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State of Vermont
Information Technology Strategic Plan
2017 – 2021

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Introductory Message

I am pleased to present the 2017 State of Vermont Information Technology (IT) Strategic Plan. The purpose of this plan is to set forth IT strategic goals and primary initiatives for state government for the next five years. Many thanks to my colleagues across state government for their help with putting this document together. I look forward to working with all of you as we continuously improve our ability to support the delivery of government services to Vermonters.

This plan is updated every year, and If you've followed previous versions, you will notice this year's goals are not significantly different. However, Governor Phil Scott has proposed a key change that will help us modernize and become more effective. He has proposed the creation of a new agency focused on digital government services, and under his leadership, we are taking a fresh approach to technology related challenges and opportunities.

The new Agency of Digital Services (ADS) brings together technical and business professionals from across the Executive Branch to support the ongoing, statewide transition to digital government. Examples of this work include continuous evaluation and improvement of systems that deliver support to Vermonters and state employees. For example, turning citizen feedback into improved experiences with government interactions. The agency will also manage strategic investments in technology and manage the timing and pace of digital government enhancements. Benefits of creating this new agency are reflected in its goals and objectives which are still a work in progress. For example, increasing data security, better communication and coordination across traditional boundaries, increased survivability and recovery when faced with disaster, and well informed spending decisions.

Many people have been involved in setting context and boundaries for the new agency, and further planning and execution will be accomplished by a broad coalition of state employees as well as our vendor partners and the public. The Agency of Digital Services shares goals and will work closely with the Government Modernization and Efficiency Team (GMET) and the Governor's Program to Improve Vermont Outcomes Together (PIVOT).

I look forward to the challenges in the coming year and building a strong team together among the many talented IT professionals in State government. Through our collective commitment, we will leverage technology to best meet the needs of Vermonters and do so as cost effectively as possible.

Sincerely,
Darwin Thompson
Commissioner of the Department of Information and Innovation

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Mission

To enable state government to keep pace with digital service delivery expectations of citizens, businesses and government organizations.

Vision

Contribute to the prosperity of Vermonters through productive partnerships with service providers.

Goal 1 – Be effective and efficient

Effective, efficient delivery of technology means little unless it helps solve problems for the people using it. Therefore, we will judge our success in terms of outcomes for program providers and recipients of government services. Our approach to optimizing effectiveness and efficiency continues to include appropriate consolidation of infrastructure and common services, leveraging cloud services, learning from the success of others, and measuring results.

Activity

Consolidate infrastructure and common services

We've been consolidating infrastructure and common services since 2010. We've completed much of the work as planned, and will define the work left to do in the context of the new Agency of Digital Services.

To-do:

- Identify and document wide and local area networks not under central management by May 31, 2017
- Complete network consolidation by June 30, 2018
- Analyze and document personal computing support requirements for all state employees by June 30, 2017.
- Standardize and document personal computing support processes for all state employees by June 30, 2018
- Identify and document server and storage infrastructure not under central management by June 30, 2017.
- Bring all server and storage infrastructure into compliance with documented standards by June 30, 2018.
- Strengthen and publish associated policy and standards by May 31, 2017.

Leverage cloud services

We have been moving selected IT services to the public/government cloud for nearly five years, but much of the state computing infrastructure remains inside our state network, i.e. our private cloud. A key to understanding why the cloud is good centers on management standards. A managed cloud service, whether here or not, is more secure, more resilient, and more sustainable, and generally more cost effective than the alternatives. The cloud has freed agencies and departments from the burden of managing server hardware, databases, networking, and critical operational functions. Adding additional services in the cloud is fast, offering quick turnaround for new applications and services for Vermonters.

To-do:

- Assess and document the current state of public/government/private cloud services by June 30, 2017
- Build cost and risk models that support decision making on locating managed services by October 31, 2017.

- Document and implement recovery point and recovery time requirements for critical systems by June 30, 2018.
- Strengthen and publish associated policy by July 31, 2017.

Leverage the success of others

Vermont is a special place with our own style and approach to life and government, but we are not unique from a technical perspective. We need the same approaches and often the same tools as other states as we deliver healthcare, education, infrastructure such as roads and telecommunications, permitting, licensing, and other services. We often consult with our peers to leverage solutions for common problems. This collaboration is reflected in our contracting process, our approach to information security, the application of lessons learned from common projects, training initiatives and practically everything else we do.

Measure results

By incorporating standard metrics into IT delivery, we can measure our performance against our peers and against competing sources for the service. For example, by measuring the cost of a service that is available from multiple sources (i.e. State provided or outsourced), we can make appropriate choices about how to source that service. In addition to sourcing, metrics can be used to measure improvements in service, and benefits will be compounded when used in conjunction with results based accountability (RBA).

Goal 2 - Reduce risks to data security

Activity

Managing data security risk requires the involvement of everyone. Implementing an information security strategy includes managing data based on classification, maintaining defense in depth and providing security awareness for all employees and contractors. Our to-do list includes policy development, continuous assessment, training, security design and project execution. Security is a priority for every system we buy or build.

Manage data based on its classification

To properly protect data, we must understand what the data is and what rules apply. For example, we protect open data like the state budget differently than closed data such as patient health information. For open *and* closed data we need to control authenticity, but closed data requires additional protection to limit access. Understanding this helps to optimize safeguards.

To-do:

- Assess and document data classifications and protections in our 10 most critical systems by June 30, 2017.
- Review and standardize procurement processes by April 30, 2017 to ensure data is protected in systems we buy.
- Strengthen and publish associated policy by February 28, 2017.

Defense in depth

Defense in depth is the concept of protecting a computer network with a series of defensive mechanisms such that if one mechanism fails, another will already be in place to thwart an attack. Because there are so many potential attackers with such a wide variety of attack methods available, there is no single method for successfully protecting a computer network. Utilizing the strategy of defense in depth will reduce the risk of having a successful and likely very costly attack on a network. Examples include Firewalls, Network Intrusion Detection Systems (NIDS), Network Segmentation, Strong Authentication, and Encryption. The specific technologies may change, but the strategy is sound.

In any given week, we see over 10,000 attempts to gain unauthorized access to state resources.

To-do:

- Assess and document roles and responsibilities related to delivering security by February 28, 2017.
- Strengthen and publish associated policy by February 28, 2017.

Train employees and partners on security awareness

Employees are the last line of defense. Security awareness training pays off when users prevent malicious activity that other efforts failed to prevent. Knowing how to recognize and respond to phishing and social engineering is priceless.

To-do:

- Roll out updated security training by April 30, 2017.
- Review and standardize incident response processes by April 30, 2017.
- Strengthen and publish associated policy by April 30, 2017.

Goal 3 - Help project teams deliver successful projects

Activity

Apply Best Practices for Project Management

We have established repeatable project management processes consistent with industry standards and best practices, and we offer project management guidance and training. Project managers in state government provide oversight as well as hands-on management of projects. We provide useful tools, templates and information that contribute to project success. Our project management processes integrate and reinforce transparency, accountability and collaboration, allowing us to detect and fix problems earlier, mitigate risks appropriately, and produce realistic schedules.

To-do:

- Verify attributes of all IT projects above $500K by February 28, 2017.
- Organize and charter a statewide project portfolio management (PPM) team by May 31, 2017.
- Strengthen and publish associated policy by May 31, 2017.

Leverage business process optimization (BPO) processes

Business process optimization activities essentially minimize the resources required to get things done. When used in conjunction with automation, programs get double the benefit. It makes no sense to automate a bloated process. Agencies and departments are leaders in business process optimization. The Agency of Natural Resources (ANR) provides a standout example. ANR technologists and program teams have been active participants in Lean for a few years. The goal of Lean is to maximize customer value while reducing waste in the business process. Many outcomes from Lean process improvement call for the use of technology solutions to automate business processes and enable efficiencies. ANR IT has been involved to help facilitate the recommendations in the process to ensure they are manageable and sustainable.

To-do:

- Train 50 people in Lean concepts by May 31, 2017
- Review and standardize BPO approaches by June 30, 2017.
- Strengthen and publish associated policy by May 31, 2017.

Apply Enterprise Architecture

Enterprise Architects work closely with agency leadership and technical professionals to ensure we choose appropriate technologies to support service delivery needs. Thus, when appropriate enterprise

architecture is included in a project, the technology is aligned with business goals. The primary benefit is information technology becomes a direct contributor to better business outcomes. For Vermont, this means consumers of government services have a better experience when transacting business with state programs. It also means we can accomplish more with equal or less effort, allowing us to reallocate people resources as necessary. Proper alignment of technology with business goals also reduces duplication and creates economies of scale.

To-do:

- Organize and charter a statewide application portfolio management (APM) team by May 31, 2017.
- Review and standardize application governance processes by May 31, 2017.
- Review and contribute to statewide telecommunications and broadband infrastructure planning by April 30, 2017 and participate in continuous improvement for the benefit of government and Vermont citizens.
- Strengthen and publish associated policy by May 31, 2017.

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Current Portfolio of Active IT Projects Over $500,000

DII's Enterprise Project Management Office (EPMO) tracks and provides oversight for IT projects with lifecycle costs[1] over $500,000 in accordance with State statute (3 V.S.A. § 2222(a)(9). Below is a list of active projects. Additional detail is available on IT projects with estimated lifecycle costs of $1,000,000 or more in the EPMO's Million Dollar Report.

Active IT Activities (as reported to DII)	*Lifecycle Years*	*Total Lifecycle Costs*
AHS Central Office		**$1,061,249.91**
AHS Learning Management System	10	$1,061,249.91
Buildings & General Services		**$5,931,387.46**
AOA Enterprise E-Procurement Solution (ERP Phase III)	5	$5,931,387.46
Children & Family Services		**$831,048.00**
DCF FSD Results Oriented Management (ROM) Reporting Tool	10	$831,048.00
Corrections		**$3,187,957.00**
DOC Cameras and Systems	10	$2,049,235.00
DOC Inmate Healthcare Services Project	5	$1,138,722.00
Disabilities, Aging and Independent Living		**$9,323,303.00**
DAIL DVR/ DBVI Case Management System	5	$9,323,303.00
Education		**$9,349,277.16**
AOE VADR (Longitudinal Data System (SLDS))	5	$5,638,927.16
AOE Vermont Child Nutrition System Modernization Project	20	$3,710,350.00
Enhanced 911 Board		**$11,664,260.00**
e911 Replacement	5	$11,664,260.00
Environmental Conservation		**$911,696.00**
ANR DEC Records Management System	5	$911,696.00
Finance & Management (AOA)		**$18,034,540.99**
AOA ERP Expansion	5	$18,034,540.99
Health		**$3,799,286.00**
VDH Starlims Lab Info System (Deployment and Automation)	10	$2,441,631.00
VDH VPMS Online Data System	5	$817,950.00
VDH Website Upgrade	5	$539,705.00
Health Access		**$546,161,836.66**
AHS HIE - Blueprint Clinical Registry	3	$2,758,712.21
AHS HIE - Patient Ping	1	$1,063,755.00
AHS HIE - VITL Development	7	$6,388,994.52
AHS Integrated Eligibility and Enrollment Program	5	$176,179,488.00
AHS Vermont Health Connect (VHC)	5	$302,305,422.00
DVHA MMIS - Care Management	5	$36,457,236.00
DVHA MMIS – PBM	6	$21,008,228.93

[1] Lifecycle costs equal the costs of implementing the project plus on-going maintenance and operating costs over the life of the solution.

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Active IT Activities (as reported to DII)	*Lifecycle Years*	*Total Lifecycle Costs*
Human Resources		**$956,300.00**
AOA Talent Acquisition Management System	5	$956,300.00
Information & Innovation		**$24,701,663.10**
DII Mainframe Outsourcing	5	$9,279,418.80
DII Office 365	4	$9,430,160.00
DII VoIP Implementation	7	$5,992,084.30
Labor Department		**$17,071,873.00**
DOL Worker Compensation Modernization	20	$1,596,530.00
VDOL Unemployment Insurance Modernization	20	$15,475,343.00
Libraries		**$2,316,136.00**
LIB Integrated Library and Resource Sharing System	5	$2,316,136.00
Liquor Control Department		**$11,361,740.00**
DLC POS & Central Office	10	$11,361,740.00
Mental Health		**$2,045,849.00**
DMH Vermont State Hospital Electronic Health Record (EHR)	7	$2,045,849.00
Public Safety		**$6,836,881.00**
DPS AFIS System Upgrade – MorphoTrak	10	$4,025,140.00
DPS e-Ticket project	10	$2,811,741.00
Public Service Department		**$3,523,632.00**
PSB Case Management (Sustain)	8	$3,523,632.00
Secretary of State		**$12,371,976.00**
SOS Corporations Registration	5	$2,202,224.00
SOS Elections Administration	10	$3,334,409.00
SOS Next Generation Licensing Platform	10	$6,835,343.00
State's Attorney's & Sheriffs		**$2,197,650.00**
SAS Criminal Case Management System	10	$2,197,650.00
Taxes		**$53,586,628.00**
TAX eCurrent Use	7	$791,038.00
TAX VTax	10	$52,795,590.00
Transportation		**$12,967,886.04**
AOT Advanced Transportation Mgmt. System (NH, VT & ME)/ 511 Phone System/CARS	20	$3,482,028.00
AOT Business Process Management System (BPMS)	20	$1,912,025.00
AOT Grants Management Solution Implementation (GHSP)	5	$744,255.00
AOT Statewide Property Parcel Mapping (Highway)	7	$3,370,828.04
AOT WebCrash	3	$850,750.00
DMV Cashiering System Implementation	5	$2,608,000.00
Grand Total		**$760,194,056.32**