

INDEPENDENT REVIEW

OF A PROPOSED

REPLACEMENT FOR THE STATE'S CURRENT

ALL-PAYER CLAIMS DATABASE (APCD),

KNOWN IN VERMONT AS THE VERMONT HEALTH

CARE UNIFORM REPORTING AND EVALUATION

SYSTEM (VHCURES)

For the
State of Vermont
Department of Information & Innovation (DII)
And
Green Mountain Care Board (GMCB)

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

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January 12, 2015

Hereby accepted by Richard Boes, State of Vermont Chief Information Officer, and
Commissioner, Department of Information and Innovation

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1. EXECUTIVE SUMMARY

1.1 COST SUMMARY

IT Activity Lifecycle:	10 Years												
Total Lifecycle Costs:	[REDACTED]												
Total Implementation Costs:													
New Annual Operating Costs:													
Difference Between Current and New Operating Costs:													
Funding Source(s) and Percentage Breakdown if Multiple Sources:	<p>Funding sources for initial implementation (FY15) include:</p> <table border="1"> <tr> <td>State monies</td> <td></td> <td>54.26%</td> </tr> <tr> <td>Federal</td> <td>Exchange Funds, Global Commitment to Health, Rate Review Grant</td> <td>45.74%</td> </tr> </table> <p>Funding sources for continued implementation (FY16, FY17) and ongoing operating costs include:</p> <table border="1"> <tr> <td>State monies</td> <td></td> <td>54.26%</td> </tr> <tr> <td>Federal</td> <td>Exchange Grant, Global Commitment to Health, Rate Review Grant</td> <td>45.74%</td> </tr> </table>	State monies		54.26%	Federal	Exchange Funds, Global Commitment to Health, Rate Review Grant	45.74%	State monies		54.26%	Federal	Exchange Grant, Global Commitment to Health, Rate Review Grant	45.74%
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Federal	Exchange Grant, Global Commitment to Health, Rate Review Grant	45.74%											

¹ [REDACTED]
 [REDACTED] The range shown here represents the offered firm fixed price from Year 1 through Year 10. See HSRJ, Cost Proposal, August 6, 2014, p. 1, and Cost Proposal - Attachment J, p. 2.

² [REDACTED]
 [REDACTED] See Cost Impact Analysis Spreadsheet.

1.2 DISPOSITION OF INDEPENDENT REVIEW DELIVERABLES

Deliverable	Highlights from the Review
Acquisition Cost Assessment	[REDACTED]
Technology Architecture Review	<p>The proposed project aligns with the objectives of the State’s IT Strategic plan in several significant ways:</p> <ul style="list-style-type: none"> • First, as a key component improvement to a Health Care sector information system, this project aligns with the Governor’s list of priorities for the State. • Second, the project supports DII’s strategic vision, particularly “improv[ing] health care through the collection of projects that make up Health Information Technology.” • Third, the project implements several strategic goals of the Plan.
Implementation Plan Assessment	<p>All our interviews evidenced an <i>extremely</i> high level of readiness and enthusiasm for this project among knowledgeable staff, and among Board members as well.</p>
Cost Analysis and Model for Benefit Analysis	<p>In our opinion, the projected benefits of the proposed system greatly outweigh the costs of the proposed system. As our Cost Impact Analysis (below) will demonstrate, ongoing operating costs are in line with continued operation of the current system, while tangible (cost reduction) and intangible benefits are highly desirable. This leaves primarily the cost of implementation and development, which is in line with other comparable implementations. The cost of implementation is significantly funded by non-State sources, and the State portion is largely offset by fees and taxes dedicated to the project.</p>
Impact Analysis on Net Operating Costs	<p>Comparison of costs of VHCURES 2.0 with VHCURES 1.0, with current staff, including cost reduction and implementation shows:</p> <ul style="list-style-type: none"> • parallel operation for 6 months – “breakeven” point around FY 2022 • parallel operation for 1 year – “breakeven” point around FY 2024 <p>[REDACTED]</p>

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.

The risk of inadequate staff for implementation (RISK ID# 6, see below) is high.

Note that two of the risks in the table on this page are minimized in severity by having a correspondingly low impact or likelihood (See Risk Register).

The moderate risks faced by this project can be summarized by these two possibilities:

- Risk of delay to the project, resulting in additional cost
- Risk of loss of key State staff, resulting in delay to the project

Please see the Risk & Issues Register, in Section 7, for details.

Identified High Impact &/or High Likelihood of Occurrence Risks in this project:

Risk Description	RATING IMPACT/ PROB	State's Planned Risk Response	Reviewer's Assessment of Planned Response
In the event that a key member or members of the project team were to become unavailable to the project for any reason, there is a risk that the project could be delayed, leading to increased costs. RISK ID: 6	63 (high) 7/9	Mitigate	Concur
There is a risk that certain federal funding could be denied if approval is not obtained. (very low likelihood, high impact) RISK ID: 7	8 (low) 8/1	Mitigate	Concur
Some data users may object to new means and methods of data access and manipulation. (high likelihood, low impact) RISK ID: 5	16 (low) 2/8	Mitigate	Concur

1.4 OTHER KEY ISSUES

The proposed project is currently delayed approximately 4 months from the timetable envisaged in the project Charter. (see *Section 7.1(1)* , below). We believe this delay was appropriate, and resulted in a better conceived and better prepared project in advance of contract execution.

1.5 RECOMMENDATION

We recommend that the State proceed with the proposed project. However, given the severity of a risk of inadequate staffing resources (Risk ID# 6), we suggest delaying commencement of implementation until such time as an adequate plan for ensuring continuity and availability of State staff resources for this project can be put in place.

1.6 CERTIFICATION

I hereby certify that this Independent Review Report represents a true, independent, unbiased and thorough assessment of this technology project/activity and proposed vendor(s).

 E-SIGNED by Paul Garstki
on 2015-01-13 22:07:26 GMT

January 13, 2015

Signature

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 45, §2222(g):

The Secretary of Administration shall obtain independent expert review of any recommendation for any information technology initiated after July 1, 1996, as information technology activity is defined by subdivision (a)(10), when its total cost is \$1,000,000 or greater or when required by the State Chief Information Officer.

The independent review report includes:

- An acquisition cost assessment
- A technology architecture review
- An implementation plan assessment (which includes a Risk Analysis)
- A cost analysis and model for benefit analysis; and
- An impact analysis on net operating costs for the Agency carrying out the activity

2.2 OUT-OF-SCOPE

- A separate deliverable contracted as part of this Independent Review may be procurement negotiation advisory services, but documentation related to those services are not part of this report.
- This review does not evaluate the desirability of a State-owned APCD per-se, as it is mandated by Statute (see *Historical Background*, below). The existing system (VHCURES 1.0) is evaluated only as it relates by comparison to the proposed replacement.
- Proposals and vendors other than the bidder selected as first choice through the proposed project's procurement process were not evaluated in this Review.

3. SOURCES OF INFORMATION

3.1 INDEPENDENT REVIEW PARTICIPANTS

Name	Date	Employer and Title	Participation Topic(s)
Dian Kahn	Nov. 12, 2014	GMCB, Director of Analysis and Data Management	Overview, project purposes
Mike Donofrio, JD	Nov. 13, 2014	GMCB, General Counsel	Legal, statutory issues, contract and RFP development
David Regan	Nov. 13, 2014	BerryDunn, Senior Consultant (State Project Manager for VHCURES 2.0)	Project Management
Betty Rambur, PhD	Nov. 13, 2014	Member, Green Mountain Care Board, Project Participant	Board understanding, participation, and attitudes toward project. Board mandates relating to this project. Priorities.
Zachary Sullivan	Nov. 13, 2014	GMCB, Policy Analyst	Data analysis issues, system architecture as relating to data users
Susan J. Barrett, JD	Nov. 15, 2014	GMCB, Executive Director	GMCB staff issues, interface with Board, overview and general concerns
Tim Holland	Nov. 15, 2014	DII, Oversight Project Manager	DII oversight, resources available to GMCB for this project
Ena Backus	Nov. 17, 2014	GMCB,	Data use, security
Kate Jones	Nov. 20, 2014	GMCB, Financial Director	Project Costs and Funding, Funding sources
Will Sipsey	Nov. 25, 2014	DII, Enterprise Architect	System Architecture, State DII Resources, Security, Validation of Compliance
Stacey Murdock	Nov. 25, 2014	GMCB, (Project Lead)	Project Management, overview, and various issues relating to project
Stacey Murdock, State Project Lead David Regan, BerryDunn, State PM Tim Holland, State Oversight PM Leanne Candura, HSRI, primary vendor PM Tim Mulcahy, NORC, sub-vendor PM Jeremy Wong, Ai, sub-vendor PM	Dec. 9, 2014	(see names)	Project Management, communication, and coordination

3.2 INDEPENDENT REVIEW DOCUMENTATION

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

Document	Source
SEALED BID REQUEST FOR PROPOSAL FOR Green Mountain Care Board All Payer Claims Database, incl. all attachments, addendums, questions & answers	State
VHCURES 2.0 Project Charter	State
Independent Review of a contract amendment between the State of Vermont and Onpoint Health Data (Onpoint) for the Vermont Healthcare Claims Uniform Reporting & Evaluation System (VHCURES).	State / BerryDunn
VHCURES Procurement Projection vs. Budget Final	State
VHCURES 2.0 IT ABC form (VHCURES Business Case)	State
Annual \$100K IT Activity Information Validation & Reporting form	State
HSRI VHCURES 2.0 Technical Proposal	HSRI
HSRI VHCURES 2.0 Cost Proposal	HSRI
HSRI Staff Loading Chart	HSRI
HSRI Supplemental Presentation Material	HSRI
HSRI Attachment J Business Requirements	HSRI
HSRI VT PowerPoint Master (demo presentation)	HSRI
Responses to GMCB Questions from HSRI	HSRI
Requirements Data (vendor proposal scoring)	State

Summary of Requirements Data	State
HSRI Score Sheet	State
Contact List	State
The Basics of All Payer Claims Databases	APCD Council
APCD Technical Build Guide	APCD Council
Vermont Department Of Banking, Insurance, Securities and Health Care Administration Regulation H-2008-01	State (via website)
All Payer Claims Databases: Issues and Opportunities for Health Care Cost Transparency in New Jersey	Rutgers Center for State Health Policy
Independent Review Template, version 6/17/14	State
State of Vermont IT Strategic Plan 2014-1019 (January 2014)	State

4. PROJECT INFORMATION

4.1 HISTORICAL BACKGROUND

Vermont Statute 18 V.S.A. sec. 9410 mandates a Unified Health Care Database (UHCD within which an All payer Claims Database or APCD is a key component) under the auspices of the Green Mountain Care Board (GMCB), for several purposes defined in the statute.

The relevant portion of VSA 18 § 9410 reads:

Health care database

(a)(1) The Board shall establish and maintain a unified health care database to enable the Commissioner and the Board to carry out their duties under this chapter, chapter 220 of this title, and Title 8, including:

- (A) determining the capacity and distribution of existing resources;
- (B) identifying health care needs and informing health care policy;
- (C) evaluating the effectiveness of intervention programs on improving patient outcomes;
- (D) comparing costs between various treatment settings and approaches;
- (E) providing information to consumers and purchasers of health care; and
- (F) improving the quality and affordability of patient health care and health care coverage.

(2)(A) The program authorized by this section shall include a consumer health care price and quality information system designed to make available to consumers transparent health care price information, quality information, and such other information as the Board determines is necessary to empower individuals, including uninsured individuals, to make economically sound and medically appropriate decisions.

The Vermont Health Care Uniform Reporting and Evaluation System (VHCURES) is an APCD that supports the duties to be carried out using the UHCD. Development and maintenance of VHCURES began in 2009 under contract with OnPoint Health Data. That original contract (renewed in 2011) was held by the Department of Banking, Securities, Insurance, and Health Care Administration (BISHCA). BISHCA is now called the Department of Financial Regulation (DFR).

Following a change in statute (see above for current statute), VHCURES contract possession was transferred to the GMBC on July 1, 2013. Along with responsibility for the system, 1.25 FTEs out of 3.0 FTEs transferred to GMCB to support out-sourced data analytic contracts associated with the project. Parallel to these changes, current Vermont statutes (32 VSA § 10402) assign a portion of the proceeds from a State tax imposed on health insurers to operation of VHCURES under the auspices of GMCB. Additionally, Vermont statutes (18 V.S.A. § 9374(h)(1)) mandate the GMCB to “bill-back” 60% of expenses “incurred to obtain information, analyze expenditures, review hospital budgets, and for any other contracts authorized by the Board” to health care industry participants, including for-profit and nonprofit hospitals and medical service corporations, health insurance companies, and health maintenance organizations (HMOs).

4.2 PROJECT GOAL

The GMCB has proposed replacing the current system, henceforth referred to as "VHCURES 1.0," with a modernized, more capable, and more secure system, henceforth referred to as "VHCURES 2.0."

Reasons for replacing VHCURES 1.0 with a new system include:

- VHCURES 1.0 does not include several highly desirable features required for security, privacy, and efficient operation. Chief among these are:
 - **A secure Master Person Index, protecting Vermont citizen privacy while improving data utility:** The current system has no means for abstracting personal patient information by means of a Master Person Index, requiring personal patient information to be excluded from the system. This makes the system less effective for deriving potentially useful information, such as "care episodes" (care of a single patient's condition across perhaps multiple providers and payers).
 - **Easier and more secure access to data for qualified users:** The VHCURES 1.0 database is housed on servers owned by OnPoint Health Data and not accessible by data users via network access. Database extracts for data users under VHCURES 1.0 must be loaded to hard disk and physically delivered to the site of data use. Once the physical drive data is loaded to the local data users' servers, the GMCB (and by extension, when data users are external, the State as a whole) does not have control over access to the data, and must rely upon data users' own local procedures to protect Vermont citizens' and payers' privacy consistent with affidavits obtained by the State.
 - **Better data analytic tools for qualified data users**
 - **A security and access model that is verifiable** without imposing a burden on State staff resources
 - **A more accurate and robust Master Provider Index that would contribute in the future to an enterprise-side Master Provider Director.** This requires enhancements to claims data collection and inclusion of non-claims-based information.
- The contract in effect at the Charter of this project for operation and maintenance of VHCURES 1.0 was set to expire on August 31, 2014, making this an appropriate time to upgrade. (The contract was amended via change order in August, 2014, to expire on April 30, 2015, thus accommodating implementation of the proposed project. That amended contract is the current contract.)
- The State prefers "cloud-based" operations with consistent and verifiable security procedures, and the proposed system implements these.

In response to the concerns above, the GMCB proposed an entirely new database system (VHCURES 2.0), addressing these and other concerns, and achieving better alignment with the statutory requirement. The proposed system would incorporate the existing historical data from VHCURES 1.0 to the greatest practical extent.

Upon completion of the implementation phase of the proposed project, the improvements listed above will have been satisfied.

However, **the statutory requirement of 18 VSA § 9410 (2) (A), that of providing a “price transparency” tool accessible to the public (“consumers”), will not be initially fulfilled by the proposed project.**

ISSUE_ID#_2 (VHCURES 1.0 similarly does not provide this capability.) The State did request the vendor, HSRI, in the vendor’s proposal and presentation, to address the *feasibility* of adding such capability to the proposed solution at a later date (not within the scope of the current project as envisioned). This identified issue, its reasoning, and the vendor response is discussed more fully below (See *Risk & Issues Register*, below). In our opinion, the GMCB’s decision not to include this capability as a requirement in the initial RFP was a wise one.

At the outset, the GMCB envisioned the employment of multiple (at least two) vendors for implementation and operation of VHCURES 2.0. Consistent with the latest APCD best practices³, the GMCB specified a “lockbox” model of operation to segregate and effectively protect personally identifiable information from becoming associated with healthcare information, while at the same time facilitating analytical utility. During development of the RFP, the GMCB decided in the interest of efficiency and project coordination to seek proposals that consolidated all requirements under the auspices of a single vendor, even though that vendor might choose to employ sub-contractors (sub-vendors) to fulfill portions of the requirements.

Using the “lockbox” model to operate an APCD:

- The first, or “lockbox” vendor, receives and manages personally identifiable information but not healthcare information. This vendor creates unique patient identifiers that are consistent across payers and can be used for data analysis and to compute an unduplicated count of Vermonters receiving health care services.
- The second, or data consolidation vendor, receives without direct identifiers, validates and consolidates the data, and may host and manage secure access to the data (or a third vendor may be used for hosting and access).

The system employed by the lockbox vendor to create unique patient identifiers is known as a **Master Person Index (MPI)**. This term will be used in the remainder of this Review.

4.3 PROJECT SCOPE

IN-SCOPE

- Implementation of Master Patient Index with lockbox vendor
- Implementation of Data Collection, Quality, and Consolidation vendor

³ Rutgers Center for State Health Policy, All Payer Claims Databases: Issues and Opportunities for Health Care Cost Transparency in New Jersey, May, 2013, p. 26

- Transfer of data to hosted warehouse solution
- Implementation of secure Analytic Environment
- Testing of the readiness of the solution to be integrated with other data sources
- Training of State users for analytic environment

OUT-OF-SCOPE

- Integration of claims data with other data sources (e.g., hospital discharge data set)

4.3.1 MAJOR DELIVERABLES

Deliverable	MPI Vendor	Data Consolidation Vendor
Bi-weekly Status Report	Required	Required
Project Management Plan	Required	Required
Configuration Management Plan	Not Required	Required
Data Management Plan	Not Required	Required
Requirements Traceability Matrix	Required	Required
System Architecture Design Document	Required	Required
Business Systems Design (analytic services)	Not Required	Required
Test Plan	Required	Required
Operations & Maintenance Manual	Not Required	Required
Operational Support Plan	Required	Required
Contingency/Recovery Plan	Required	Required
Interface Control Document	Required	Required
Conceptual Data Model	Required	Required
Logical Data Model	Required	Required
Physical Data Model	Required	Required
Data Dictionary	Required	Required
Training Plan	Not Required	Required
On-site / Off-site Strategy	Required	Required

4.4 PROJECT PHASES, MILESTONES, AND SCHEDULE

Project Milestone	Date
Project Planning	
Project Charter Complete	1/29/2014
IT ABC Form Complete	3/12/2014
Request For Proposals Released	5/28/2014
Proposals Due and Bids Opened	8/6/2014
Bidder Demonstration Sessions	October, 2014
Vendor Selection Complete	10/22/2014
Independent Review Complete	12/25/2014
Contract Final Negotiation & Execution	12/31/2014



5. ACQUISITION COST ASSESSMENT

Acquisition Costs	Cost	Comments

(Please see Attachment 3 – Lifecycle Cost Benefit Analysis spreadsheet for details of above figures.)

5.1 COST VALIDATION:

Describe how you validated the Acquisition Costs.

- Vendor software, implementation and development, deliverables, and training charges are included in the vendor's firm fixed price offer. They are broken out by vendor for convenience in response to State RFP. They do not necessarily reflect a best and final offer (BAFO).
- Independent Review costs reflect current contract with Northeast Computer Systems, Inc., but do not include Procurement Negotiation Advisory Services (optional at State request).
- Project Management consultant fees are projected on the basis of 1 FTE for 12 months at an hourly rate of \$167. We agree this is a reasonable projection for the size and scope of the

proposed project, and the qualifications of the Project Manager.

Project Management tasks may vary during the Planning, Procurement, and Implementation stages of the Project. The total estimated cost for PM consultant services is shown in FY 2015, although some tasks occurred before and may occur slightly after the actual fiscal year dates, depending on the actual "go-live" date or similar factors.

Calculation is: 1 FTE for 1 year = 163 hours X 12 months X \$167 = \$ 326,652 State Staffing Costs

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)?

Although the scope, size, and complexity of All Payer Claims Databases necessarily varies from State to State (based on factors such as State population and covered lives, number and mix of payers, adopted data Rule, date of implementation, and features of the implemented system), **comparison with other States owning APCDs show comparable costs for implementation and for yearly operation.**

The Colorado APCD Advisory Committee, in Status of the Colorado All Payer Claims Database, March 1, 2013⁴, shows costs as follows:

- \$ 1,780,000 for Planning and Development through 2013 (starting 2012)
- \$ 4,500,000 for Development and Implementation through 2016

Allowing for 3 years of operation alongside continued development in the second figure, **we may estimate that costs were comparable to the Vermont proposed system.**

A 2011 survey available from the North Carolina Institute of Medicine⁵ shows the following costs for APCD "investment" in APCDs from various states:

Kansas	\$ 1,441,243
Maryland	Approx. \$1 million / yr.
Maine	\$ 4-5 million acrossMHDO/MHDPC for hardware and staff time since 2002.
Minnesota	\$ 1.8 million
New Hampshire	Approx. \$3M since 2005

⁴ Colorado APCD Advisory Committee, Status of the Colorado All Payer Claims Database, March 1, 2013

http://www.civhc.org/getmedia/c33380b1-9615-427b-ad18-3a8ae99f8f2a/APCD-Annual-Rpt-2013---Governor--Legis_Final.pdf.aspx/

⁵ **Untitled PDF file** at <http://www.nciom.org/wp-content/uploads/2011/06/APCD-Chart.pdf>

These figures appear to represent continued operation, rather than development costs (and they are several years out of date). In this respect, however, **they are comparable to ongoing costs projected for the Vermont proposed project.**

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 Acquisition Costs appear to be valid and cost projections are appropriate, based on current information. [REDACTED]

Additional Comments on Acquisition Costs:

none

6. TECHNOLOGY ARCHITECTURE REVIEW

6.1 STATE'S IT STRATEGIC PLAN

The proposed project aligns with the objectives of the IT Strategic Plan⁶ in several significant ways.

First, as a key component improvement to a Health Care sector information system, this project aligns with the Governor's list of priorities for the State.⁷

Second, the project supports DII's strategic vision, particularly "improv[ing] health care through the collection of projects that make up Health Information Technology."⁸

Third, the project supports the six Strategic Principles identified in the current plan:

1. Leverage successes of others, learning best practices from outside Vermont.

The proposed project, VHCURES 2.0, builds on the extensive in-State experience gained from operating VHCURES 1.0, and also incorporates the experiences and results of other US States that have implemented APCD systems. Vermont is an active participant in nationwide forums (such as the APCD Council) utilizing these experiences to develop and promulgate best practices for system design, privacy protection, security, and data utilization.

2. Leverage shared services and cloud-based IT, taking advantage of IT economies of scale.

The proposed project employs a hosted data warehouse design, moving both the database and the analytic environment to a "cloud-based" infrastructure. This off-loads not only hardware and network infrastructure from the State, but also minimizes the load placed on State human resources to maintain and provide security for the system.

3. Adapt the Vermont workforce to the evolving needs of state government.

The proposed project supports the Vermont State need to support an increased need for data analysis workers, particularly in the health care area. VHCURES 2.0, through its enhanced analytic environment, supports a greatly increased capacity to bring data analysis "in-house," performed by State employees, rather than out-sourcing these activities.

4. Leverage modern IT delivery frameworks and enterprise architectures.

Closely related to item # 2, above, the proposed project utilizes current best practices in data security and availability, allowing significant new IT capabilities for the State without the

⁶ State of Vermont IT Strategic Plan 2014-2019 – Progress through Better IT and Partnerships, January 2014, <http://www.leg.state.vt.us/reports/2014ExternalReports/296061.pdf>

⁷ *Ibid*, pii

⁸ *Ibid*, p11

addition of any new hardware, network infrastructure, or in-State software (aside from secure desktop clients, already a part of the State's preferred data access and handling process).

5. Couple IT with business process optimization, to improve overall productivity and customer service, not just IT itself.

The proposed project would greatly enhance the GMCB's fulfillment of its legislatively mandated mission, allowing the Board and its staff to focus more fully on the secure acquisition of appropriate data, the protection of Vermont citizens' privacy, and the creative use of payer data for understanding the State health care delivery and payment systems, and controlling costs.

6. Optimize IT investments via Enterprise Architecture and Project Management methodologies.

The proposed project utilizes current best practices for secure enterprise database system implementation, and ensures proper employment of those practices through an appropriate system of Project Management. The Project Management system employs widely-accepted Project Management Body of Knowledge (PMBOK) principles, with properly credentialed Project Managers working in close communication both on the State "side" and the vendor "side" of the project.

Fourth, the project implements several strategic goals of the Plan, including

1. Modernization of legacy technologies⁹ – The current system (VHCURES 1.0) is not a "legacy" system as compared to (for example) some older State mainframe operations, but in the context of national health care technology progress, it represents features of data definition, entry, hosting, and extraction that are rapidly becoming outmoded.
2. Ensure sustainability of IT capabilities¹⁰ – The proposed system, consistent with State IT architecture preferences, employs "cloud" data hosting, standardized implementation technologies wherever possible, and verifiable high security and recoverability.
3. Operate IT effectively and efficiently¹¹ – The proposed project outsources capabilities which are not currently present in the sponsoring agency – such as federal-level health information security assurance for hosted data – and brings in-house capabilities – such as data analysis – supported by existing staff expertise and currently out-sourced.

The VHCURES project is referenced in two tabular appendices of the current plan:

1. Appendix A: IT Activities \$100K and Up (FY2015 Over \$100k IT Activities Reported to DII)

⁹ *Ibid*, p5

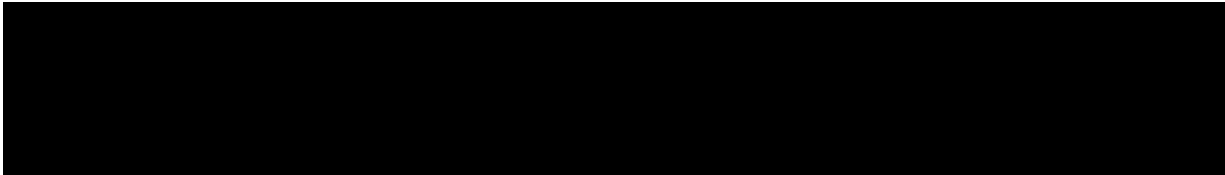
¹⁰ *Ibid*, p6

¹¹ *Ibid*, p7

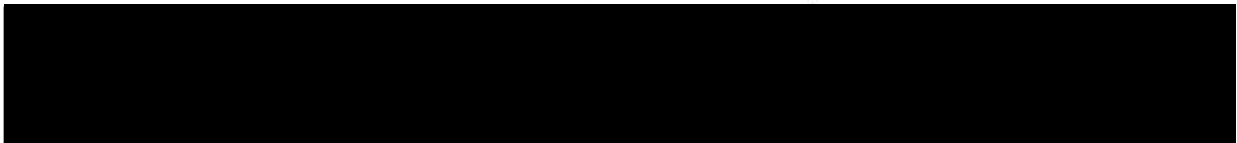
2. Appendix D: IT Activities Over \$100K Supporting Operations (FY2015 Operational \$100k IT Activities Reported to DII)

Both entries refer to contract expiration of the current system (VHCURES 1.0) , and anticipate renewal of maintenance contract. Since the proposed project was chartered after the authoring of the published IT Strategic Plan, we would not expect the new project (VHCURES 2.0) to be referenced.

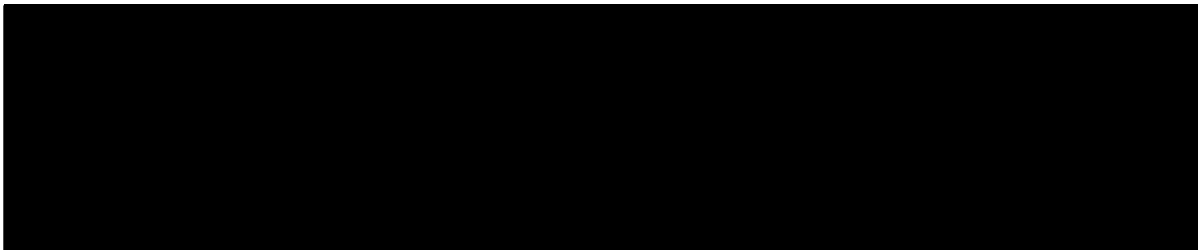
6.2 SERVICE LEVEL



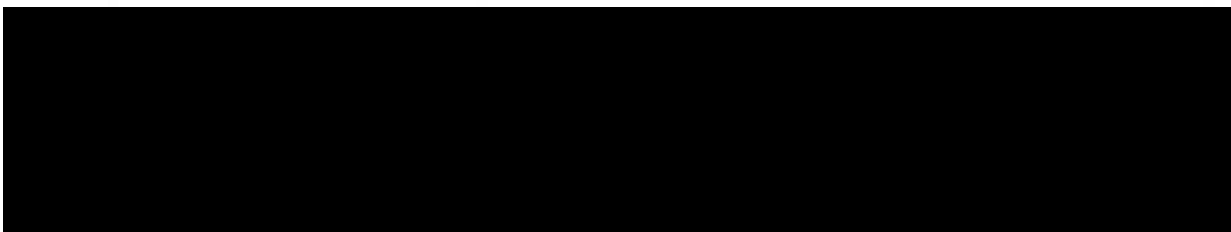
6.3 SUSTAINABILITY



6.4 LICENSE MODEL



6.5 SECURITY



¹² Green Mountain Care Board, SEALED BID REQUEST FOR PROPOSAL FOR Green Mountain Care Board All Payer Claims Database, May 28, 2014, p.26, requirement B.61

¹³ Will Sipsey, *DII Enterprise Architect*, Interview, Nov. 25, 2014

¹⁴ *Ibid.*

Methods used to access data (provided with training to authorized data users) are consistent with State of Vermont best practices for secure data access.¹⁵ [REDACTED]

[REDACTED]

This is consistent with State of Vermont preferred best practices .

[REDACTED]

State Staff Security Procedures

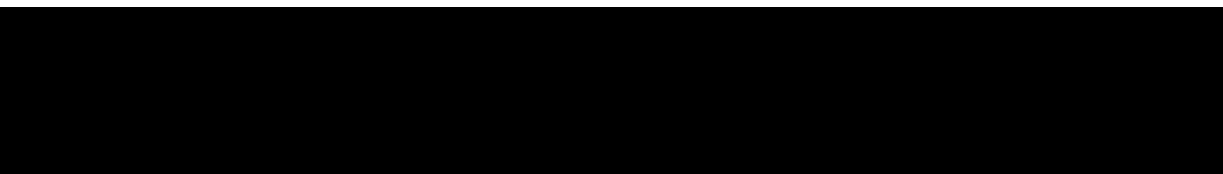
Local physical security procedures at the GMCB staff location – access limitations, identification of unknown visitors, desktop security, individual work area security, affidavit and security agreement procedures, data handling methods – are all of a consistently high level, as we observed during this

¹⁵ *Ibid.*

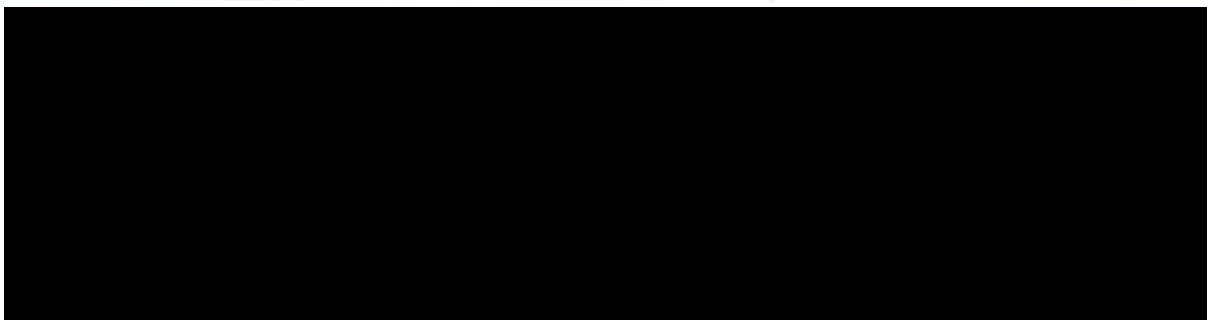
¹⁶ Tim Mulcahy, *NORC Project Manager, Interview, Dec. 9, 2014*

review. One non-GMCSB interviewee stated that “they really are the model for how to do it right.”¹⁷ However, although security procedures are very good, internal staff training for staff has thus far relied on experienced and knowledgeable staff members and an informal training process. **There is a risk that replacement of staff or additional new staff may not be trained adequately under the current security training process.** **RISK_ID#_8** Ideally, there should be a standardized formal training process, drawing on existing State resources, to avoid possibility of a breach of sensitive data.


6.6 DISASTER RECOVERY



6.7 DATA RETENTION



6.8 SERVICE LEVEL AGREEMENT

The proposed system, once implemented, is expected via contracted Service Level Agreement (SLA) to be available for authorized access at least 99.5% of the time (See *Service Level*, above). 

According to the State Enterprise Architect,²² the proposed SLA uptime is adequate and usual.

¹⁷ Sipsev

¹⁸ National Security Agency -- Information Assurance Directorate, NSA Community Gold Standard Technical Guidance: Manageable Network Plan, Ver. 3.0, *September 25, 1013*, <https://www.nsa.gov/ia/files/vtechrep/ManageableNetworkPlan.pdf>

¹⁹ Sipsev

²⁰ See HSRI Technical Proposal – Attachment Q

²¹ ACPD Council, The Basics of All Payer Claims Databases, *January 2014*, p. 5

²² Sipsev

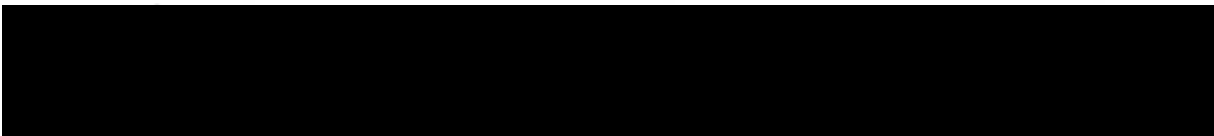
Comparison to other common and usual SLA agreements of similar size and scope shows that compensation to the State under this agreement is proper.²³

6.9 SYSTEM INTEGRATION

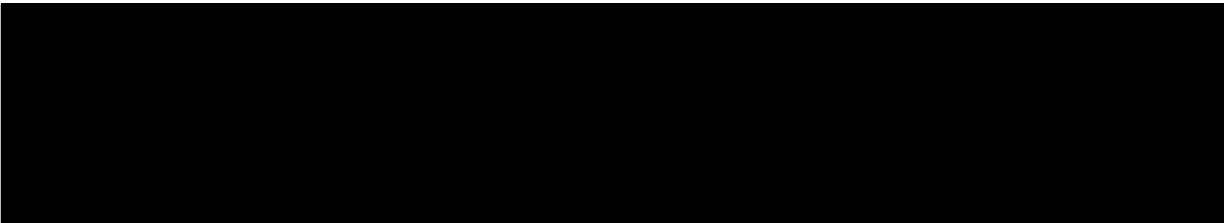
Is the data export reporting capability of the proposed solution consumable by the State?

The proposed solution employs national data standards related to accepting, validating, storing, securing, and reporting on APCD data,²⁴ and is compliant with State standards for the same. Analytics tools provided by the data hosting vendor, NORC Data Enclave, are industry standard tools, and State analytical staff assess them to be highly useful.²⁵

What data is exchanged and what systems will the solution integrate/interface with?



The State's current VHCURES data specification is contained in DFR regulation H-2008-01. A process of review and revision of this regulation is underway, following the above process. This rule revision will include data fields identical or similar to that of the current rule, while adding new fields to support the reporting and analytical fields of the proposed system (including MPI information), and adjustments to existing fields that have proved problematic for analytical purposes.



Please create a visual depiction and include as Attachment 1 of this report.

[See attachment 1]

Will the solution be able to integrate with the State's Vision and financial systems (if applicable)?

N/A

Additional Comments on Architecture: none

²³ Educause Review, *If It's in the Cloud, Get It on Paper: Cloud Computing Contract Issues*, June 24, 2010, <http://www.educause.edu/ero/article/if-its-cloud-get-it-paper-cloud-computing-contract-issues>

²⁴ HSRI, *Technical Proposal, All Payer Claims Database*, August 6, 2014, Tab J – Page 28

²⁵ Zachary Sullivan, *Interview*, November 13, 2014

7. ASSESSMENT OF IMPLEMENTATION PLAN

7.1 IMPLEMENTATION READINESS

1. THE REALITY OF THE IMPLEMENTATION TIMETABLE

The timetable for implementation of the project after execution of the contract has been proposed by the vendor, HSRI, including a detailed schedule of deliverable,²⁶ and accepted as reasonable by the GMCB, pending final negotiations. Based on vendor, HSRI performance with past projects of similar scope and complexity, this schedule appears realistic. Additionally, close coordination of Project Managers on both the State and Vendor side promises a high likelihood of reasonable adherence to schedule.

However, it must be noted that there are challenges here, and project delay has been identified as a risk for this project (*see risk register*). There are several possible sources of delay:

- 1) The GMCB has a relatively small staff and full load of mandated tasks to accomplish. Staff loading has been reasonably calculated for this project.^{27, 28} **There is a risk that unforeseeable demands on the staff, due to events in the policy and political arena, could draw dedicated staff time away from the project. RISK_ID# 1**
- 2) [REDACTED]. All three are critical to the timetable of the project as envisaged. **Any failure of project management coordination between vendors, or between vendor(s) and State, could result in time lost during re-synchronization. RISK_ID# 2**

The Risk Assessment portion of this review summarizes mitigation strategies or other responses to these risks.

The project has already experienced some delay since its charter timeline projection (a delay of approximately 4 months thus far, based on an anticipated start date of January 1, 2015).

ISSUE_ID# 1 Apparently, the delay thus far has been reasonable side-effect of the GMCB assuming control of (the existing) VHCURES; the creation and implementation of a Data Governance process under the aegis of the GMCB; and careful RFP creation / vendor selection. We believe the delays thus far are reasonable and not unusual, and that the benefits of proper preparation at these early phases of the project far outweigh any damage caused by delay. In support of this conclusion, we point to the general recommendations of the APCD Council in regard to appropriate planning and preparation for APCD implementation.²⁹

²⁶ HSRI, VHCURES 2.0 Demonstration to GMCB (Powerpoint), *date unknown*, slides 21-24

²⁷ *Ibid.*, slide 22

²⁸ Green Mountain Care Board and DII, IT Activity Business Case & Cost Analysis (IT ABC), ver. 2.1, March 12, 2014, Section II.

²⁹ APCD Council, All-Payer Claims Database (APCD) Technical Build Guidance Document, July 2011, all pages

As the project progresses through the implementation phase, however, we recognize the likelihood of a period when data extracts without direct identifiers will become unavailable to authorized users, as the new system, with a new data definition, is put into place. We refer to this as a data release “blackout period.” As data under the current VHCURES 1.0 system is extracted periodically, any blackout period *may* have minimal adverse effect, depending upon the implementation schedule and length of the blackout. However, **there is a risk that any implementation delays could result in an extended data blackout period.** **RISK_ID#_9** Such a delay could result in temporary unavailability of analytics required for grant-funded activities, and a related loss or delay of grant revenue. In response, the State would extend the OnPoint Health Data contract, to continue data aggregation and release of extracts to State agencies and contractors. The possibility of an extended contract (“parallel operation” of VHCURES 1.0 and 2.0 to 12 months) is included in the Cost Analysis, below.

2. TRAINING OF USERS IN PREPARATION FOR THE IMPLEMENTATION

User training is required by the RFP and included in the Technical and Cost Proposals of the vendor, HSRI. [REDACTED]

[REDACTED] Data users may be analysts within State government or external to it. This will tend to be a more changeable group, with some users being intensive users and others relatively more casual. [REDACTED]

[REDACTED] Installing and setting up this client environment can be very smooth and automated, but it can sometimes be fraught with difficulties, especially for users who are not sophisticated in installation of such software, or who have software policy restrictions imposed at the network level, as government workers are likely to have. For example, network ports may need to be opened on State firewalls or policy waivers authorized for the particular user’s network profile. Resolution of these difficulties must often involve an expert technician who is familiar with the user’s network environment in some detail.

As a result, we have found that State-employed data users – at least within GMCB and AHS – may call on existing State resources (i.e., DII Helpdesk) to resolve the issue without need for other state staff resources. The helpdesk would either resolve the issue directly, or route a service or support request to our Desktop group (i.e., open a support ticket).³⁰ Other State agencies would have their own IT resources to consult.

³⁰ Tim Holland, [Email](#), November 19, 2014

However, we continue to identify the same risk for non-State data users, **RISK_ID#_4** as a potential drain on limited GMCB staff (who at any rate would be likely to be over-qualified to devote time to technical issues of this sort). The risk register (below) identifies mitigation for this risk.


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


Implementation of this project will mainly impact four stakeholder cohorts at the State level: (1) The Green Mountain Care Board members themselves; (2) GMCB staff; (3) DII Project Oversight and Enterprise Architect Staff; (4) State data users external to the GMCB.

The Green Mountain Care Board appears strongly supportive of this project and its potential for meeting the requirements of the legislative mandate while protecting Vermont citizens' privacy. GMCB member Dr. Betty Rambur indicated to us that the project enjoys "broad buy-in" and "understanding" among Board members.³¹ In addition, some Board members participate in the Data Governance Committee, further engaging the Board in the details of this project.

The GMCB staff includes members who "came over" to the GMCB with the VHCURES 1.0 Project (see *Historical Background*, above). These staff members have been prime drivers in the development of the proposed project, and continue to participate fully in the project planning, Data Governance, and project management tasks.

The DII Project Management Oversight Project Manager and the System Architect for the project have been and continue to be engaged in all relevant aspects of project development. They appear to have all necessary resources and skills at their disposal to fulfill their roles.

State data users external to the GMCB have been invited to participate, and have participated, in key portions of the project development and vendor selection process, including at the vendor demonstration sessions, to accommodate their needs and opinions as stakeholders. In general, they have welcomed the improvements contained in the proposed design. **Some data users may object to new means and methods of data access and manipulation.** **RISK_ID#_5** 



4. ADEQUACY OF DESIGN, CONVERSION, AND IMPLEMENTATION PLANS

In order to assure adequate and experienced Project Management for this complex project, the GMCB has identified and employed professional Project Management consulting services from BerryDunn for the duration of the implementation phase. These resources include a Project Manager with appropriate credentials, experience, and certification in project management to see the project through successfully.

³¹ Betty Rambur, PhD, Interview. November 13, 2014

Additionally, the consulting firm has appropriate resources to “back up” the Project Manager should that individual become unavailable for unforeseen reasons.

The “Project Lead,” a permanent staff member of the GMCB, guides and provides State oversight of the project as a whole, and provides State coordination for all aspects of the project. She is also the prime staff information linkage to the Green Mountain Care Board itself for this project. (A GMCB member also participates as an ongoing project staff member).

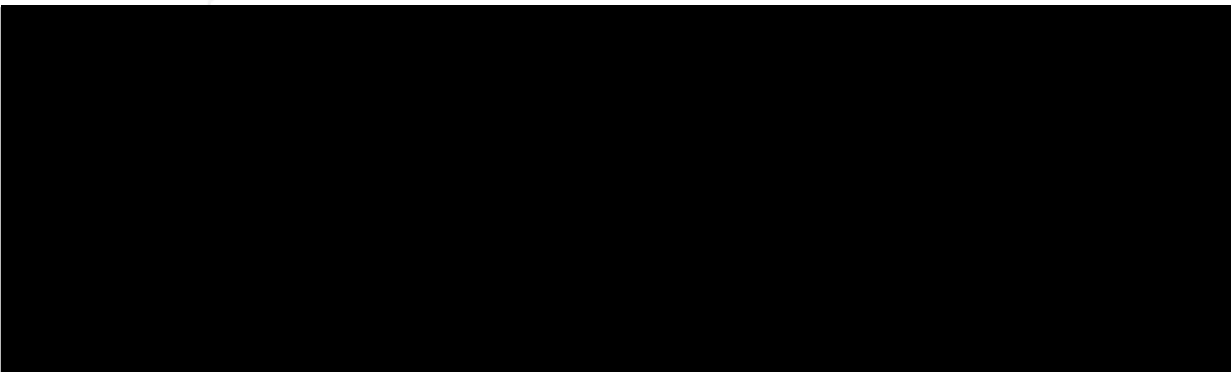
Project Management planning is appropriate for the current stage of project development. A secure, State-standard Sharepoint site hosts project management documents. All project staff participate in information dissemination, and this widespread sharing of data helps greatly to reduce the risk of any member of the project staff becoming unavailable for any unforeseen reason. The Project Manager’s philosophy of “no one person should be holding important information” is embraced by all members of the project team, and contributes to well-informed decision-making.

5. ADEQUACY OF SUPPORT FOR CONVERSION/IMPLEMENTATION ACTIVITIES

GMCB projections of needed State staff time for the project are in line with vendor, HSRI estimates of State staff time. Cost projections anticipate this staff time appropriately (see *Acquisition Cost Assessment*, above).


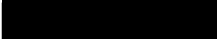
There remains the fact that the GMCB has a small staff relative to the demands of this project. That staff includes highly skilled individuals with special expertise in data use, analytics, and APCD development in particular. Current State budget constraints and possible shortfalls create uncertainty regarding the potential addition and/or replacement of staff. GMCB executive leadership are developing plans to ensure adequate staff support for the proposed project, but we remained concerned that implementation of the project could possibly begin before the legislative process approves and confirms those plans. **In the event that a key member or members of the project team were to become unavailable to the project for any reason, there is a risk that the project could be delayed, leading to increased costs.** **RISK ID#_6** This risk, and appropriate mitigations, are discussed in the *Risk Assessment* section, below.

6. ADEQUACY OF AGENCY AND PARTNER STAFF RESOURCES TO PROVIDE MANAGEMENT OF THE PROJECT AND RELATED CONTRACTS (I.E. VENDOR MANAGEMENT CAPABILITIES)





7. ADEQUACY OF TESTING PLAN/APPROACH

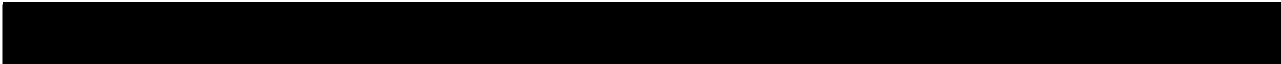
The Acceptance Test Plan outline proposed by the vendor, HSRI is robust and appropriate for this stage of the project. 
 supports an expectation of competence in developing the required deliverable and implementing it.

8. GENERAL ACCEPTANCE/READINESS OF STAFF

All our interviews evidenced an *extremely* high level of readiness and enthusiasm for this project among knowledgeable staff, and among Board members as well.

³² <http://pmi.org>

³³ HSRI, GMCB APCD – VHCURES 2.0 – Supplemental Presentation Materials – Tab D, *date unknown*, p. 6-9



7.2 RISK ASSESSMENT & RISK & ISSUES REGISTERS

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

ADDITIONAL COMMENTS ON RISK

On December 17, 2014, in the final weeks of this Independent Review process, Governor Peter Shumlin announced the preparation of a number of proposals for the legislature³⁴, expanding the role of GMCB in health care reform and expanding the Vermont Blueprint for Health, a prime consumer of VHCURES data. According to the Governor's announcement, the proposals would include

- Enhancing the Green Mountain Care Board's role as a central regulator of health care with the goal of lowering health care spending increases to between 3-4% in the long term.
- Continuing to pursue an "all-payer waiver" with the federal government so that Vermont succeeds in being the first state to move from the current quantity based fee-for-service system to one that reimburses providers for quality and outcomes.
- Strengthening Vermont's commitment to the Blueprint for Health and building on the preliminary results it has shown in bending the cost curve while ensuring quality health care to Vermonters.
- Restructuring of the function and oversight of Vermont Information Technology Leaders (VITL), the state-created nonprofit that oversees the Vermont Health Information Exchange to push the state toward greater levels of technology utilization and integration. This would include shifting VITL to the Green Mountain Care Board and giving the Board the authority to approve and monitor VITL's budget to ensure VITL's priorities and investments are consistent with the statewide health information technology plan.³⁵

Depending upon the legislature's response to the finalized proposals and the timing of that response, new stresses — either positive, negative, or both — could be introduced to the proposed project. Some relevant points to note include:

- VITL oversees the primary Vermont clinical database project (Health Information Exchange).
- Any merging of GMCB with VITL would likely imply changes in staffing
- VITL was proposed as the Master Person Index (MPI) vendor in one of the bids (not selected) for the VHCURES 2.0 project.
- The Blueprint depends heavily upon VHCURES data and would be most impacted by a potential blackout of data extracts (see Risk ID #9)

³⁴ Office of Vermont Governor Peter Shumlin, *December 17, 2014, Gov. Shumlin Details Health Care Financing Report to Business and Consumer Advisory Councils* [Press release]. <http://governor.vermont.gov/node/2163>

We believe the final shape and legislative outcome of the Governor's proposals are speculative at this time, and do not allow for detailed analysis of potential project risks and opportunities. We expect the GMCB project staff and the Board itself will continue to monitor events in light of the project.

RISK REGISTER

The following table explains the Risk Register components:

Risk ID:	Identification number assigned to risk
Rating:	An assessment of risk significance, based on multiplication of impact X probability ratings (below). 1-30 = low; 31-60 = moderate; 61 – 90 = high.
Impact:	Assessment of severity of negative effect, scale of 1 – 10, from least to most severe
Probability:	Assessment of likelihood of risk occurring, scale of 1 – 9, from least to most likely
Description:	Description of the risk
Source:	Where the risk originates
Impact Description:	Impact of the risk on project, should the risk occur
State's Planned Response:	Decision to <i>avoid, mitigate, transfer</i> or <i>accept</i> risk Detailed description of response to risk, in order to accomplish decision
Timing:	When the response should occur
Reviewer's Assessment:	Reviewers evaluation of the State's planned response

Risk ID: 1	Rating: 18 Impact: 6 Probability: 3
Description:	There is a risk that unforeseeable demands on the staff, due to events in the policy and political arena, could draw dedicated staff time away from the project.
Source:	GMCB
Impact Description:	Increased project cost due to State staffing requirements beyond projected timeframe and extended parallel operation of current system. Delay in availability of new data for analysis.
State's Planned Response:	<i>Mitigate</i> The GMCB project staff will continue a high level of communication with the Board itself, to maintain visibility of this project and its progress. Continued participation of a Board member and the Executive Director in project activities will ensure that appropriate resources remain available to the project during the critical development and implementation phase.
Timing:	Now through completion of development and implementation phase.
Reviewer's Assessment:	We concur with the State's response. This will remain a risk until the new system is "up and running." The very high level of support for this project evinced by the Board, along with the importance of this project to the mandate of the Board, greatly reduce the likelihood of this risk. However, the Board is highly visible and must be responsive in the public sphere, so staffing assignments should be continually evaluated in light of this project's needs.

Risk ID: 2	Rating: 6 Impact: 6 Probability: 1
Description:	Any failure of project management coordination between vendors, or between vendor(s) and State, could result in time lost during re-synchronization. The project involves a prime vendor, and two significant sub-vendors, each one with a Project Manager. All three are critical to the timetable of the project as envisaged. The State project is coordinated by a Project Lead, a Project Manager, and an Oversight Project Manager.
Source:	Vendor(s); State
Impact Description:	Increased project cost due to State staffing requirements beyond projected timeframe and extended parallel operation of current system. Delay in availability of new data for analysis.
State's Planned Response:	<i>Mitigate</i> The State intends to continue to maintain a high level of project communication internally, along with intensive monitoring of vendor project management documents and communications, made available through a shared Sharepoint communication platform. The State has identified itself unequivocally as the final authority on project decisions and progress.
Timing:	Coordination should begin as soon as contract is executed.
Reviewer's Assessment:	We concur with the State's response. We believe this risk has a low level of probability, based on the States record of communication and coordination on this project thus far; and on the vendor's stated understanding that: <ul style="list-style-type: none"> • the State is the final authority on all decisions relating to the project and project management • there is a single authoritative point of contact (HSRI Project Manager) between the state and all vendors involved

Risk ID: 3	Rating: 20 Impact: 4 Probability: 5
Description:	Difficulties in importing historical data from VHCURES 1.0 into the VHCURES 2.0 system could result in a project delay. The difficulty could arise from a lack of cooperation on the part of the incumbent vendor, or from a difference in data format (e.g., value-added fields).
Source:	Incumbent vendor (OnPoint Health Data); data hosting vendor (NORC Data Enclave).
Impact Description:	Increased project cost due to State staffing requirements beyond projected timeframe and extended parallel operation of current system. Delay in availability of new data for analysis.
State's Planned Response:	<i>Mitigate</i> The State PM and PL will coordinate closely with the data hosting vendor (NORC Data Enclave) to continually assess the state of historical data conversion. In the event of delay, the State will review and approve appropriate re-prioritizations on the part of the data hosting vendor to keep the timeline on track.
Timing:	The State should convey its current assessment of this issue to the vendor at the earliest practical time, to assure that vendor project management anticipates any difficulty.
Reviewer's Assessment:	We concur with the State's approach. NORC Data Enclave's Project Manager states that full cooperation of the incumbent vendor is the preferred state of affairs, but that NORC is fully prepared to work with the State to interpret existing fields based on data definitions and to import historical data successfully. Vendor also relates that it has performed similar conversions in the past.

Risk ID: 4	Rating: 8 Impact: 2 Probability: 4
Description:	Tier 1 (desktop installation) support for non-State data users could drain staff resources from GMCB.
Source:	State
Impact Description:	Increased staffing costs due to distraction of highly skilled and costly staff from normal, non-IT duties and assignments.
State's Planned Response:	<i>Mitigate</i> This is not a problem for State data users, as DII reports it will supply adequate desktop support for users. For non-state data users, the State will: <ul style="list-style-type: none"> • clearly define, with assistance from the vendor, the boundary between data hosting vendor support and training, and the need for local support • make clear to non-State data users the need to resolve issues without State resources • make clear to State GMCB staff members the limits of their responsibility to assist (where appropriate)
Timing:	Contract negotiations through implementation
Reviewer's Assessment:	We concur with the State's response. We are not recommending that the GMCB staff be intentionally unhelpful; but rather suggesting an understanding that providing IT help can sometimes be time-intensive, and inappropriate for non-experts to supply.

Risk ID: 5	Rating: 16 Impact: 2 Probability: 8
Description:	Some data users may object to new means and methods of data access and manipulation.
Source:	State and non-State data users
Impact Description:	Delays in full implementation of security and efficiency, if old methods of data delivery (hard drive extracts loaded to server) are continued unnecessarily.
State's Planned Response:	<i>Mitigate</i> The State anticipates some period of transition in the first year of operation. During this time, the State will develop and promulgate a timeline for data users to transition to the new environment.
Timing:	First year of operation
Reviewer's Assessment:	We concur with the State's response. The security and efficiency benefits of the proposed system outweigh reasons to accommodate current practices. Furthermore, we believe most or all users will appreciate and welcome the new capabilities, once they are adequately exposed to these tools.

Risk ID: 6	Rating: 63 Impact: 7 Probability: 9
Description:	In the event that a key member or members of the project team were to become unavailable to the project for any reason, there is a risk that the project could be delayed, leading to increased costs.
Source:	State
Impact Description:	Project delay; increased cost due to delay.
State's Planned Response:	<i>Mitigate</i> The GMCB will consider delaying implementation of the project until such time as a plan ensuring adequate continuity and availability of staff can be put in place with appropriate legislative and administrative approvals. Key staff considering departure are encouraged to stay during implementation. The State will continue to maintain very high levels of information sharing in the project management context, to allow for a certain amount of staff "back up" in the short term. Additionally, depending on a role needing replacement, the State would use internal resources to identify and recruit appropriate staff, and has retained a consultant (for other purposes) who has the skills and connections to identify appropriate staff.
Timing:	Project development, implementation, operation
Reviewer's Assessment:	We concur with the State's response.

Risk ID: 7	Rating: 8 Impact: 8 Probability: 1
Description:	The Center for Consumer Information and Insurance Oversight (CCIIO), which is under the Center for Medicare and Medicaid Services (CMS), must approve the assignment of funds after viewing the final negotiated contract for the proposed project. There is a risk that certain Medicare-related federal funding could be denied if approval is not obtained.
Source:	Federal Government
Impact Description:	Cost increase of state funding portion due to loss of significant federal implementation funding
State's Planned Response:	<i>Mitigate</i> The State will monitor contents of the negotiated project contract for any conflicts with Federal funding requirements.
Timing:	Contract negotiation
Reviewer's Assessment:	We concur with the State's response. We evaluate the probability of this risk as very low; however, it should be recognized for its high impact.

Risk ID: 8	Rating: 18 Impact: 6 Probability: 3
Description:	There is a risk that GMCB staff replacements or additional new staff may not be trained adequately under the current security training process. The current level of security practice and awareness is very high; however, the training process is currently informal.
Source:	GMCB Staff
Impact Description:	Decreased data security, exposure of sensitive data.
State's Planned Response:	<i>Mitigate</i> The GMCB staff will undertake a process to standardize security procedures and training, utilizing existing State resources to the greatest extent practical.
Timing:	Lifecycle of project
Reviewer's Assessment:	We concur with the State's response. Many security training resources already exist within the State (DII), and the need for formalization of the GMCB training process is already recognized at the GMCB.

Risk ID: 9	Rating: 32 Impact: 8 Probability: 4
Description:	Implementation delays could result in an extended data blackout period.
Source:	State and/or Vendor
Impact Description:	Increased cost due to extending current APCD contract. Grant-funding loss or non-compliance, due to unavailability of analytics required for grant-funded activities.
State's Planned Response:	<i>Mitigate</i> The State would likely extend the OnPoint Health Data contract further, to continue data aggregation and release of extracts to State agencies and contractors.
Timing:	Implementation Phase to "go-live"
Reviewer's Assessment:	We concur with the State's response. This risk is dependent upon other delay risks.

ISSUES REGISTER

Issue ID: 1	Impact: LOW
Description:	The project has already experienced some delay since its charter timeline projection (a delay of approximately 4 months thus far, based on an anticipated start date of January 1, 2015).
Source:	State
Impact Description:	State has accrued costs associated with operating VHCURES 1.0 beyond its contract expiration date (August 30, 2014). However, as operating costs of VHCURES 1.0 and VHCURES 2.0 are approximately equal, no net loss to the State occurred, assuming continuation of one or the other VHCURES system.
State's Planned Response:	<p><i>Accept</i></p> <p>The State's delay in project planning was mainly the result of perceived need for adequate planning and preparation, in particular:</p> <ul style="list-style-type: none"> • New data rule development process • Complete specification of RFP requirements • Development and implementation of a Data Governance Committee
Reviewer's Assessment:	We agree that the State's approach was reasonable and proper. Since the cost impact of the delay is low, little harm if any was done.

Issue ID: 2	Impact: LOW
Description:	The statutory requirement of 18 VSA § 9410 (2) (A), that of providing a “price transparency” tool accessible to the public (“consumers”), will not be initially fulfilled by the proposed project.
Source:	State
Impact Description:	The proposed project will not initially meet all legislatively mandated purposes for the database; meeting of the price transparency tool mandate can only occur beyond the initial implementation scope.
State’s Planned Response:	<i>Accept</i> The State decided not to include this capability as a requirement in the initial RFP for the proposed project, because it was seen to be dependent upon developing an appropriate platform (the current project) and defining the purpose and scope of the Price Transparency tool completely (a lengthy process). The vendor, HSRI, has been informed and is aware of the desirability of fulfilling this mandate. The vendor has provided evidence that the proposed project will provide a suitable platform for development of a Price Transparency tool.
Reviewer’s Assessment:	We agree that the State’s approach was reasonable and proper.

8. COST BENEFIT ANALYSIS

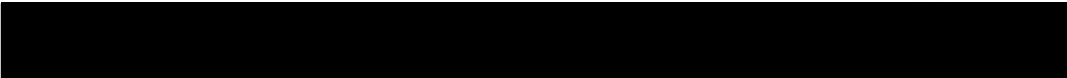
8.1 ANALYSIS DESCRIPTION:

Provide a narrative summary of the cost benefit analysis conducted.

These cost estimates were used:

- Development and implementation costs from the vendor's cost proposal
- Maintenance and Operation costs from the vendor's cost proposal
- State staffing costs from the GMCB IT ABC form for this project
- State cost sources

The following costs were included:

- 
- Initial setup and use license costs are shown in the "Software" section;
- Ongoing license fees are subsumed in Maintenance costs shown in the "Other" section, and are not separately broken out.
- Training costs included in the fixed price offered by the vendor, and including all vendor staff, time, and materials costs.
- State staff cost figures derived from the IT ABC form for this project, calculated by the project team using actual hourly rates or standard state estimate rates, as appropriate. We agree that these figures are reasonable and likely.

Costs not included:

- Ad-hoc additions of Population files to the Master Person Index. These costs are estimated by the vendor in the cost proposal, but such additions are optional to the State and would occur at a later date if desired by the State.

8.2 ASSUMPTIONS:

List any assumptions made in your analysis.

We assume the vendor's offered price will not rise above the firm fixed price in the submitted Cost Proposal. (The price may decrease in the event of a lower cost best and final offer (BAFO).

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.

Funding sources for initial implementation (FY15) include:

State monies		54.26%
Federal	Exchange Funds, Global Commitment to Health, Rate Review Grant	45.74%

Funding sources for continued implementation (FY16, FY17) and ongoing operating costs include:

State monies		54.26%
Federal	Exchange Grant, Global Commitment to Health, Rate Review Grant	45.74%

The State collects industry funds to support this project in at least two forms:

- Vermont statutes (32 VSA § 10402) assign a portion of the proceeds from a State tax imposed on health insurers for operation of VHCURES under the auspices of GMCB.
- Vermont statutes (18 V.S.A. § 9374(h)(1)) mandate the GMCB to “bill-back” 60% of expenses “incurred to obtain information, analyze expenditures, review hospital budgets, and for any other contracts authorized by the Board” to health care industry participants, including for-profit and nonprofit hospitals and medical service corporations, health insurance companies, and health maintenance organizations (HMOs).

Center for Consumer Information and Insurance Oversight (CCIIO), which is under the Center for Medicare and Medicaid Services (CMS) must approve the final negotiated contract for the proposed project. **There is a risk that Medicare-related funding could be denied if approval is not obtained, leading to project delay as alternative sources are identified, or the contract amended to gain approval. RISK_ID# 7** We assess likelihood of this risk occurring as minimal.

8.4 TANGIBLE BENEFITS:

Provide a list and description of the tangible benefits of this project. Tangible benefits include specific dollar value that can be measured (examples include a reduction in expenses or reducing inventory, with supporting details).

- **\$472,347 annually, with current staffing**
Cost Reduction by conducting a portion of analytics in-house rather than by external vendor. Currently, the GMCB contracts with external data analysts to process and analyze data retrieved from the APCD for purposes of policy development. [REDACTED]
[REDACTED] Although this possibility was hoped-for, it was not necessarily anticipated as part of this project, so estimates of a tangible benefit are in the early stages of development. Historically, the cost of out-sourcing analytics is approximately **\$1.5 million** annually. **At this time, the GMCB estimates that around \$472,347 annually may eventually be realized in cost reduction, based on current expenditures and current expert staffing.**
- With additional staffing proposed, higher cost reduction of around **\$944,693** could be achieved; see *Impact Analysis On Net Operating Costs*, Section 9 below.
- **\$21,500 annually**
Cost reduction by automatic creation of the Annual Paid Claims and Enrollment Report (APCER) within the proposed system, currently out-sourced.

8.5 INTANGIBLE BENEFITS:

Provide a list and description of the intangible benefits of this project. Intangible benefits include cost avoidance, the value of benefits provided to other programs, the value of improved decision making, public benefit, and other factors that become known during the process of analysis. Intangible benefits must include a statement of the methodology or justification used to determine the value of the intangible benefit.

- **Significant improvement of alignment with legislative mandates for VHCURES**
(See *Project Goals*, above)
- **Improved data quality, potentially leading to reduced health care costs and/or improved health care quality**

The addition of a Master Person Index feature, with related data fields, to the APCD provides the opportunity for enhanced quality of health care data analysis (by means of episodic analysis, for example). This opens the door to better and more granular data analysis, supporting the mission and mandates of the GMCB.

- **Improved data quality, leading to more valuable data**

The addition of a Master Person Index feature, with related data fields, as described above, also potentially increases the monetary value of the data contained in the database (while protecting personally identifiable information). At this time, the State has not decided to gain revenue by making data or data analysis available to industry for fee.

- **Elimination of hardware and related support costs**

Currently, the State (AHS) maintains a server in support of the VHCURES 1.0 operation.

Maintenance and support, including security maintenance, of this hardware would no longer be required under VHCURES 2.0.

- **Improved Security and reduction of security-associated costs**

Current data extract and use operations under VHCURES 1.0 require the physical transport of hard drives and transfer of data to servers operated by data users, both within and external to State government. Security procedures are extensive, and require State staff time to assess, evaluate, and inform or train data users in procedures. The proposed project could lighten this load, and at the same time provide a more secure environment for Vermont citizen and payer data, and lessen greatly the possibility of a security breach.

- **Further cost reductions in staff time by automating reports**

VHCURES 2.0 allows automation of certain reports (similar concept to APCER report, above).

This automation will reduce costs associated with manual generation and validation of reports currently done by GMCB staff.

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.

In our opinion, the projected benefits of the proposed system greatly outweigh the costs of the proposed system. As our Cost Impact Analysis (below) will demonstrate, ongoing operating costs are in line with continued operation of the current system, while tangible (cost reduction) and intangible benefits are highly desirable. This leaves primarily the cost of implementation and development, which is in line with other comparable implementations. The cost of implementation is significantly funded by non-State sources, and the State portion is largely offset by fees and taxes dedicated to the 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.

The IT Activity Business Case & Cost Analysis (IT ABC) (version 2.1, 3/12/14, and associated updated Annual \$100K IT activity information Validation and Reporting form, no version) is significantly aligned with the project as it exists now. However, a few items are incongruent:

- Item V.9, Business Case, (describing the annual assessment for paid claims reporting) states that “this project will allow continuity in the process to collect the annual assessments but will not necessarily raise further revenue.” Later, in section VIII, Net Impact to State Operating Costs, an annual increase in State revenue under the proposed project of \$540,000 is identified – referring to the Bill-Back revenue. This appears to be an inconsistency, *but in fact* these items refer to different matters: Item V.9 refers to the Paid Claims Tax assessment (mentioned in *Historical Background*, above). VHCURES 2.0 will continue the State’s ability to audit claims data to support the Paid Claims Tax. The entry in Section VIII, Net Impact to State Operating Costs, refers to the Bill-Back Revenue, new to the GMCB with the arrival of VHCURES from DFR and the initiation of the VHCURES 2.0 project. (We note, however, that the bill-back revenue would probably be available to GMCB similarly, were the decision taken to continue VHCURES 1.0 and not implement VHCURES 2.0).
- Section II., New IT Activity / Project Costs , significantly under-estimates the proposed implementation costs [REDACTED] [REDACTED]. However, this is not very unusual, given the timing of the original Business Case and Update forms at the beginning of the proposal solicitation process.

Additional Comments on the Cost Benefit Analysis:

none

9. IMPACT ANALYSIS ON NET OPERATING COSTS

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

Please refer to the following charts and spreadsheets

Charts Page 1 shows the **breakeven point of the proposed VHCURES 2.0 compared to the current VHCURES 1.0, over the lifecycle of the project, including implementation costs, cost reduction** as described in *Tangible Benefits*, above. [See Attachment 4, *Cost Impact Analysis spreadsheet*, tab 2 (Acquisition Costs), for tabular data source]

Charts Page 2 shows costs of **Operation & Maintenance only** of the proposed VHCURES 2.0 compared to the current VHCURES 1.0, over the lifecycle of the project, **not including cost reduction as described in *Tangible Benefits*, above, or implementation costs.** [See Attachment 4, *Cost Impact Analysis spreadsheet*, tab 3 (Totals, O&M only, No Rev or CA), for tabular data source]

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

We interpret the State's request for a "breakeven analysis" to mean a comparison through time of the costs and tangible benefits associated with the proposed project (VHCURES 2.0) with costs and tangible benefits associated with continuation of the current project (VHCURES 1.0).

To this end we

- carried over costs for implementation and ongoing operation, identified in the *Cost Benefit Analysis*, above (see Attachment 3, *Cost Spreadsheet*);
- added to the analysis the comparative costs of continuing the current project;
- added to *both* the current and proposed project anticipated bill-back revenue (we did this to avoid confusion with the IT ABC form, which identifies this revenue);
- added to VHCURES 2.0 the *tangible benefit* of cost reduction from increased in-house analytics. This is demonstrated in 2 separate versions:
 - with current staffing.
 - with additional proposed staffing.³⁶
- added to VHCURES 2.0 the tangible benefit of automatic creation of the Annual Paid Claims and Enrollment Report (APCER), currently costing over \$21,500 annually.
- added to VHCURES 2.0 the *costs* of continuing VHCURES 1.0 in parallel operation (in 2 separate scenarios) until VHCURES 2.0 is up and running, and historical data is imported.
- Totals for the above were accumulated year-by-year for the 10-year lifecycle of the project.

³⁶ Note: The cost of staffing in the second version is not included. These are general GMCB staff, multiply tasked, and not dedicated solely to project activities.

[Spreadsheet notes explain the sources of figures and the calculations employed.]

EXPLANATION OF CHARTS ON THE FOLLOWING PAGES, DERIVED FROM ATTACHMENT 4, COST IMPACT ANALYSIS

The first set of charts (Charts Page 1)

interprets the above in 2 likely scenarios, showing ***cumulative*** costs over the lifecycle of the project, with **no additional staffing**, for :

- parallel operation for 6 months
- parallel operation for 1 year

The second set of charts (Charts Page 2)

interprets the above in 2 likely scenarios, showing ***cumulative*** costs over the lifecycle of the project, with **proposed additional staffing**, for :

- parallel operation for 6 months
- parallel operation for 1 year

The third set of charts (Charts Page 3)

employs a similar spreadsheet as above, but excludes

- All anticipated cost reduction from in-house analytics;
- All implementation costs

and shows comparative ***cumulative*** costs over the lifecycle of the project for **operation and maintenance of the project only**, in **3 scenarios**:

- no parallel operation,
- parallel operation for 6 months
- parallel operation for 1 year

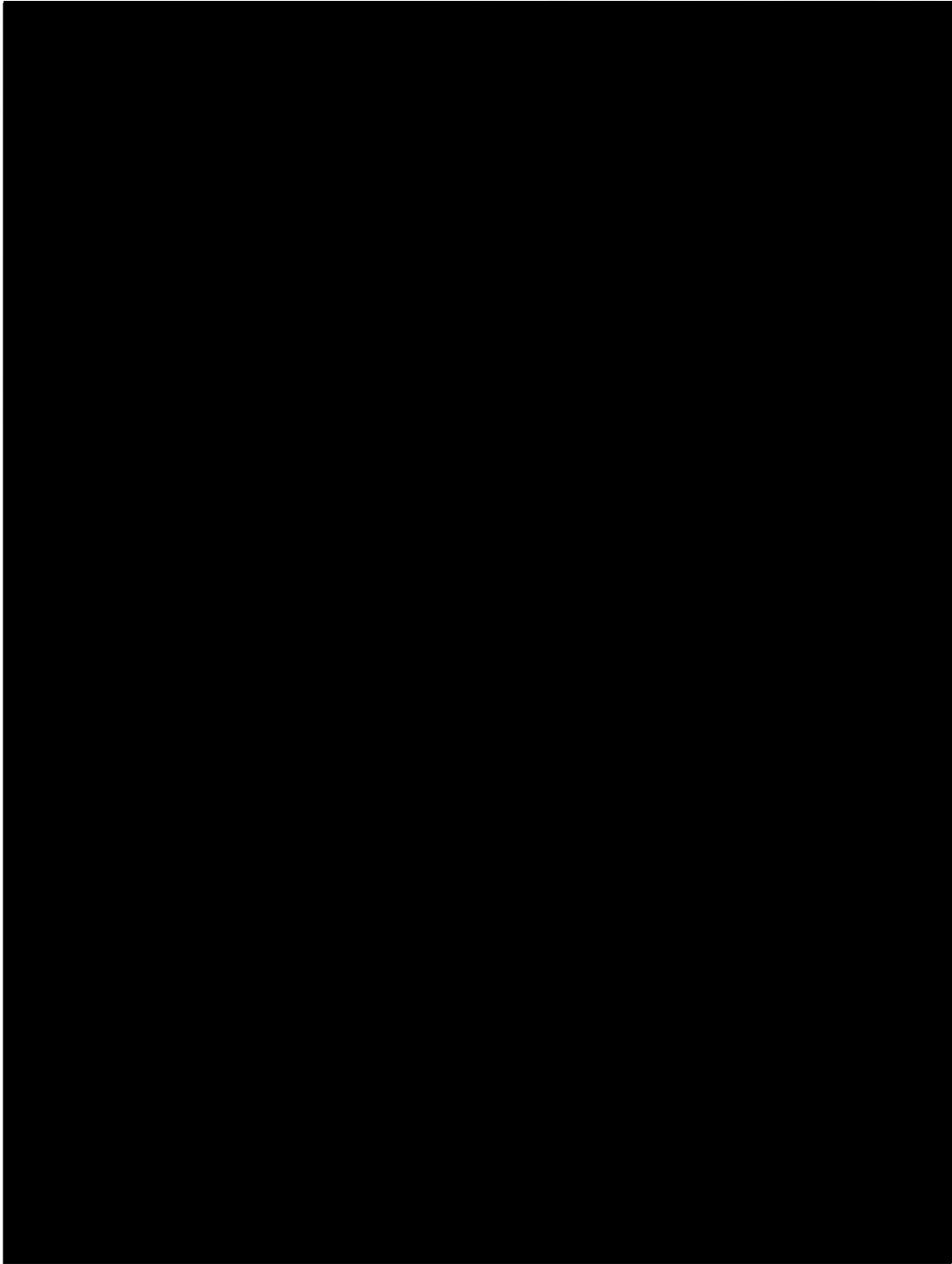
We believe this shows an “apples to apples” comparison of operating costs between the 2 systems.

[REDACTED]

[REDACTED]



Cumulative Dollars Spent: Current vs. Proposed
(VHCURES 1.0 vs. VHCURES 2.0)
Over Project Lifecycle, With Add'l Staffing (Staffing Cost Not Included)



[Redacted]

[Redacted]

9.3 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.

(Please refer to Section 8.3 *Cost Benefit Analysis, Funding*, above)

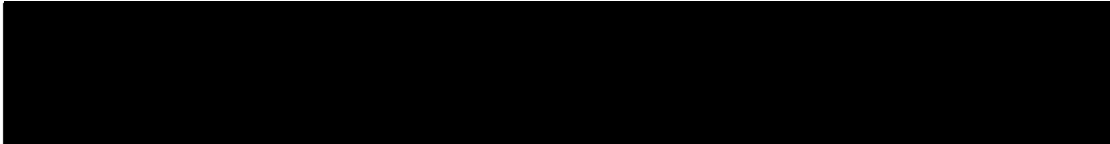
9.4 WHAT IS THE BREAK-EVEN POINT FOR THIS IT ACTIVITY (CONSIDERING IMPLEMENTATION AND ON-GOING OPERATING COSTS)?

The first set of charts (no additional staffing) shows these results:

- parallel operation for 6 months – “breakeven” point around FY 2022
- parallel operation for 1 year – “breakeven” point around FY 2024

The second set of charts (additional proposed staffing) shows these results:

- parallel operation for 6 months – “breakeven” point around FY 2018
- parallel operation for 1 year – “breakeven” point around FY 2019



10. ATTACHMENTS

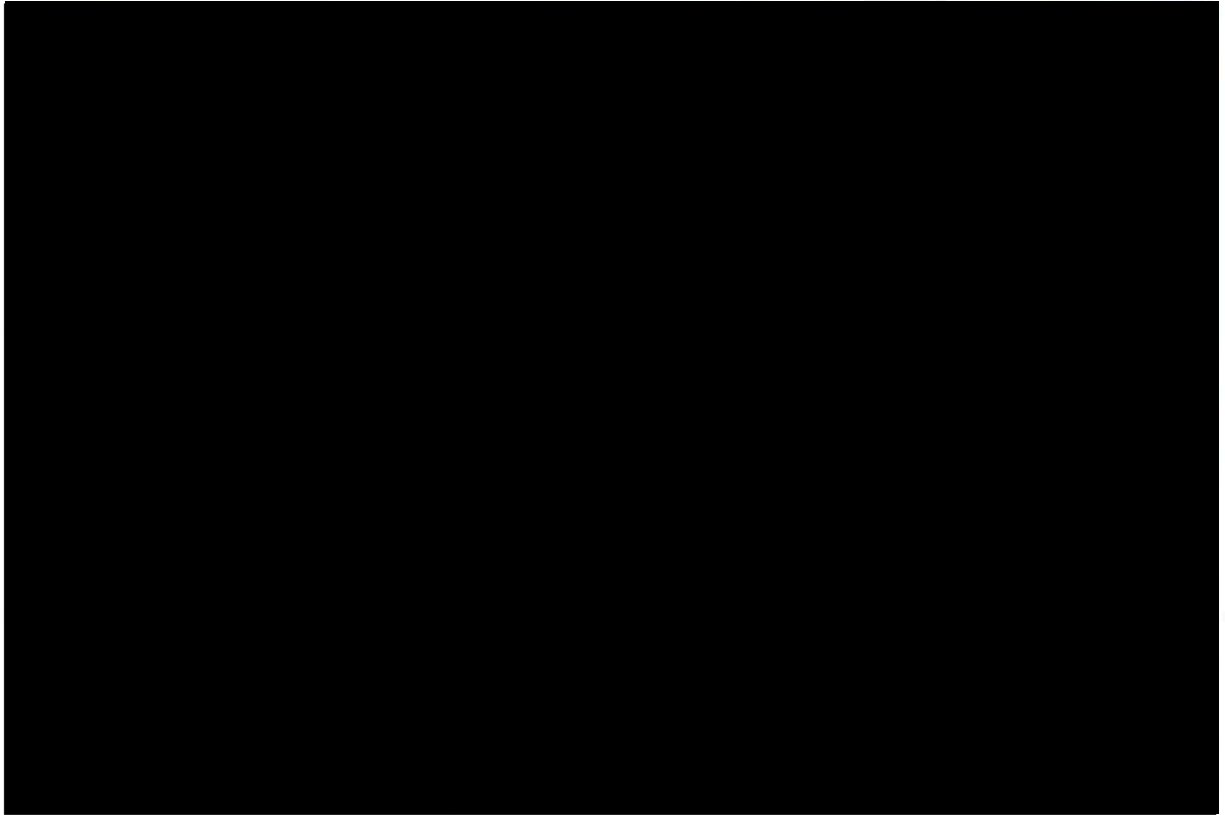
Attachment 1 – Illustration of System Integration

Attachment 2 – Risk & Issues Register Summary

Attachment 3 – Lifecycle Cost Benefit Analysis

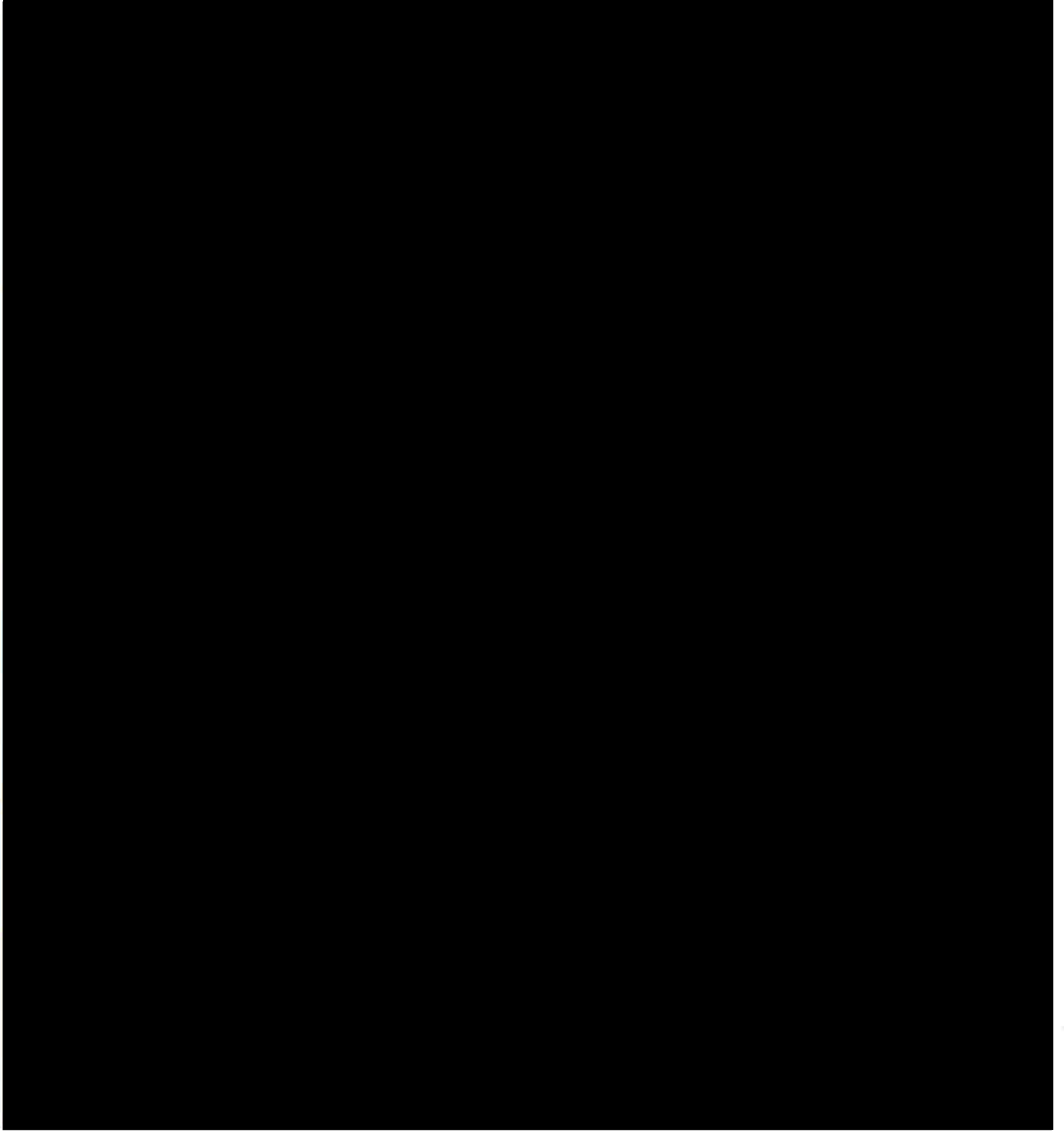
Attachment 4 – Cost Impact Analysis

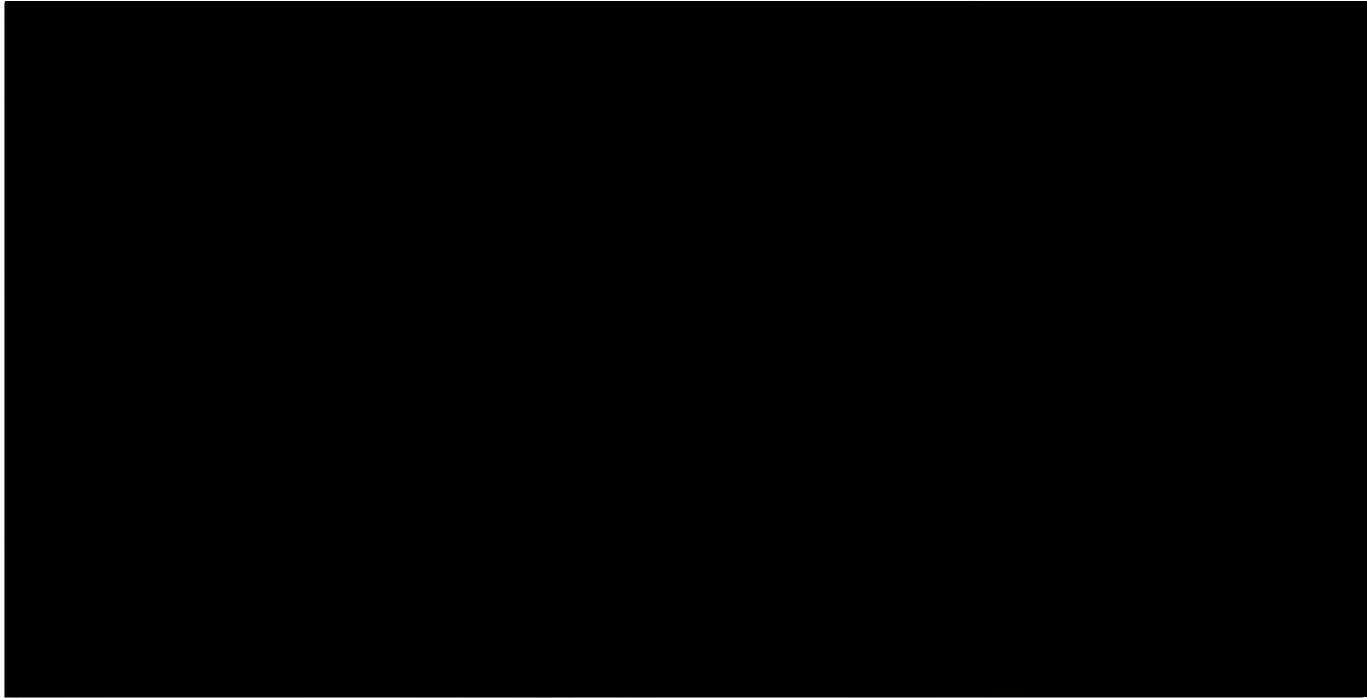
ATTACHMENT 1 – ILLUSTRATION OF SYSTEM INTEGRATION



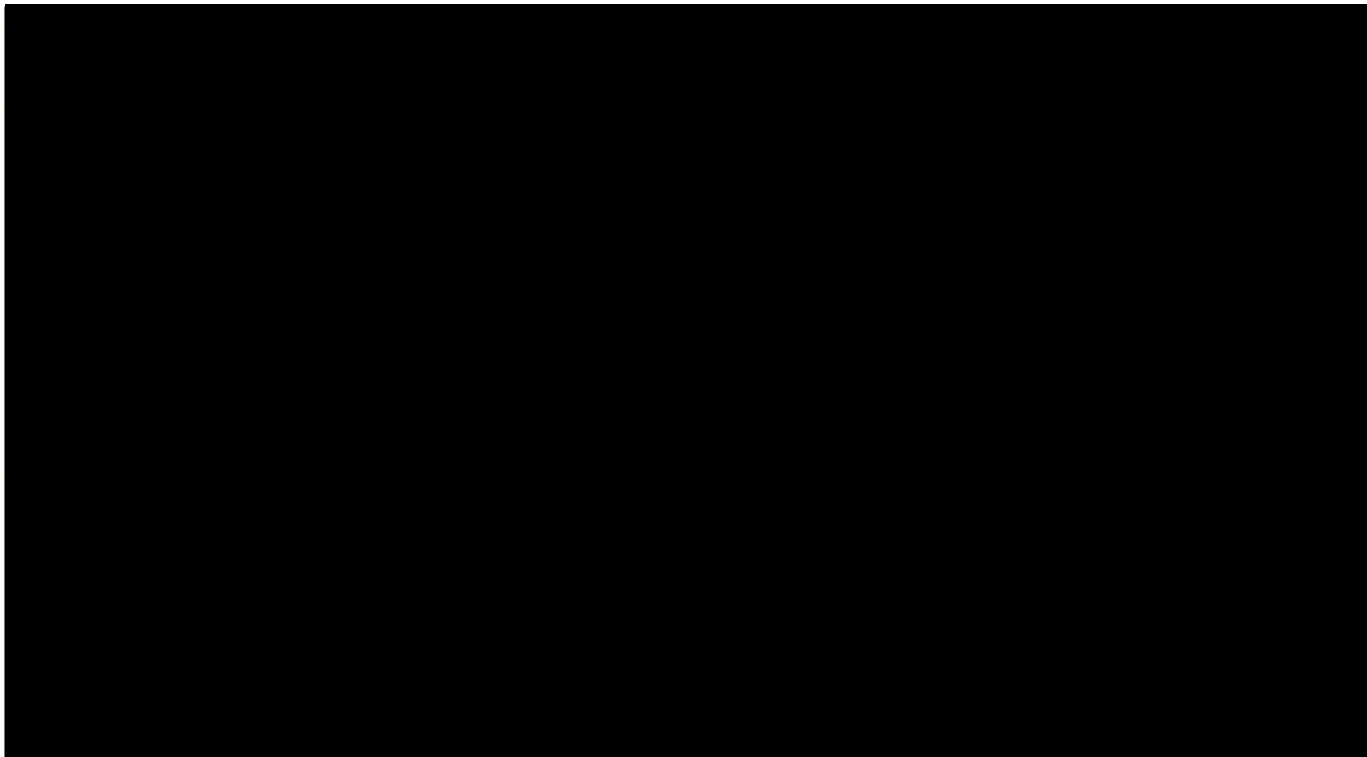
ATTACHMENT 2 – RISK & ISSUES REGISTER SUMMARY

RISK SUMMARY



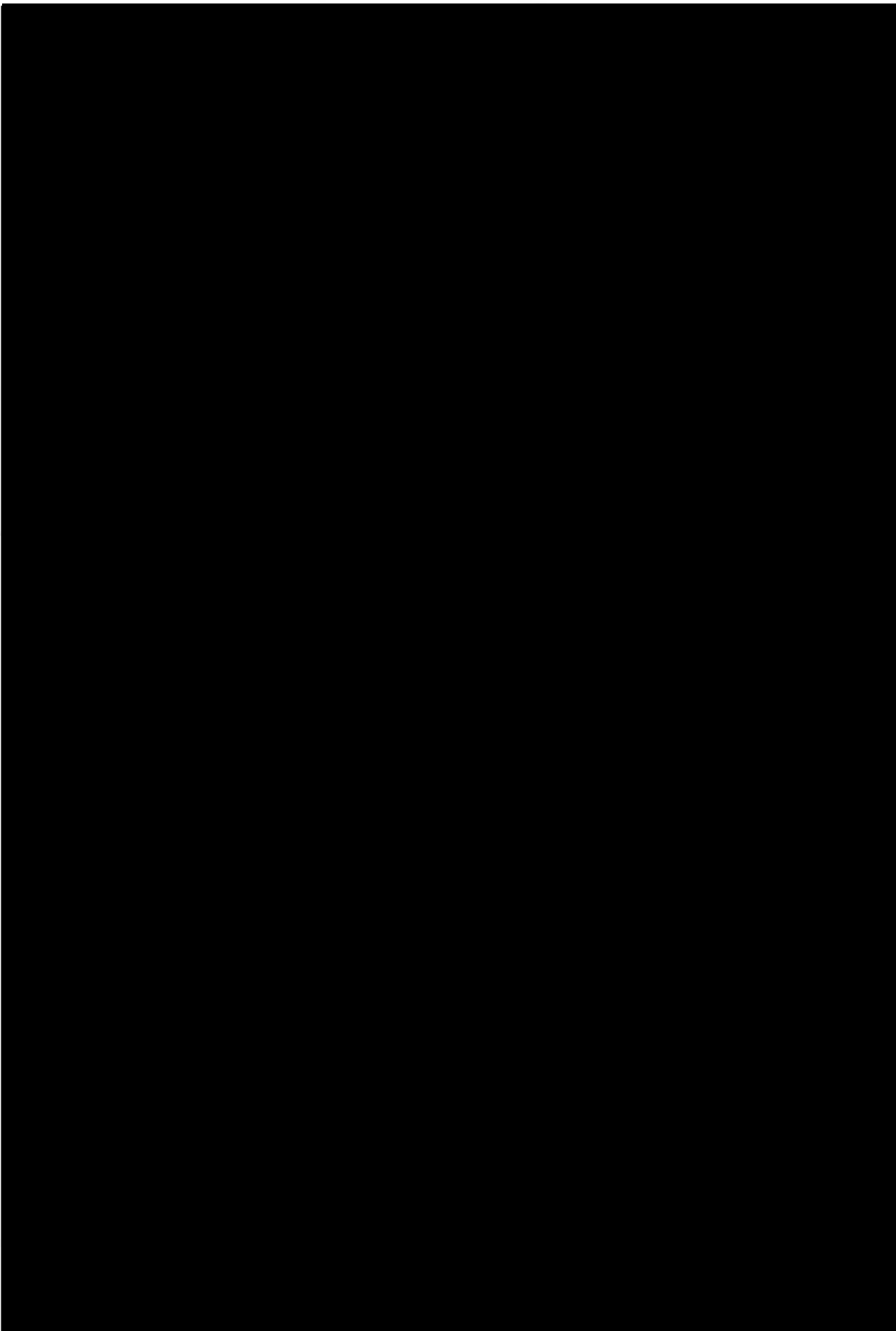


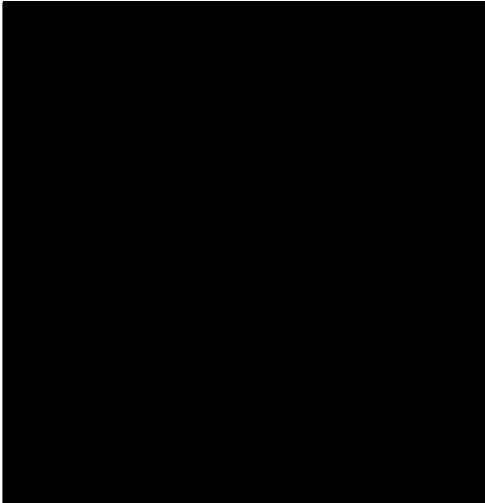
ISSUES SUMMARY



ATTACHMENT 3 – LIFECYCLE COST BENEFIT ANALYSIS







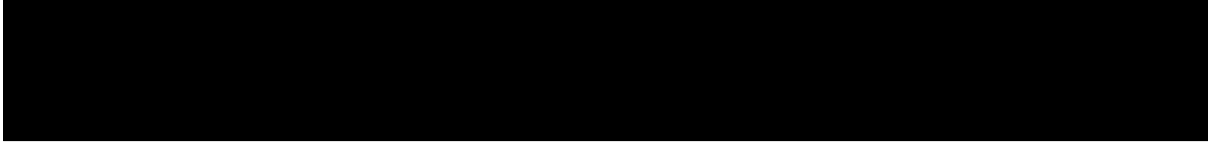
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2014/Dec/24

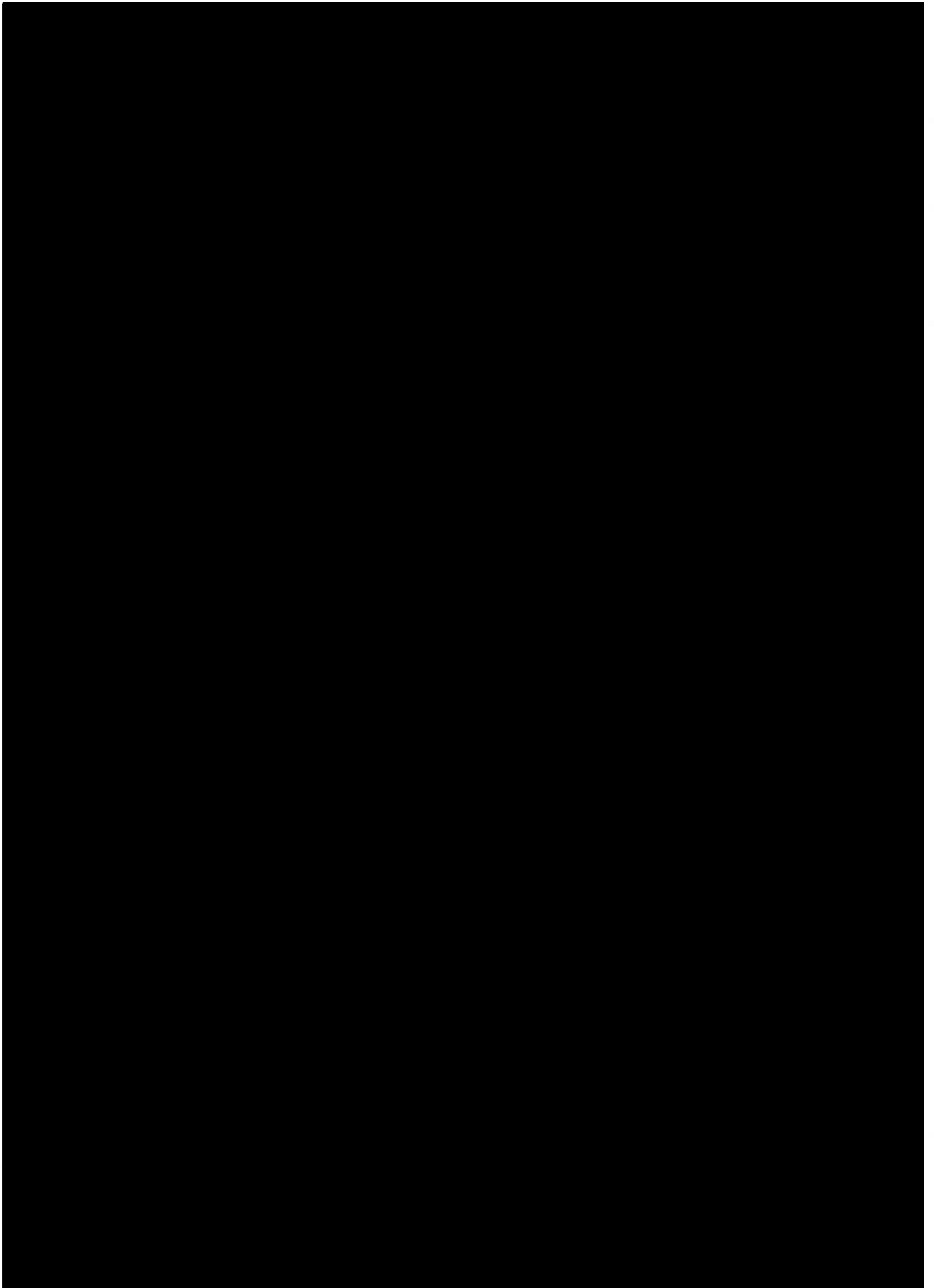
COST SPREADSHEET
Acquisition Costs

Prepared by:
Paul E. Garstki, JD
Northeast Computer Systems, Inc.

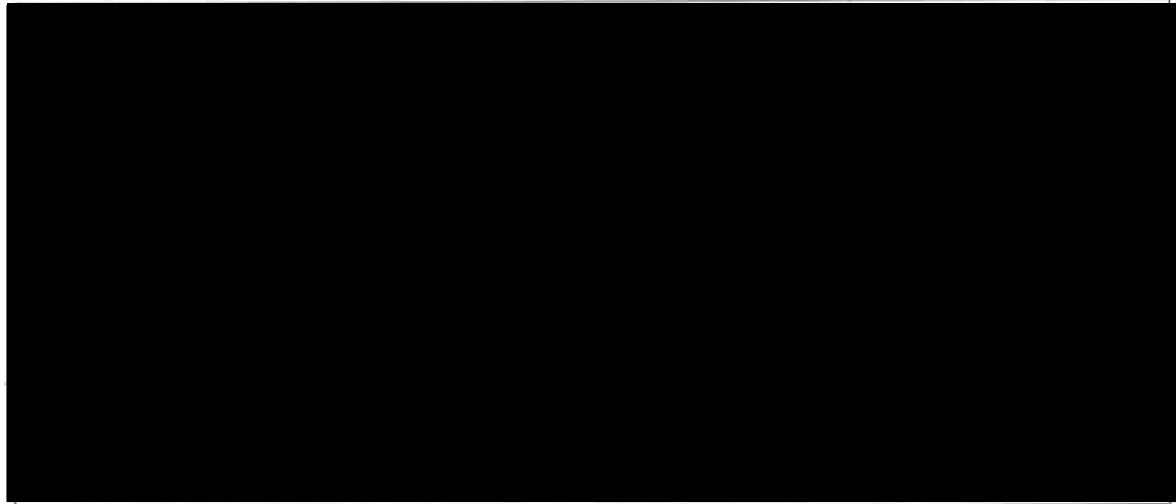
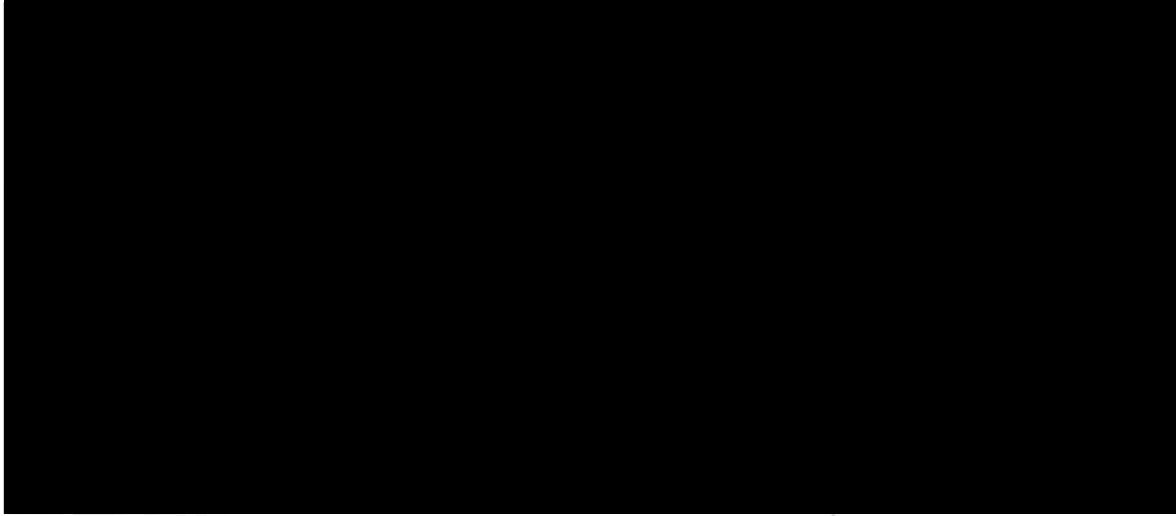
ATTACHMENT 4 – COST IMPACT ANALYSIS

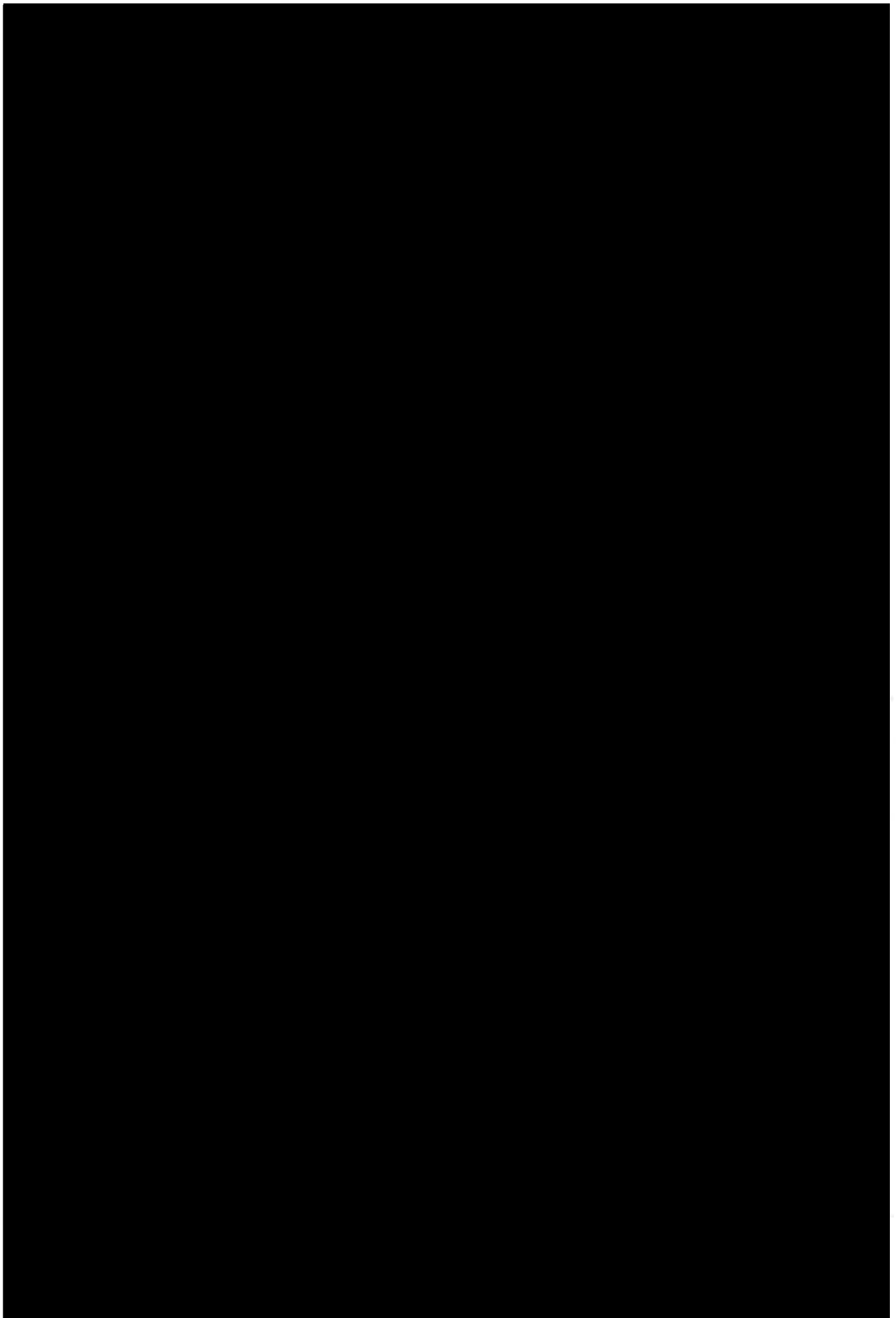
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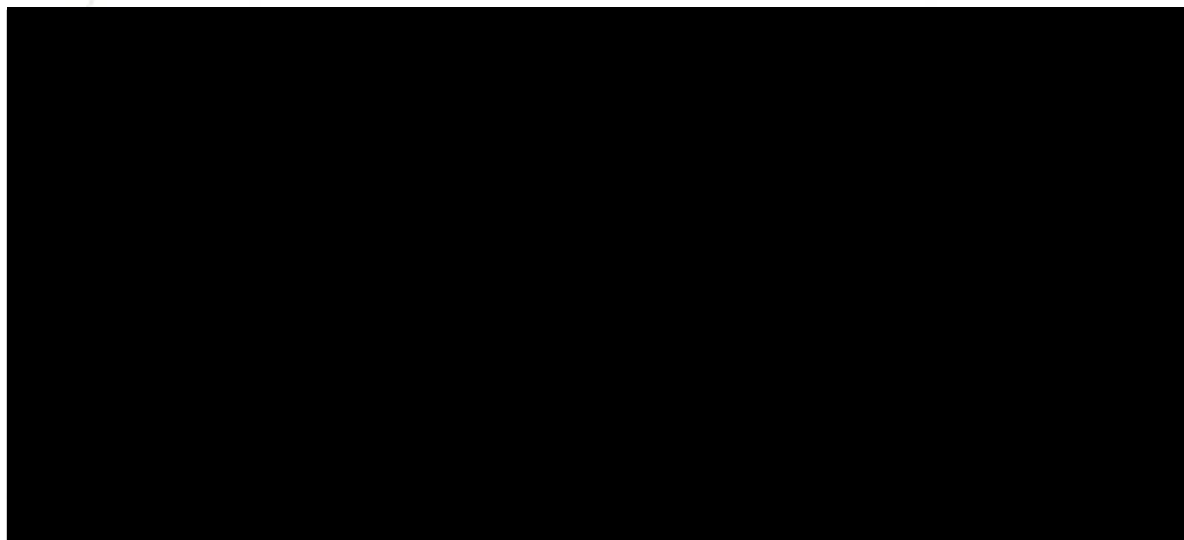
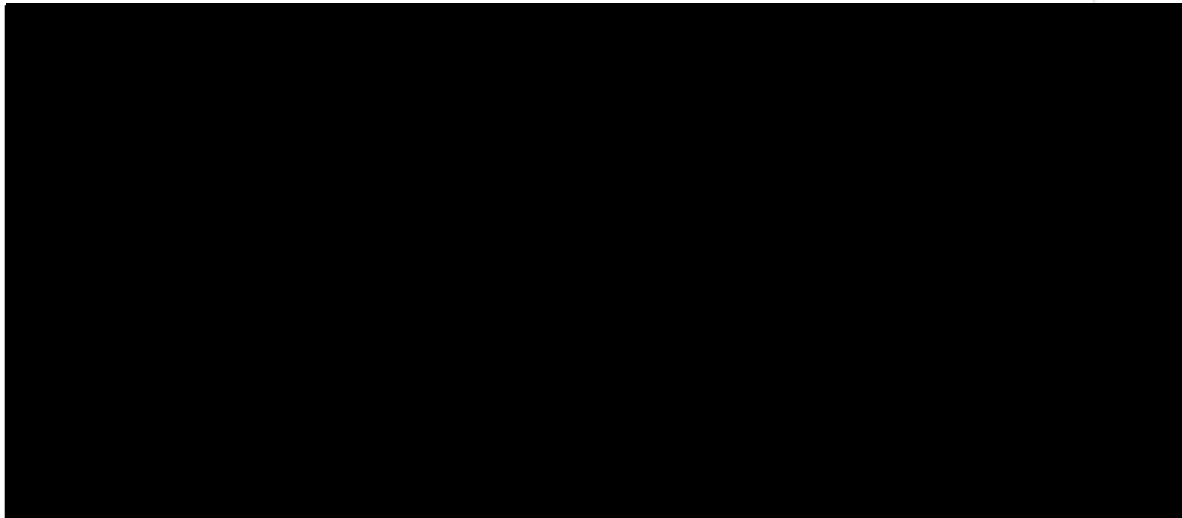


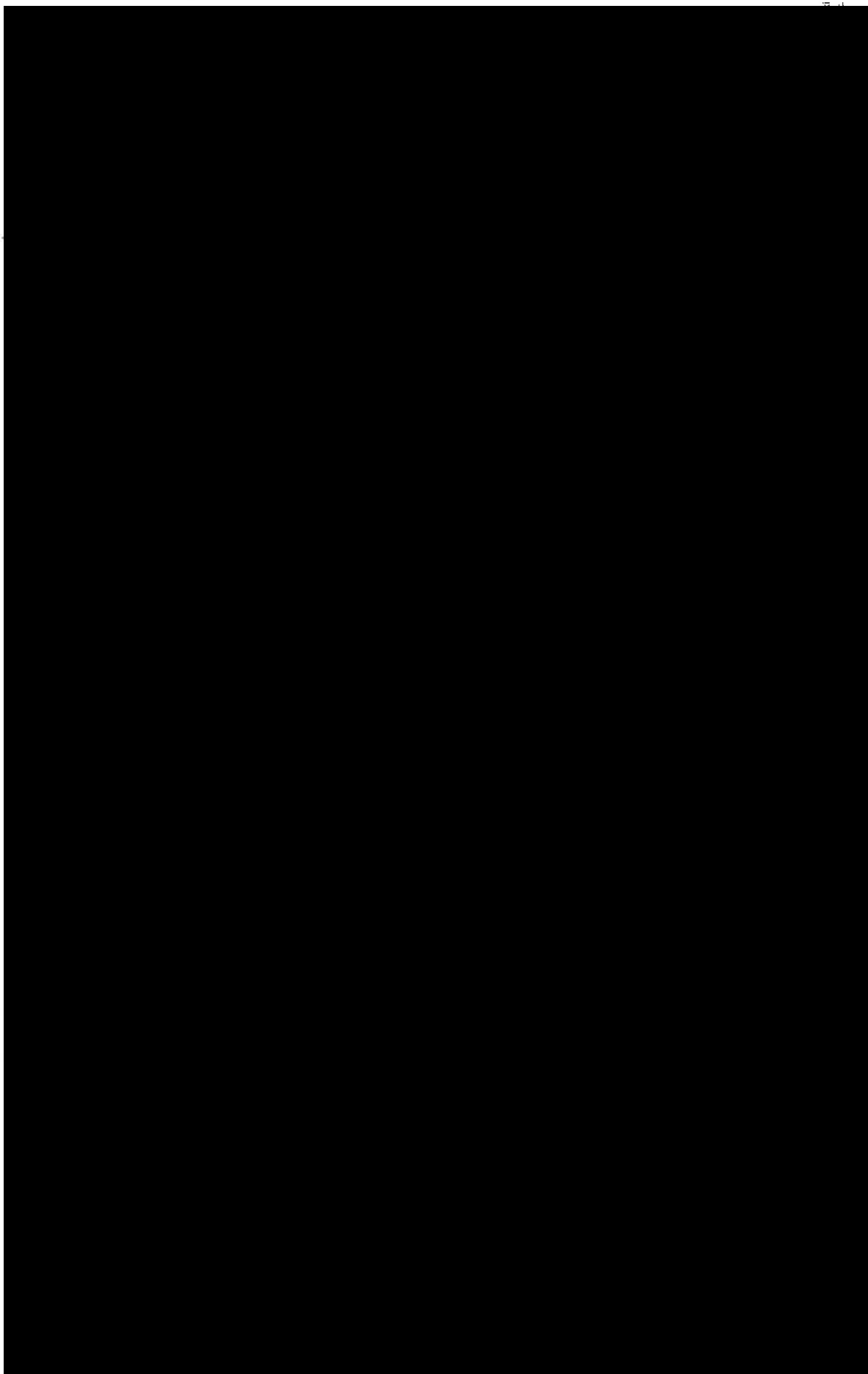
Cumulative Dollars Spent: Current vs. Proposed
(VHCURES 1.0 vs. VHCURES 2.0)
Over Project Lifecycle, Without Additional Staffing





Cumulative Dollars Spent: Current vs. Proposed
(VHCURES 1.0 vs. VHCURES 2.0)
Over Project Lifecycle, With Add'l Staffing (Staffing Cost Not Included)





Cumulative Dollars Spent:
Current vs. Proposed (VHCURES 1.0 vs. VHCURES 2.0)
Operation & Maintenance Only
(No Implementation, Revenue, or Cost Avoidance Included)

