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Appendix I: Examples of New Hampshire IT Accomplishments – (FY 2016-2017).

Please note that the list below is a sample of IT achievements during the last biennium (FY 2016-2017). The intent is to outline the types of projects occurring within NH to show their impacts on the states strategic IT vision. This list is not intended to be a full listing of the NH detailed project portfolio during this time period.

Accomplishments		
Project(s)	Accomplishment Description	Impacts
Windows 10 upgrades	Upgraded 5000+ desktop and laptop computer operating systems from Windows 7 to Windows 10 during Microsoft's "Free Upgrade" period (~5000+ systems upgraded)	<ul style="list-style-type: none"> • Cost savings • Improve productivity
Centralized licensing system	Provided major system upgrade for all agencies utilizing the centralized licensing solution	<ul style="list-style-type: none"> • Promote continuous improvement • Increase Enterprise alignment
Desktop and laptop replacement (where needed)	Upgraded aging machines across agencies (where needed/planned)	<ul style="list-style-type: none"> • Improve the state's security posture • Improve productivity
Telephone system upgrades and centralization	Upgraded phones and infrastructure within agencies.	<ul style="list-style-type: none"> • Increase Enterprise alignment • Promote standardization • Cost avoidance
Enhanced and expanded secure & remote access	Upgraded agency software and private network infrastructure and mobile device management via enhancements to promote flexible but secure access.	<ul style="list-style-type: none"> • Improve service to citizens • Strengthen security • Improved remote access functionality • Improved compatibility
Web application and Web site upgrades and management.	Upgraded and maintained agency web applications and backend servers across multiple state agencies. This includes hosting services and assisting agencies with 3 rd party hosting vendors.	<ul style="list-style-type: none"> • Improve service to citizens • Strengthen security
File sharing/transmission projects	Created and/or improved methods for sharing confidential and sensitive data for use by approved partners and authorities. This includes strengthening secure FTP and other file	<ul style="list-style-type: none"> • Improve service to citizens • Strengthen security

Accomplishments

Project(s)	Accomplishment Description	Impacts
	transmission/sharing mechanisms.	
Network upgrades and network consolidation	Worked with select agencies to increase network bandwidth and migrate to a centralized domain.	<ul style="list-style-type: none"> • Improve service to citizens • Improve network performance • Increase Enterprise alignment • Continuous Improvement • Improve the state's security posture • Cost avoidance/savings
Various software tool rollouts	Worked with many agencies to rollout standard and agency specific tools.	<ul style="list-style-type: none"> • Improve service to citizens • Improve productivity
Audit, compliance and certification support and management	Worked with multiple agencies to accommodate audit needs and requests and assisted agencies to maintain compliance and obtain certifications with various federal and state standards and programs (i.e. Plastic Card Industry (PCI), IRS (Pub1075) and many others, Medicaid systems certification, etc.)	<ul style="list-style-type: none"> • Improve service to citizens • Strengthen security posture • Continuous improvement • Support compliance and standardization • Comply with federal regulations
Strengthen security (file access and management)	Worked with many agencies to enhance security mechanisms on various file access capabilities across select agency file servers.	<ul style="list-style-type: none"> • Improve service to citizens • Strengthen security posture
Application upgrades/system replacements/major/minor enhancements This also includes assisting agencies with cloud solutions	Upgraded many application environments across agencies to improve application performance, functionality, efficiency and productivity. Also worked with agencies to assist/facilitate with cloud solutions (as needed)	<ul style="list-style-type: none"> • Improve service to citizens • Improve productivity • Improve project management • Promote continuous improvement
Document management and imaging system setup/support	Assisted agencies with document management and imaging system mechanisms and environmental setups.	<ul style="list-style-type: none"> • Improve service to citizens • Promote continuous improvement • Cost avoidance

Accomplishments

Project(s)	Accomplishment Description	Impacts
Virtual and physical server setups, management and consolidations	<p>Worked with agencies to move physical servers to a virtual server environment.</p> <p>Also, worked with agencies to setup physical servers where needed and consolidate and eliminate redundant servers.</p>	<ul style="list-style-type: none"> • Continuous improvement • Improve the state's security posture • Improve customer communications
<p>Audio/video conferencing</p> <p>Also assisted with video monitoring capabilities (i.e. traffic videos, etc.)</p>	Worked with select agencies to install/coordinate/maintain Audio/Video capabilities.	<ul style="list-style-type: none"> • Continuous improvement • Effective resource management • Cost avoidance/savings (travel reduction) • Increased manageability of security video which increased safety for NH citizens.
Forms integration project	In process FY 16/17: worked with multiple state agencies to implement electronic forms (using the nForms product) to move toward the goal of reducing paper forms	<ul style="list-style-type: none"> • Enhance citizen services • Continuous improvement • Elimination of paper forms, informed tracking for applications using workflow processes
Wireless setup	Worked with various agencies to implement wireless setup/access to reduce costs on wired setups and allow flexible and secure access to data	<ul style="list-style-type: none"> • Enhance citizen services • improved functionality for conference room presentations, outside vendors and contractors
Fax server replacement/upgrades	Worked with select agencies to implement Fax Server technology replacements where needed	<ul style="list-style-type: none"> • Strengthen security posture • Upgraded infrastructure
Database management and migrations	In process FY 16/17: Worked with agencies to migrate/manage databases	<ul style="list-style-type: none"> • Increased productivity • Potential cost savings
Management and updates of cell phone software and other mobile devices	Ongoing management of supported cell phones across State agencies as well as other mobile device management (installation of encryption software, etc.).	<ul style="list-style-type: none"> • Continuous improvement • Improve customer communications • Statewide Safety Initiative (hands free) • Strengthen security posture

Accomplishments

Project(s)	Accomplishment Description	Impacts
Data center redesign and cleanup	Redesign and cleanup of the 33 Hazen basement data center Obsolete cabling clutter was removed and a new cable management system was installed. Environmental monitoring was also installed.	<ul style="list-style-type: none"> • Continuous improvement
Disaster recovery	Worked with select agencies on disaster recovery site setup and planning	<ul style="list-style-type: none"> • Enhance citizen services • Continuous improvement
Office relocations and consolidations	Worked with various agencies as field or other offices were relocated and/or consolidated. Assisted with coordination and performed setups of needed applications and/or infrastructure as needed.	<ul style="list-style-type: none"> • Enhance citizen services • Continuous improvement • Cost avoidance/savings
Inventory management	Assisted agencies with inventory management on technical equipment	<ul style="list-style-type: none"> • Continuous improvement
Security training program	Coordinated and worked in partnership with HSEM (Homeland Security and Emergency Management) to promote a better understanding of Cybersecurity.	<ul style="list-style-type: none"> • Strengthen security posture • Employee development
Lean process evaluation	Worked with agencies to support “Lean” efforts to improve processes.	<ul style="list-style-type: none"> • Increased productivity • Potential cost savings • Continuous improvement
Email Consolidation	Consolidated the last executive branch agency onto the centralized email standard for the State.	<ul style="list-style-type: none"> • Enterprise alignment • Promote standards • Cost avoidance

Appendix II: Department of Information Technology Services

DoIT Technology Services		
Major category of Service	Minor category of Service	Description of Service
Administration	Audits	Participate in all audits related to IT to support agency partners.
Administration	Budget	Recommend hardware/software replacement cycles.
Administration	Incident Response	Provide support for agencies to manage critical incidents where technology and data are involved (storm, cybersecurity, or other incidents of this nature).
Administration	Litigation, Right-to-Know (RTK), Human Resource (HR) Requests	Central and cohesive response to Litigation Holds and Right To Know requests and general eDiscovery assistance.
Administration	Policies, Procedures and Standards	Develop, implement and maintain policies, procedures and standards to support executive branch agencies.
Advisory/Consultation	Agency Planning Support/Consulting	Assist with strategic planning related to technology and assist agencies to build the Agency Information technology Plan (AITP).
Advisory/Consultation	Agency Planning Support/Consulting	Provide consultation and advice to agencies for related IT initiatives.
Advisory/Consultation	Agency Planning Support/Consulting	Provide IT support on Agency committees such as Continuity of Operations Planning (COOP).
Advisory/Consultation	Agency Planning Support/Consulting	Participate in and advise in Agency logistical efforts: relocation or addition planning: providing DoIT resources (sub stations and DO's interior renovations and moves).
Advisory/Consultation	Budgeting and Procurement/Inventory	Support Software and hardware inventory management for DoIT managed equipment.
Advisory/Consultation	Budgeting and Procurement/Inventory	Monitor and provide guidance on agency IT related procurements.
Application Support	Ad-hoc reporting and Data requests/interfaces	Provide reports for data requests from citizens and agencies.
Application Support	Application development and Software Development Life-Cycle Support (SDLC)	Application development (provide leadership throughout the entire SDLC process)

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
	oversight	
Application Support	Code review and management	Safeguard state assets through source code repository management and ensuring vendors comply with state standards (where applicable)
Application Support	Legacy systems Maintenance and Development	Application Legacy application support and maintenance; enhancements
Awareness & Coordination	Integrate & cultivate cybersecurity awareness	Provide guidance, communication and coordination assistance on cybersecurity awareness by integrating security into operations and increasing awareness for current and emerging technologies.
Configuration Management	General content configuration management	Provide configuration management services through the use of various tools (web and other application related servers).
Configuration Management	File Integrity Monitoring	Provide Implementation, configuration and management of tools used to ensure changes made to supported applications have been authorized/approved.
Configuration Management	Reverse Proxy Server	Support the implementation, configuration and management of reverse proxy to retrieve resources for web-based applications.
Configuration Management	SSL Certificates	Support the implementation, configuration and management of HTTPS encryption technologies
Configuration Management	Web Server configuration	Support the Implementation, configuration and management of web servers.
Database Services	Oracle Database Hosting and Administration	Centrally manage Oracle databases associated with legacy and vendor applications. Services include Database design, security, system configuration, optimization tuning, implementation, maintenance, support, monitoring, troubleshooting, backup and recovery.
End-point Support	Enterprise Desktop Productivity Tools	Installation and configuration of enterprise PC software.
End-point Support	Onsite Maintenance and Support	Provide support by onsite technicians to resolve issues that cannot be resolved remotely (i.e. hardware issue, connectivity issue, preventative hardware maintenance, office moves)

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
End-point Support	PC/Peripheral Equipment Setup	Installation and configuration of PC equipment, mobile phones, printers, etc.
End-point Support	Remote Maintenance and Support	Provide support for issues that can be resolved remotely such as installation of software, troubleshooting and general customer assistance with IT questions.
End-point Support	Software Distribution	Manage tools and the process used to update agency PCs with critical patch updates to enhance software functionality, improve performance and strengthen security.
Enterprise Messaging	Email	Hosting and Management of Microsoft Exchange email services. Management of associated hardware purchases, physical setup, Operating System and application software installation and configuration, performance tuning and monitoring, patch management, service pack installations, integration with antivirus (McAfee)
Enterprise Messaging	Email Backup and Recovery	Secure backup and recovery services for mission critical data based on customer specified frequency and retention periods.
Enterprise Messaging	Mobile Messaging	Central management and encryption of mobile devices. This includes coordination of hardware purchase(s), physical setup, operating system and software installation and configuration, performance tuning and monitoring, patch management and service pack installations.
Enterprise Security and Monitoring	Antispam	Cloud-based protection against inbound malicious and junk email; internal appliances for same protection against outbound email
Enterprise Security and Monitoring	Antivirus	Centrally managed/distributed endpoint protection for Windows servers and workstations.
Enterprise Security and Monitoring	Endpoint Encryption	Centrally managed drive encryption for State laptops.
Enterprise Security and Monitoring	Patch Management	Centrally administered/distributed patching, software distribution and analysis, system reporting and inventory.
Enterprise Security and Monitoring	Web Security	Protection against malicious sites, malware, sandboxing of unknowns and Data Loss Protection.

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
Enterprise Services	Active Directory	Administration and security of State domain resources (user accounts, computers, files, groups, and printers) and group policies.
Enterprise Services	Domain Name System	Implementation, configuration, and Administration of DNS.
Enterprise Services	Dynamic Host Configuration Protocol (DHCP)	Implementation, configuration, and Administration of DHCP which allows devices to communicate on the state network.
Enterprise Services	File Storage	Hosting and Management of file storage on both virtual and physical servers located both at central data center and remote locations.
Enterprise Services	Network Printing	Implementation, configuration, and administration of Windows Network Printing including redundancy and printer backup and recovery.
Enterprise Solutions	Automated forms management	Implementation, configuration and management of a centralized forms management product (nForms), used as a method to automate the submission of data.
Enterprise Solutions	Identity Management	Implementation, configuration and management of central software used for authentication of users to state resources.
Enterprise Solutions	Learning Management Solution	Implementation, configuration and management of a centralized learning management environment, used as the statewide Learning Management System (LMS) solution.
Enterprise Solutions	Payment processing	Implementation and management of eCommerce solutions including hosted solutions and on premise middleware.
Enterprise Solutions	Professional licensing	Implementation, configuration and management of centralized software used for the licensure and certification of regulated professions and businesses.
Extended Support	Extended support services	Provide limited 7x24x365 support for critical infrastructure and systems
Financial Services	Account Receivable	Work with DoIT and agency personnel to track, identify and collect all outstanding accounts receivables.
Financial Services	Accounts Payable	Work with outside vendors and other state agencies to process payments in a timely and efficient manner while adhering to best practices.

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
Financial Services	Budgeting	Work with DoIT and agency personnel to identify the staff and financial resources required to support DoIT's mission throughout each biennium.
Financial Services	Cost Allocation-Budgeting	Manage allocation of DoIT's goods and services to a particular agency or agencies through the budgeting process.
Financial Services	Cost Allocation-Monthly Invoices	Manage the allocation of DoIT's goods and services to a particular agency or agencies through the invoicing process. Provide the detail necessary to support agency draw down on their fair share of grant, highway, and federal revenues.
Financial Services	Reporting and Analysis	Reporting and analysis of financial activities.
Help Desk	Agency Detail Reporting	Manage and deliver centralized reporting of Work Requests.
Help Desk	Centralized Contact Center	Management of Contact Center Ticket tracking solution.
Help Desk	Customer Satisfaction	Manage and deliver centralized reporting of customer satisfaction.
Help Desk	Disaster Recovery Plan	Maintenance and execution of DR plan for the enterprise helpdesk to validate downtime to SoNH is < 4 hours.
Hosting	Load Balancing Services	Hosting and Management of Load balancing servers/platform to manage application centric load balancing throughout the enterprise.
Hosting	Physical Servers	Hosting and Management of Unix, Linux, and Windows servers. This includes but is not limited to Hardware purchase(s), physical setup, operating system (OS) and application software setup/installation and configuration, performance tuning and monitoring, patch management, service pack installation and Anti-Virus management.
Hosting	Secure File Transfer	Management and Administration of software which allows for secure file transfer protocol (SFTP) connections to provide secure transmission of data.

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
Hosting	Server Virtualization	Hosting and Management of virtual Linux and Windows based servers. Application software setup/installation and configuration, performance tuning and monitoring, patch management, service pack installations and Anti-Virus.
Incident Response	Oversee security incident response(s)	Lead security incident response investigation, remediation and reporting; strengthen response capabilities through training and exercises.
Mainframe Services	Mainframe Services and Management	Manage z10, z13 and zLinux mainframe services for agencies requiring the use of these platforms. Services include consulting, application support, systems programming, transaction processing, storage, CICS, DB2, IDMS, performance management and tuning, security, and tape management.
Middleware Support	Citrix	Citrix Management for customers who have deployed Citrix and who have published applications in their Citrix environment (for remote access).
Middleware Support	WebSphere	Implementation, configuration, and Administration of the WebSphere set of tools to support agencies that require its use.
Network Communication	LAN (Local Area Network) Connectivity	Design, deployment, and management of LAN services enabling data communications among local resources, network switches, firewalls, routers, virtual local area networks (VLANs), and access control lists (ACLs).
Network Communication	MAN (Metropolitan Area Network) Connectivity	Management of state owned fiber and leased fiber infrastructure. Design, deployment and administration of connectivity between state offices in Concord and the state's data center (s).
Network Communication	Network Access Control (NAC)	Design, deployment and administration of controlled access to the State's network with policies that NAC uses to grant access.
Network Communication	Network Hardware and Device Replacement and Repair	Network Hardware requirements, installation, configuration, monitoring, and repair/replacement.
Network Communication	Remote Access (VPN)	Design and Administration of remote access for state agencies and their business partners via a virtual private network (VPN) client installed endpoint using customer's Internet access.

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
Network Communication	WAN (Wide Area Network) Connectivity	Management of vendor circuits (Carrier Ethernet, Multiprotocol label Switching (MPLS), Internet, Site-to-Site virtual private network (VPN) Tunnels) and other remote access methods for agency employees, vendors, and business partners.
Network Communication	Wireless	Design, deployment, and administration of wireless connectivity services for Guests and/or Staff of state agencies.
Other Support	Selected Technical Support	Oversee network infrastructure in smaller agencies
Other Support	Small Agency/Board Infrastructure Supports	Serve as first response for break/fix in certain agencies where teams are embedded (some leads are developing applications, racking switches, and providing desktop level assistance wherever possible
Policies, Procedures & Standards	Develop & maintain security standards	Develop and maintain policies, procedures and configuration standards; evaluation and selection of standard products and platforms; and manage exception requests.
Procurement	Budgeting and Procurement/Inventory	Oversee and manage the Class 027 budget: plan, implement procurements, receive and report.
Procurement	Inventory	Perform asset tracking in support of centrally managed functions (for all agencies).
Procurement	IT Contracting-Procurement of goods and/or services obtained through the Governor and Council (G&C) process	Work with DOIT and agency personnel to identify and procure needed IT goods or services processed through the Governor and Council process.
Procurement	IT Purchasing-Procurement of goods and/or services procured through Purchase and Property (P&P)	Work with DOIT and Agency personnel to identify and procure needed IT goods or services processed through the Department of Administrative Services (DAS) Purchase and Property (P&P) group.
Project Management	Agency Project Oversight	Oversee agency IT project management efforts: assist with analysis of feasibility, practicality, cost/benefit and implementation.
Project Management	Contract and RFP	Manage agency contract and request for proposal (RFP)

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
	Management	processes.
Project Management	Vendor Management	Vendor Management: provide support on first bids and contract clarification and negotiations to production support and renewals.
Risk Assessment & Management	Review cyber advisories & threats	Review threats and vulnerabilities, taking appropriate actions for response and information-sharing based on risk.
Security	Web application firewall management	Implementation, configuration and management of tools used to support web application firewall activities.
Security	Web application security	Provide and/or coordinate Code reviews, application security testing and performance testing of state applications to protect the state's information assets.
Security Monitoring, Analysis & Response	Manage core security platforms	Manage the core Intrusion Prevention System (IPS), Security Information and Event Management (SIEM), and Vulnerability Management (VM) platforms in support of policy enforcement and operational assurance.
Security Strategies & Planning	Develop cybersecurity strategies	Develop short and long term cybersecurity strategies to guide standards, procurements, resource prioritization, and budgets.
Security/Compliance	Awareness and Training	Support and partner with agencies to promote efforts for cybersecurity awareness and training.
Security/Compliance	PCI audit assistance	Assist with PCI awareness, training and audit preparation
Security/Compliance	Regulatory Oversight/Audits	Provide agency support for audits: assist in documentation; broker DoIT resources for reports and on-site visits. This includes promotion of awareness, training and audit preparation (for example: Plastic Card Industry (PCI compliance)).
Storage/Backup	Backup	Backup services to disk and tape for mission critical data provided at customer specified (frequency and retentions periods). Data is encrypted and sent offsite (once backed up).
Storage/Backup	Data restoration	Restoration of data/information that supports the business function.

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
Storage/Backup	Data storage	Purchase and Management of performance balanced tiers of secure and scalable storage. SAN fiber attached block storage, solid state flash storage, Isilon NAS (Network attached storage).
Telecommunications	Agency detail reporting	Centralized consolidation of Telephony Reporting.
Telecommunications	Cable provisioning and repair	Management and monitoring of pass through service to State Vendors.
Telecommunications	Centralized billing, accounts receivable and accounts payable	Centralized consolidation of telephone contractor billing, bill payment and agency billing.
Telecommunications	Data circuits	Centralized provisioning of data network circuits including point to point and switching services.
Telecommunications	Fiber cable provisioning and repair	Management and monitoring of pass through service to State Vendors.
Telecommunications	Help desk operations	Telephony related trouble tickets and service requests.
Telecommunications	Telephone service - Centrex and POTS (Plain old telephone service)	Provisioning of POTS in the form of legacy business lines and Central Exchange central office based full featured telephone service.
Telecommunications	Telephony Needs Planning and Assessment	Centralized consultation services for planning of future requirements and operations.
Telecommunications	VoIP (voice over internet protocol)	Design, deployment and support of centralized VoIP services. Core telephony, voice mail, audio, contact center and auto attendant functions.
Web Development	Web application development	Establishment of web application coding standards and development of enterprise and agency specific web applications.
Web Development	web content management	Administration, development and management of agency websites, blogs, and opt-in communications such as listserves, mailing lists and newsletter releases. Includes implementation of content management solution, template development, staff training and daily operational support.

DoIT Technology Services

Major category of Service	Minor category of Service	Description of Service
Web Development	web hosting services	Implementation, configuration and management of web hosting solutions to minimize the number of unique servers required to support state applications and web sites. This includes shared web hosting and a centrally managed SQL database.