Judiciary business operations for the initiation of the IT Network Replacement Project. The Judiciary has allocated resources to the implementation; identified resource backups where additional support is expected (using interns from a trusted local higher education source); and given significant time to considering what staff resources will be required at the conclusion of implementation. Many of these efforts, in addition to communication, training, and support,

are critical change management efforts that are important to help ensure the successful adoption and use of new systems, allowing employees to understand and commit to the change while working more effectively during the transition from the current state to the desired future state.

- While the Judiciary project leadership team considers its organization ready and eager to implement a new network that will bring significant benefits to most users, it is always possible that some staff will be resistant to change. When asked about this during interviews, the Judiciary team acknowledged the importance of communication and training for both internal and external end-users, even though most of the impact of implementation will be felt by IT staff.
- 3. Do the milestones and deliverables proposed by the vendor provide enough detail to hold the vendor accountable for meeting the business needs in these areas?**
- The C2 Xerox proposal milestones and deliverables are provided at high levels only, which is consistent with the fact that there is as yet no project Statement of Work (SOW). BerryDunn recommends that once a contract is signed the vendor be required to provide a detailed SOW and Project Schedule as key project deliverables with associated costs.
  - However, C2 Xerox's Implementation Methodology, including the phases and tasks associated with each phase, are consistent with large-scale IT system implementations.

**a. Project Management**

- The proposal indicates that the project will include an overall Technical Program Manager who will oversee the overall project and act as the project's Solutions Architect, as well as Project Managers assigned to oversee the individual workstreams.
- The proposal indicates the project team will meet weekly to review scope, schedule, budget, action items, and discuss risks and issues; and that the cadence of all program meetings will be determined together with Judiciary project leadership.
- Each significant project technology component (e.g, Aruba, Palo Alto) will include a technical lead filling the role of subject matter expert (SME).
- C2 Xerox project managers follow the standard Project Management Institute-based project management methodology, as set forth in the C2 Xerox proposal, at Appendix B.

**b. Training**

- The C2 Xerox training approach can be found in the proposal at pages 18-19. The proposal's focus for training is on IT staff, in particular with regard to Aruba and Palo Alto technologies. The proposal identifies online courses for up to 4 people in Aruba Technologies and 400 universal instructor-led training credits.

- The proposal does not include any training for end users. This is likely because it is not expected that end users will see much disruption or change in their user experience, with the notable exception of a change in email identities/addresses. BerryDunn recommends that as part of its change management approach, the Judiciary project leadership team consider adopting a training plan for this project.

C2 Xerox did not provide a sample Training Plan as part of its proposal.

### **c. Testing**

BerryDunn could not evaluate a detailed test plan since the C2 proposal only addresses testing at a very high level.

### **d. Design**

C2's IT Network Replacement design is based on the following objectives:

- A dedicated network that significantly improves performance and reliability for all Judiciary users and applications.
- Implementation that adopts a zero-trust methodology.
- Anticipated project completion by end of June 2024.
- Migration of Vermont Judiciary's users and client computers.
- "From the wires up" net new network buildout.
- Wired and wireless connectivity services implementation to enable data access and simplified central management across a dispersed number of Judiciary-managed locations including remote access capabilities.
- Integrated perimeter and cloud security, centrally managed for compliance and ease of use.
- SD-WAN layer for flexibility, resilience, and ease of management.
- Active Directory Domain Services migration for the CRT Domain.
- Creation of a net new Microsoft 365 Government tenant and subsequent migration of Vermont Judiciary digital services and assets into the new Microsoft 365 GCC cloud.
- Application integration with the new identity services and cloud infrastructure.
- Microsoft Endpoint Manager for modern device management.
- Microsoft Teams Phone System Unified Communications implementation to replace the legacy VOIP telephony system.

The objectives will be accomplished with these proposed design solutions:

- New Redundant Network Connectivity
- New Independent Microsoft Infrastructure

#### **e. Migration**

C2's Microsoft Infrastructure Implementation Strategy includes the following elements:

- Obtain new domain
- AvePoint Fly Migration for data
- Quest Migration Manager for Active Directory
- Teams phone to replace legacy VOIP
- Deploy Azure AD Connect
- Deploy Public Key Infrastructure
- Deploy Domain Name Services on all Active Directory Domain Controllers
- Deploy dual Dynamic Host Configuration Protocol servers for failover/redundancy
- Deploy modernized Organization Units, Delegation of Administrative Rights, and Group Policy
- Deploy a pair of Distributed File system servers
- Deploy new Print Servers

#### **f. Implementation Planning and Go-live**

BerryDunn considers C2's Network Connectivity Implementation Strategy and Microsoft Infrastructure Implementation Strategy comprehensive. Each of these strategies consist of many elements which have been laid out in a logical implementation approach. Some elements include, but are not limited to:

- Data Center Internet Connectivity Provisioning
- Remote Site Circuit Provisioning
- Palo Alto and Aruba Hardware Ordering
- Palo Alto and Aruba Hardware Deployment
- Setting up Test Site and Test Users
- Deploy to all Sites
- Build and migrate to new 0365 Tenet



- 4. Does the Vermont Judiciary 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? Please explain.**

Yes. A Vermont Judiciary TSC Network Engineer is on staff that will be the project manager and has extensive experience with these types of projects.

## 8.0 Cost-Benefit Analysis

1. **Analysis Description:** Provide a narrative summary of the cost-benefit analysis conducted. Be sure to indicate how the costs were independently validated.
  - BerryDunn evaluated costs provided by the Judiciary and C2. Costs were included in C2's preliminary proposal, the IT ABC Form, the Life Cycle Cost Analysis spreadsheet, and via email communications. BerryDunn verified costs provided by the Judiciary in its own life cycle cost-benefit spreadsheet, provided in Attachment 1 – Life Cycle Cost-Benefit Analysis.
2. **Assumptions:** List any assumptions made in your analysis.
  - The cost-benefit analysis was performed using the following assumptions:
    - ADS services will only be required through FY24, then those costs will be eliminated
    - The network replacement project will be complete by the end of FY24
    - Final contract negotiations with selected vendors does not exceed the estimates used when developing this independent review report
    - Estimated annual cost increase are accurate
3. **Funding:** Provide the funding source(s). If multiple sources, indicate the percentage of each source for both acquisition costs and ongoing operational costs over the duration of the system/service life cycle.
  - The Judiciary will use 100% State funds for acquisition costs and ongoing operational costs.
4. **Tangible Costs and Benefits:** Provide a list and description of the tangible costs and benefits of this project. It is “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. Costs are listed for the first year of the project (FY24) plus five additional years.

### *Tangible Costs*

- **Implementation services (\$2,058,514)** – The largest one-time cost for the Judiciary is implementation services, which includes design, deployment and training.
- **Hardware and Software (\$5,537,915)** – These costs include initial acquisition costs for networking equipment, recurring annual network costs, and recurring costs for call center software, Adobe Acrobat, Office365, and Microsoft SQL.
- **Judiciary staff and external labor/services (\$6,517,823)** – Judiciary staff will be substantially involved with the project from implementation through maintenance and operations. Additionally, the Judiciary will no longer rely on ADS staff to maintain the

network, so this includes additional costs required for that maintenance. The following are included in this cost:

- TSC Salaries and Benefits
- Staff Augmentation
- C2 Vigilant24 Services (until project completion)
- Artic Wolf Security Operations Center
- Cybersecurity Testing
- Incident Response Staff Augmentation
- Cybersecurity Assessments

#### *Tangible Benefits*

- **ADS Services (\$7,678,745)** – The largest tangible benefit, resulting in cost savings when moving to the new network is the elimination of the ADS services fees.

**5. Intangible Costs and 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 Judiciary has identified the following intangible benefits associated with implementing the replacement network:
  - Adding network redundancy where there is none currently, increasing availability and uptime when there are failures in parts of the network
  - Including a service level agreement (SLA) with new private contractor, where an enforceable SLA with ADS does not currently exist. The benefit is that the Judiciary can hold a party accountable for performance, throughput, uptime, etc.
  - Increased control over the performance of the network that must be fully operational 24X7X365
  - Including public and private Wi-Fi capabilities in each courthouse, enabling Judiciary staff to more flexibly work while connected, and enabling internet access to the public and attorneys that require that connectivity before, during and after hearings.
  - Advanced access to justice through stable, consistent connections to those involved in hearings; particularly remotely (i.e., translators, transcriptionists, expert witnesses)
  - Increased staff morale (reducing frustration) when accessing the Judiciary’s network, or fielding complaints from those that cannot gain access to a public network.

- Increased morale of court users (i.e., the Vermont Bar), resulting in smoother court operations and fewer complaints
- Consistent access to Odyssey for Judiciary staff; connected both wirelessly and via hardwired connection
- Advancing the Court's preparation for moving Odyssey to a cloud-based environment
- Allowing Judiciary IT staff to more seamlessly conduct its own desktop support which will result in much greater service to its own customers

**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.

- Operational costs after initial implementation are expected to decrease by an annual average of \$768,718 over five years. The cost during the implementation period (12 months; FY24) is expected to exceed the current operational costs for that year by \$4,877,663). Because of this, the costs of the project outweigh the tangible (cost) benefits through FY29, with an anticipated breakeven point in FY31. Many of the intangible benefits will not be realized until the Judiciary has implemented and acclimated to the replacement network environment. The combination of tangible and intangible benefits of the replacement network should ultimately outweigh the system costs, particularly as the Judiciary is able to realize operational efficiencies over the lifecycle of the system.

**7. IT ABC Form Review:** Review the IT ABC Form (Business Case/Cost Analysis) created by the Judiciary for this project. Is the information consistent with your Independent Review and analysis? If not, please describe. Is the life cycle that was used appropriate for the technology being proposed? If not, please explain.

- The Judiciary submitted a copy of the IT ABC Form to BerryDunn on March 16, 2023. Based on initial feedback provided by BerryDunn, the Judiciary updated the IT ABC Form and resubmitted it on March 23, 2023. The resubmitted IT ABC Form contains similar information as that provided by the Judiciary via a TSC Budget Worksheet. However, some costs differ between these two documents; specifically, the IT ABC form did not account for the Judiciary's annual usage of staff augmentation resources to support operations of the replacement network.

## 9.0 Analysis of Alternatives

On April 10, 2023, the Judiciary provided BerryDunn with an alternate proposal for comparison purposes. Both the C2 and this alternate proposal meet all defined goals for the project; the proposals are technically very similar. The primary difference is that the alternate proposal included Cisco as the hardware solution, including telephony. This is relevant since the Judiciary IT staff do not currently have Cisco-certified staff, meaning that they would rely much more heavily on the vendor for support after implementation. This could result in increased costs over the C2 proposal.

### 1. Provide a brief analysis of alternative solutions that were deemed financially unfeasible.

BerryDunn compared the costs provided in the “budgetary proposal” provided by the alternate solution vendor with those in the C2 proposal. The alternate proposal costs are approximately \$2.4m lower than C2 over a five-year period. Below is a summary of this comparison:

**Table 9.1: Cost Comparison Summary (Five Year TCO)**

Activity	C2	Alternate Proposal	Difference
Hardware and Software	\$5,537,916	\$4,994,620	\$543,296
Professional Services	\$2,058,514	\$978,000	\$1,080,514
Labor	\$7,646,735	\$6,879,689	\$767,046
<b>Total</b>	<b>\$15,243,165</b>	<b>\$12,852,309</b>	<b>\$2,390,856</b>

The alternate proposal included a minor charge for migrating the Judiciary’s Active Directory and Office 365 environment from the ADS environment to the new Judiciary one. The Judiciary reports that they believe that the alternate proposal has under-estimated the effort and cost associated with this migration. Additionally, the C2 proposal provided hardware that is readily available in the supply chain; the alternate proposal included Cisco hardware, which is delayed in the supply chain and could negatively impact the start and end date for the network replacement project.

2. Provide a brief analysis of alternative technical solutions that were deemed unsustainable.
3. Provide a brief analysis of alternative technical solutions where the costs for operations and maintenance were unfeasible.

## 10.0 Impact on Analysis of Net Operating Costs

1. **Insert a table to illustrate the Net Operating Cost Impact.**

**Table 10.1: Life Cycle Costs by Year**

Impact on Operating Costs	FY25	FY26	FY27	FY28	FY29	Total
<b>Professional Services</b>						
<b>(Non-Software Costs)</b>						
Current Costs (Cybersecurity Assessments, Cybersecurity Testing, C2 Vigilant24 Managed Services)	\$312,741.00	\$249,628.00	\$342,109.00	\$275,215.00	\$373,976.00	<b>\$1,553,669.00</b>
Projected Costs	\$310,740.00	\$228,627.00	\$320,058.00	\$252,061.00	\$349,664.00	<b>\$1,461,150.00</b>
<b>Hosting, Software, Licensing</b>						
Current Costs (ADS Alloc Fee; ADS SLA Fees)	\$1,185,355.00	\$1,244,623.00	\$1,306,854.00	\$1,372,197.00	\$1,440,807.00	<b>\$6,549,836.00</b>
Projected Costs	\$449,499.00	\$471,975.00	\$495,572.00	\$520,352.00	\$861,369.00	<b>\$2,798,767.00</b>
<b>Other Costs (Judiciary Labor and Staff Aug)</b>						
Current Costs	\$733,289.00	\$769,953.00	\$808,052.00	\$848,873.00	\$891,316.00	<b>\$4,051,483.00</b>
Projected Costs	\$733,289.00	\$769,953.00	\$808,052.00	\$848,873.00	\$891,316.00	<b>\$4,051,483.00</b>
<b>Baseline Current Cost</b>	<b>\$2,231,385.00</b>	<b>\$2,264,204.00</b>	<b>\$2,457,015.00</b>	<b>\$2,496,285.00</b>	<b>\$2,706,099.00</b>	<b>\$12,154,988.00</b>
<b>Baseline Projected Costs</b>	<b>\$1,493,528.00</b>	<b>\$1,470,555.00</b>	<b>\$1,623,682.00</b>	<b>\$1,621,286.00</b>	<b>\$2,102,349.00</b>	<b>\$8,311,400.00</b>
<b>Cumulative Current Costs</b>	\$2,231,385.00	\$4,495,589.00	\$6,952,604.00	\$9,448,889.00	\$12,154,988.00	<b>\$12,154,988.00</b>
<b>Cumulative Projected Costs</b>	\$1,493,528.00	\$2,964,083.00	\$4,587,765.00	\$6,209,051.00	\$8,311,400.00	<b>\$8,311,400.00</b>
<b>Net Impact on Professional Services</b>	\$2,001.00	\$21,001.00	\$22,051.00	\$23,154.00	\$24,312.00	\$92,519.00
<b>Net Impact on Software Acquisition, Maintenance, Support, Licenses Costs, and Other</b>	\$735,856.00	\$772,648.00	\$811,282.00	\$851,845.00	\$579,438.00	<b>\$3,751,069.00</b>
<b>Net Impact on Operating Costs:</b>	<b>\$737,857.00</b>	<b>\$793,649.00</b>	<b>\$833,333.00</b>	<b>\$874,999.00</b>	<b>\$603,750.00</b>	<b>\$3,843,588.00</b>

**2. Provide a narrative summary of the analysis conducted and include a list of any assumptions.**

The Judiciary provided cost data in the form of the IT ABC form, and also in a detailed budget spreadsheet that described the costs for current state and also the future state with the network replacement initiative. ADS currently provides network services to the Judiciary at an estimated annual cost of \$1.185m; with anticipated annual increases. Additionally, the Judiciary conducts cybersecurity assessments and testing, and utilizes managed services from C2 totaling approximately \$300k annually.

With the implementation of the replacement network, the ADS costs and C2 managed services (as currently designed) will cease, but the cybersecurity assessments and testing will continue. Additionally, the Judiciary will pay networking costs and software that they are currently not paying for. After the initial implementation year, in which there are significant expenditures related to hardware acquisition and professional services to provision the new network, the Judiciary will experience a net decrease in annual operating costs, averaging \$768,718 annually. Every five years the Judiciary will experience an uptick in costs because the hardware refresh. However, because of the significant investment in hardware, software, and professional services in FY24, the new network will have a negative impact on net operating costs between FY24 and FY29, with an anticipated breakeven point in FY31.

**3. Explain any net operating increases that will be covered by federal funding. Will this funding cover the entire life cycle? If not, please provide the breakouts by year.**

The Judiciary will be paying for the entire project, from implementation through maintenance and operations, with State funds.

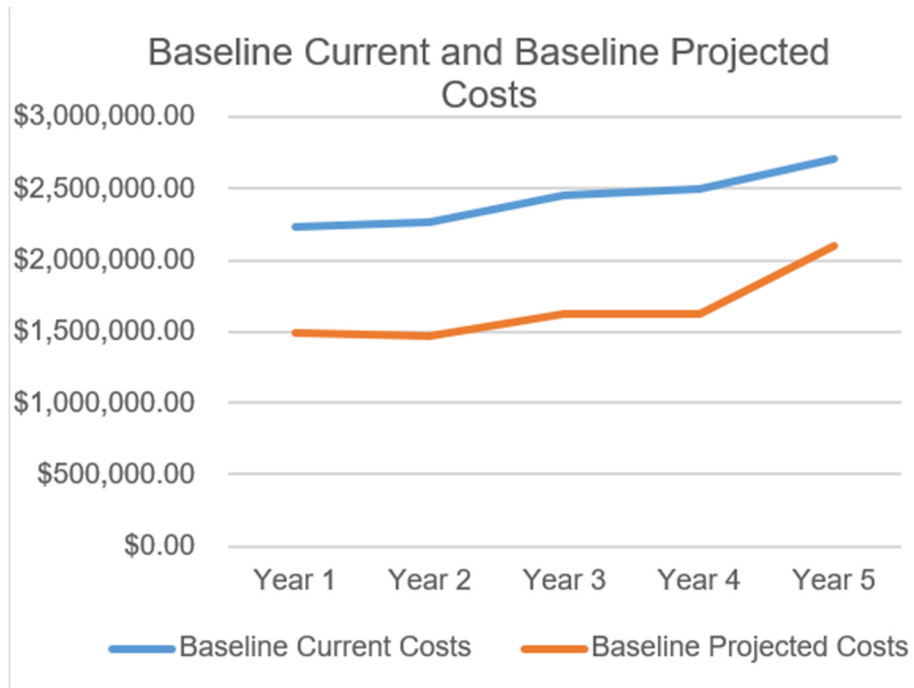
**4. What is the break-even point for this IT activity (considering implementation and ongoing operating costs)?**

As depicted in Figure 10.1, the projected operational costs will be less than the current operational costs after initial implementation of the replacement network. During FY24 the Judiciary will expend significant one-time fees on vendor professional services and acquisition of hardware and software. However, factoring in the FY24 costs, the breakeven point based on this initiative is anticipated to occur in FY31.

*(Note: There will be an uptick in costs for the project every five years due to hardware refresh.)*



**Figure 10.1: Baseline Current and Baseline Projected Costs**



## 11.0 Security Assessment

- 1. Describe how the C2 Network Replacement project conforms to the SOV ADS security standards to protect PII, credit card information, tax information, information associated with minor children, and other sensitive, confidential, or non-public information (taken from the IT ABC Form).**
  - C2 Network Replacement project is designed to meet or exceed the functional, technical, and security requirements described by the National Institute of Standards and Technology (NIST) 800-53 Rev 4, U.S. Internal Revenue Service (IRS) Publication 1075 and Criminal Justice Information Security (CJIS) Policy, Version 5.9.1. C2 Network Replacement project design is compliant with federal, State, and jurisdiction-specific IT security policies, standards, and audits.
- 2. Will the new system have its own information security controls, rely on the Judiciary's controls, or incorporate both?**
  - The system will rely on both Judiciary, Artic Wolf, Aruba Clearpass security controls. The Judiciary is responsible for defining application security.
- 3. What method does the system use for data classification?**
  - The C2 proposal utilize the Microsoft Government Cloud to establish a new Microsoft 365 tenant for the Judiciary which will be populated with all existing Judiciary data. Access will be preserved through trust relationships between the new and former domains. The existing Active Directory security policies will be migrated to the new domain. The State defines what data, if any, has classification needs and which roles have access to the classified data.
- 4. What is the vendor's breach notification and incident response process?**
  - The C2 proposal does not define the notification and response process, however it includes the services of SecureDynamics to deploy and configure the Palo Alto Networks firewalls. Judiciary staff will be involved with this activity.
- 5. Does the vendor have a risk management program that specifically addresses information security risks?**
  - Artic Wolf does have a risk management program in place that specifically addresses information security risks.
- 6. What encryption controls/technologies does the system use to protect data at rest and in transit?**
  - There are two facets to the encryption that C2 proposes. Palo Alto Cortex XDR (eXtended Detection and Response). The ZDR agent safeguards endpoints with device control, disk encryption, and host firewall features. The Microsoft Government Clouse will utilize Public-Key Infrastructure (PKI) on the new servers to facilitate the set of roles, policies, software,

and procedures required to implement, manage, issue, use and store digital certificates for public-key encryption.

**7. What format does the vendor use for continuous vulnerability management, what process is used for remediation, and how do they report vulnerabilities to customers?**

- Arctic Wolf will provide managed detection and response, managed risk, and managed security awareness services. The Arctic Wolf platform provides detection and analysis, the Arctic Wolf Triage provides a 24/7/365 team that investigates and escalates as appropriate, and the Concierge Security Team provides remediation and recovery services to the Judiciary.

**8. How does the system vendor determine its compliance model, and how is its compliance assessed?**

- Arctic Wolf audit/compliance drivers are PCI DSS, FFIEC-NCUA, HIPAA, NIST 800-171, and 23 NYCRR 500. Aruba hardware meets TAA certification for CJIS compliance.

## 12.0 Risk Assessment and Risk Register

*This section describes the process for development of a Risk Register; including the following activities:*

- A. *Ask the Independent Review participants to provide a list of the risks that they have identified and their strategies for addressing those risks.*
- B. *Independently validate the risk information provided by the Judiciary and/or vendor and assess their risk strategies.*
- C. *Identify any additional risks.*
- D. *Ask the Business to respond to your identified risks, as well as provide strategies to address them.*
- E. *Assess the risks strategies provided by the Business for the additional risks you identified.*
- F. *Document all this information in a Risk Register and label it Attachment 2. The Risk Register should include the following:*
  - **Source of Risk:** *Project, Proposed Solution, Vendor, or Other*
  - **Risk Description:** *Provide a description of what the risk entails*
  - **Risk Ratings to Indicate:** *Likelihood and probability of risk occurrence; impact should risk occur; and overall risk rating (high, medium, or low priority)*
  - **Judiciary's Planned Risk Strategy:** *Avoid, Mitigate, Transfer, or Accept*
  - **Judiciary's Planned Risk Response:** *Describe what the Judiciary plans to do (if anything) to address the risk*
  - **Timing of Risk Response:** *Describe the planned timing for carrying out the risk response (e.g., prior to the start of the project, during the Planning Phase, prior to implementation, etc.)*
  - **Reviewer's Assessment of Judiciary's Planned Response:** *Indicate if the planned response is adequate/appropriate in your judgment, and if not, what would you recommend?*

### **Additional Comments on Risks:**

The risks identified during this Independent Review can be found in Attachment 2 – Risk Register.

## Attachment 1 – Life Cycle Cost-Benefit Analysis

Table A.1 on the following page reflects a Life Cycle Cost Analysis for the replacement network, including Judiciary and staff augmentation, and ongoing professional services. FY29 shows an uptick due to anticipated network hardware refresh.

**Table A.1: Life Cycle Analysis**

Description	Initial Implementation	Maintenance	Maintenance	Maintenance	Maintenance	Maintenance	
Fiscal Year	FY24	FY25	FY26	FY27	FY28	FY29	Total
<b>Software and Hardware</b>							
Aruba	\$1,523,635.00	\$0.00	\$0.00	\$0.00	\$0.00	\$155,000.00	\$1,678,635.00
Palo Alto Networks	\$1,097,514.00	\$0.00	\$0.00	\$0.00	\$0.00	\$160,000.00	\$1,257,514.00
WAN & ISP Networking Costs	\$116,000.00	\$243,600.00	\$255,780.00	\$268,569.00	\$281,997.00	\$296,097.00	\$1,462,043.00
Call Center Software	\$2,000.00	\$2,100.00	\$2,205.00	\$2,315.00	\$2,431.00	\$2,553.00	\$13,604.00
Adobe Acrobat	\$0.00	\$7,350.00	\$7,718.00	\$8,103.00	\$8,509.00	\$8,934.00	\$40,614.00
Microsoft Office365	\$0.00	\$178,599.00	\$187,529.00	\$196,905.00	\$206,751.00	\$217,088.00	\$986,872.00
Microsoft SQL Software	\$0.00	\$17,850.00	\$18,743.00	\$19,680.00	\$20,664.00	\$21,697.00	\$98,634.00
<b>Software Total</b>	<b>\$2,739,149.00</b>	<b>\$449,499.00</b>	<b>\$471,975.00</b>	<b>\$495,572.00</b>	<b>\$520,352.00</b>	<b>\$861,369.00</b>	<b>\$5,537,916.00</b>
<b>Implementation Services</b>							
<b>Professional Services</b>							
Professional Services (Design & Implementation)	\$1,979,403.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,979,403.00
Palo Alto Networks & Aruba Training	\$79,111.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$79,111.00
<b>Total Professional Services</b>	<b>\$2,058,514.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$2,058,514.00</b>
<b>Judiciary and External Labor /Services Costs</b>							
ADS	\$1,128,910.00						\$1,128,910.00
TSC Salaries & Benefits (Infrastructure Director & Team)	\$548,370.00	\$575,789.00	\$604,578.00	\$634,807.00	\$666,547.00	\$699,875.00	\$3,729,966.00
Staff Augmentation (supplements TSC Infrastructure Team)	\$150,000.00	\$157,500.00	\$165,375.00	\$173,644.00	\$182,326.00	\$191,442.00	\$1,020,287.00
C2 Vigilant24 Managed Services	\$201,420.00	\$18,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$219,420.00
Arctic Wolf Security Operations Center	\$80,000.00	\$159,990.00	\$167,990.00	\$176,389.00	\$185,208.00	\$194,469.00	\$964,046.00
CybersecurityTesting	\$25,000.00	\$26,250.00	\$27,563.00	\$28,941.00	\$30,388.00	\$31,907.00	\$170,049.00
Incident Response Staff Aug	\$0.00	\$31,500.00	\$33,075.00	\$34,729.00	\$36,465.00	\$38,288.00	\$174,057.00
Cybersecurity Assessments	\$0.00	\$75,000.00	\$0.00	\$80,000.00	\$0.00	\$85,000.00	\$240,000.00
<b>Total State Labor Costs</b>	<b>\$2,133,700.00</b>	<b>\$1,044,029.00</b>	<b>\$998,581.00</b>	<b>\$1,128,510.00</b>	<b>\$1,100,934.00</b>	<b>\$1,240,981.00</b>	<b>\$7,646,735.00</b>
<b>Total Implementation Services</b>	<b>\$4,192,214.00</b>	<b>\$1,044,029.00</b>	<b>\$998,581.00</b>	<b>\$1,128,510.00</b>	<b>\$1,100,934.00</b>	<b>\$1,240,981.00</b>	<b>\$9,705,249.00</b>
<b>Totals</b>							
Implementation and Software / Hardware	\$6,931,363.00	\$1,493,528.00	\$1,470,556.00	\$1,624,082.00	\$1,621,286.00	\$2,102,350.00	\$15,243,165.00
BerryDunn Independent Review	\$25,000.00						\$25,000.00
<b>Total Implementation</b>	<b>\$6,956,363.00</b>	<b>\$1,493,528.00</b>	<b>\$1,470,556.00</b>	<b>\$1,624,082.00</b>	<b>\$1,621,286.00</b>	<b>\$2,102,350.00</b>	<b>\$15,268,165.00</b>
<b>Total Lifecycle Operating Costs</b>	<b>\$6,956,363.00</b>	<b>\$1,493,528.00</b>	<b>\$1,470,556.00</b>	<b>\$1,624,082.00</b>	<b>\$1,621,286.00</b>	<b>\$2,102,350.00</b>	<b>\$15,268,165.00</b>
<b>Total Lifecycle Costs to be paid with Federal funds</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>
<b>Total Lifecycle Costs to be paid with State funds</b>	<b>\$6,956,363.00</b>	<b>\$1,493,528.00</b>	<b>\$1,470,556.00</b>	<b>\$1,624,082.00</b>	<b>\$1,621,286.00</b>	<b>\$2,102,350.00</b>	<b>\$15,268,165.00</b>

## Attachment 2 – Risk Register

Data Element	Description
<b>Risk #</b>	Sequential number assigned to a risk to be used when referring to the risk.
<b>Risk Probability, Impact, Overall Rating</b>	Two-value indicator of the potential impact of the risk if it were to occur, along with an indicator of the probability of the risk occurring. Assigned values are High, Medium, or Low.
<b>Source of Risk</b>	Source of the risk, which might be interviews with the Judiciary, project documentation review, or vendor interview.
<b>Risk Description</b>	Brief narrative description of the identified risk.
<b>Judiciary’s Planned Risk Strategy</b>	Strategy the Judiciary plans to take to address the risk. Assigned values are Avoid, Mitigate, Transfer, or Accept.
<b>Judiciary’s Planned Risk Response</b>	Risk response the Judiciary plans to adopt based on discussions between Judiciary staff and BerryDunn reviewers.
<b>Timing of Risk Response</b>	Planned timing for carrying out the risk response, which might be prior to contract execution or subsequent to contract execution.
<b>Reviewer’s Assessment of Judiciary’s Planned Response</b>	Indication of whether BerryDunn reviewers feel the planned response is adequate and appropriate, and recommendations if not.

Risk #:	Risk Likelihood/Probability:	Risk Impact:	Overall Risk Rating:
1	Medium	High	Medium
<b>Source of Risk:</b> Document review – C2 Proposal			
<p><b>Risk Description: Proposed Implementation and Cost Proposal is not granular enough to hold the vendor accountable</b></p> <p>The C2 proposal describes the two workstreams and tasks associated with each. The proposal also describes the costs, broken down by Hardware/Software, Professional Services, and Training. However, this table (Pricing table on page 36 of the C2 proposal) does not describe specific deliverables for each professional service. This may result in the Judiciary paying fees without receiving similar value. Additionally, this does not enable the Judiciary to hold the vendor accountable for the quality of their work.</p> <p>BerryDunn recommends that the Judiciary include specific deliverables within Professional Services, with specific costs associated with each. Deliverables may include, but are not limited to: Implementation Plan, Design Plan, Training Plan, Testing Plan, Hardware Installation Completion Report, Testing Completion Report, Training Completion Report. Additionally, BerryDunn recommends that the Judiciary consider holding back a minimum of 10% of each of these deliverables, to be paid only at the successful completion of the project.</p>			
<b>Judiciary’s Planned Risk Strategy: Mitigate</b>			

Risk #:	Risk Likelihood/Probability:	Risk Impact:	Overall Risk Rating:
1	Medium	High	Medium
<b>Judiciary's Planned Risk Response:</b> The Judiciary plans to mitigate this risk. During the contracting phase of the project, the selected vendor will be required to propose payment milestones. The Judiciary plans to hold 10% back from each payment milestone to ensure satisfactory completion of the project.			
<b>Timing of Risk Response:</b> Prior to contract execution			
<b>Reviewer's Assessment of Judiciary's Planned Response:</b> The Judiciary's response to this risk seems reasonable and feasible.			

Risk #:	Risk Likelihood/Probability:	Risk Impact:	Overall Risk Rating:
2	High	Medium	Medium
<b>Source of Risk:</b> Document review; Stakeholder fact-finding meetings			
<b>Risk Description: Lack of Competitive Proposals may result in the Judiciary paying more than it should</b>			
The Judiciary indicated that they are seeking an alternate proposal to compare against the C2 proposal. The provided BerryDunn with an alternate proposal in the form of a sales presentation deck, which BerryDunn reviewed. Based on the information contained in the deck, it is difficult to determine if the Judiciary is paying a fair price for the services being requested.			
BerryDunn recommends that the Judiciary receive more details from the alternate vendor to compare against the C2 proposal before advancing to contract negotiations with C2.			
<b>Judiciary's Planned Risk Strategy: Mitigate</b>			
<b>Judiciary's Planned Risk Response:</b> The Judiciary plans to mitigate this risk. The Judiciary has also engaged another vendor for a competitive proposal. To mitigate this risk, we plan to review the proposals and choose the best vendor for the plan based on technology solutions and cost.			
<b>Timing of Risk Response:</b> Prior to contract execution			
<b>Reviewer's Assessment of Judiciary's Planned Response:</b> The Judiciary's response to this risk seems reasonable and feasible. The Judiciary provided BerryDunn with a copy of the alternate proposal, and the Judiciary's current plan (to proceed with C2) seems appropriate.			

Risk #:	Risk Likelihood/Probability:	Risk Impact:	Overall Risk Rating:
3	High	Medium	Medium
<b>Source of Risk:</b> Document review; Stakeholder fact-finding meetings			
<b>Risk Description: TSC IT Director playing the Project Manager Role may decrease his effectiveness in his current and project role for the 12 months of implementation</b>			
The Judiciary has limited staff, which must be focused on maintaining a high operational standard. The IT team on this staff is lead by a capable, knowledgeable resource. This resource is being considered			



Risk #:	Risk Likelihood/Probability:	Risk Impact:	Overall Risk Rating:
3	High	Medium	Medium
<p>to lead the implementation of the new network, which may decrease his effectiveness in his current operational role.</p> <p>BerryDunn recommends that the Judiciary consider an alternate project management resource or backfill the operational duties that may be left de-prioritized due to the IT Director playing this important project management role.</p>			
<b>Judiciary's Planned Risk Strategy: Mitigate</b>			
<b>Judiciary's Planned Risk Response:</b> The Judiciary plans to mitigate this risk. The Judiciary has identified that an internal project manager would be critical to the success of this project. As the sponsor for the project the IT Director will oversee the project management activities.			
<b>Timing of Risk Response: Subsequent to contract execution</b>			
<b>Reviewer's Assessment of Judiciary's Planned Response:</b> The Judiciary's response to this risk to engage a subcontractor resource to act as the project manager for this engagement seems reasonable and feasible.			

Risk #:	Risk Likelihood/Probability:	Risk Impact:	Overall Risk Rating:
4	High	Medium	Medium
<b>Source of Risk:</b> Document review; Stakeholder fact-finding meetings			
<b>Risk Description: Detailed Test Plan was not included in C2's proposal. This could be a risk for project completion if that detailed plan is not developed before implementation.</b>			
<p>The C2 proposal did not include a detailed test plan. Though this is typical at the proposal stage the Judiciary should feel confident in the testing that will occur during the project.</p> <p>BerryDunn recommends that the Judiciary ensure that a detailed test plan is included as a project deliverable, with a cost associated with it. The Judiciary will approve the test plan before C2 proceeds with testing, and before the Judiciary pays for that deliverable.</p>			
<b>Judiciary's Planned Risk Strategy: Mitigate</b>			
<b>Judiciary's Planned Risk Response:</b> The Judiciary plans to mitigate this risk. During the contracting phase payment milestones will be accepted after satisfactory test plans have been conducted. These test plans will be developed during the architecture and project planning phase of the project.			
<b>Timing of Risk Response: Prior to contract execution</b>			
<b>Reviewer's Assessment of Judiciary's Planned Response:</b> The Judiciary's response to this risk seems reasonable and feasible. BerryDunn further recommends that the contract with the preferred vendor include specific language regarding deliverable review and acceptance procedures and timing.			