State of Montana

Information Technology

Biennial Report for IT
2011

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This is the fifth State of Montana Biennial Report for Information Technology prepared under the authority of the Montana Information Technology Act of 2001. It is published biennially unless special interim plans become necessary.

STATE INFORMATION TECHNOLOGY SERVICES DIVISION
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State of Montana Biennial Report for Information Technology

FOREWORD

The Montana Information Technology Act (MITA) requires the Department of Administration (DOA) to prepare a report each biennium that assesses the state's progress in achieving the goals and initiatives outlined in the state's Information Technology Strategic Plan. MITA also requires the report to contain information regarding the state's information technology (IT) infrastructure including its value, condition, and capacity; an inventory of IT equipment, software, and services; and an evaluation of IT performance. This document is the fifth biennial IT report and measures our progress against the state's fourth IT strategic plan published in the spring of 2008.

The theme of this Biennial Report for Information Technology is "Leveraging Information Technology." The state's strategic plan is to use information technology to provide quality services to the citizens of the state of Montana while achieving cost savings through the adoption of Enterprise Architecture, server virtualization, data center consolidation, and the adoption of energy efficiency "green" technologies.

In setting the direction in the 2010 State of Montana Strategic Plan for Information Technology, Governor Brian Schweitzer stated: "Just as Montana families and small businesses have to make tough choices about finances in these difficult economic times, so does state government. We must meet the challenge of delivering state government services with less in the way of financial resources. The 2010 State of Montana Information Technology Strategic Plan is about achieving greater efficiencies by leveraging IT as a tool for delivering effective and efficient government services."

The plan places emphasis on achieving greater efficiencies through agencies' sharing, cooperating, and coordinating their IT activities and resources. The effect of this cooperation among agencies will be to minimize unnecessary duplication and achieve economies-of-scale. It also places emphasis on support and maintenance of existing IT resources in order to get longer effective life from these resources and gain cost savings.

The current state economic picture along with the governor's energy reduction initiative (20x10) underscores the need for state government to continually assess operations and evaluate opportunities to increase efficiency and reduce costs and energy consumption.

Our ability to meet Montana citizens' expectations of useful e-government and other time and labor saving services with reasonable investment and manageable risk is crucial to the success of state government during these tough times.

If you have any questions regarding the information in this report or the use of information technology within the State of Montana, please contact the State Information Technology Services Division (SITSD).

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Progress against the 2008 State Strategic Plan for IT

STRATEGIC PLAN GOAL 1: CREATE QUALITY JOBS AND A FAVORABLE BUSINESS CLIMATE

OBJECTIVE: EXPAND MONTANA'S SUMMITNET NETWORK

Accomplishment: The state's network supports more than 500 state offices, university campuses, and other political subdivisions in 145 communities throughout the state. Services regularly exceed available capacity, putting the network at risk of failure. Demand for new services such as video conferencing to reduce travel costs and energy use are putting more demand on network services. Some of these service requirements are for the purpose of reducing travel and energy costs.

The purpose of the Network Expansion Project is to upgrade bandwidth at offices throughout the state, upgrade the state's Internet portals, provide network management tools to better manage utilization and reliability, increase fiber capacity within the capitol complex, and establish a non-state security zone to separate users based on differing security policies and practices. To date more than 150 sites have been upgraded and migrated to the new Network (SummitNet III) and now take advantage of new capabilities it provides. The State Information Technology Services Division (SITSD) will continue to work with the telecommunications companies to improve the level of services at all sites throughout the state through the deployment of broadband services.

Cost savings realized as a part of this network migration are not always easy to calculate as they involve productivity metrics that are not readily available. Most of these savings are realized in ensuring that the network is reliable with little to no downtime for the end user, whether they are citizens or state employees. Over the next two years, SITSD will continue to implement new and enhanced network service technologies as appropriate and, where available, to realize additional cost savings and productivity gains.

STRATEGIC PLAN GOAL 2: DEVELOP IT RESOURCES IN AN ORGANIZED, DELIBERATIVE, AND COST-EFFECTIVE MANNER

OBJECTIVE: IMPLEMENT BEST PRACTICES

Accomplishment: The legislature provided funding in 2007 to build the state a primary data center in Helena and a backup data center in Miles City. The goals and objectives of the State of Montana Data Center (SMDC) and Miles City Data Center (MCDC) projects were to:

1) Construct two data centers to specifications outlined by the State Chief Information Officer.
2) Migrate all ITSD equipment and services located at ITSD's Mitchell Building data center to the SMDC by December 31, 2010.
3) Establish the migration plan for MCDC in November 2010.

Construction on MCDC was completed in January 2010. Construction on SMDC was completed in February 2010. The centralized IT services portion of the State ITSD began moving to the new Helena data center in late July 2010. By December 2010, all services will be moved to the new SMDC. In addition, a number of large agencies will be moving in the following years to the new data center and decommissioning their many smaller server locations. As part of the data center effort, there is a cross-agency collaborative team working on ROI

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business cases to assist agencies with virtualization and further server consolidation. The best-practices objective is to reduce risks that affect state services, energy, and other costs by reducing the number of agency data centers.

Accomplishment: The State Information Technology Services Division (SITSD) has instituted Information Technology Service Management (ITSM), which is a formal best-practices program to define an IT Service Management process framework to develop, deliver, and support quality services to our customers.

With the focus on the quality of IT (reliability, availability, security), it is important that an IT organization has documented, repeatable processes. SITSD's ITSM program uses Information Technology Infrastructure Library (ITIL) best practices to meet customer requirements. The program consists of individual initiatives around each process. Each initiative is managed like a small project. A Process Manager and cross-organization teams are identified and coordinate to develop a process that can be implemented and provide value to SITSD and our customers. Training and documentation are part of implementation. Metrics are collected and there will be continual process improvement.

SITSD will continue to develop new processes following the ITIL v3 framework. SITSD will continue to monitor and improve competed processes.

Accomplishment: SITSD's Procurement and Contract Management Bureau (PCMB) will implement Software Asset Management (SAM), which is a best-practice intended to optimize investments in software assets through processes, practices, and procedures that manage the life cycle of software. PCMB has developed an SITSD Policy and accompanying SITSD Procedure for purchase of software and license management. SITSD will fund internally. SAM activities, which incorporate Software License Management (SLM) processes, will be reported to the oversight groups at their regularly scheduled meetings. SITSD has established processes to review software contracts for compliance with contract terms and conditions. PCMB has regularly scheduled meetings with software owners to review all software agreements. SITSD has procured SLM software and is currently establishing processes to manage the software tool.

SITSD is currently developing an Enterprise SAM Program to implement software asset management best practices that will protect investment in software for services, lower the risk of unplanned costs, and enable cost savings across the state.

Accomplishment: The acquisition of a Software Asset Management (SAM) tool enables SITSD to ensure that SITSD is deploying and using software applications in compliance with license agreements and product use rights. Another major reason for managing software assets is cost control with accompanying cost savings. Identifying software application usage will help SITSD to determine which applications should be purchased, maintained, upgraded, reallocated, or retired.

SITSD purchased the Novell ZENWorks Configuration Management tool which includes the asset management module for software asset management. SITSD is currently inputting software data into the software asset management tool. Full production of the tool is targeted for October 2010.

Accomplishment: Agencies' IT plans must be reviewed and approved by the State CIO. The primary basis for evaluating agency information technology plans must be conformity to the state strategic information technology plan. New investments in information technology can be included in the governor's budget, only if the project is contained in the approved agency information technology plan.

The state consolidates all of the information technology appropriation into a single House Bill. Last biennium it was HB10. All business application systems funded under this bill must have a plan approved by the State CIO for the design, definition, creation, storage, and security of the data associated with the application system. The

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security aspects of the plan must address, but are not limited to, authentication and granting of system privileges and safeguards against unauthorized access to or disclosure of sensitive information. They must also be consistent with state records retention policies and contain plans for the removal of sensitive data from the system when it is no longer provides value. It is the intent of this subsection that specific consideration is given to the multitude of benefits that sharing of data has with other federal, state, and local agencies in the design, definition, creation, storage, and security of the data. Funds may not be released for the project until the State CIO and state's Office of Budget and Program Planning (OBPP) Budget Director approve the plans described above.

Accomplishment: SITSD has been interested in finding the most cost effective way of acquiring capital IT investments while preserving cash flow. While working with three qualifying leasing companies, SITSD has put together a Master Lease Agreement that can be modeled for all state agencies, universities, local governments, and tribal use. SITSD will continue to monitor leases and perfecting leasing procedures with vendors.

Accomplishment: The governor's Montana Accountability Partnership program identified cell phone and Blackberry use as one of the four cost savings measures that were finalists in the contest. In line with the governor's cost savings initiative, DOA/SITSD facilitated a review of state cellular telephone contracts and worked with agencies and both major cellular providers. The total cost savings in regards to removing the Blackberry server infrastructure and associated support charges is over $150,000.

Support costs and restrictions of proprietary Blackberry mobile email system had caused unnecessary expense and restricts agencies' ability to meet business needs of employees. As of November 2009, the state had 481 Blackberry mobile email devices in use.

SITSD conducted research on industry trends and third party software to see if a single standard connection method would work for all mobile devices. The answer for the state's email Microsoft Exchange email system is a protocol called "ActiveSync." This protocol can be used by **all** mobile devices to send and receive email and only requires the cellular provider's network and existing server infrastructure on the state network. SITSD, working with all state agencies, will have converted all mobile email devices to use ActiveSync as of November 13th 2010. The Blackberry Enterprise Server (BES) will also have been decommissioned as of this date. SITSD will continue to monitor the mobile device market and recommend devices that are fully compatible with ActiveSync.

Accomplishment: The Master Contract for IT Services, in its fifth year, continues to be enhanced with each yearly roster renewal. Optimization of the Tier I and Tier II processes is a constant focus of the state employees involved in its administration. Providing effective guidance and assistance to agency staff is recognized as key to maintaining a fair and consistent process which retains both contractor and state confidence in the Master Contract for IT Services as the engagement process of choice in meeting the IT service needs of the State of Montana. The state intends to renew this contract for a 6th year with the release of an RFP in the spring of 2011, providing the opportunity for new vendors to be added to the roster and allowing current vendors to add qualification in additional Service Categories.

Accomplishment: To fulfill its mission to improve and protect the health, well-being, and self-reliance of all Montanans, the Department of Public Health and Human Services (DPHHS) has made significant investments in information technology. DPHHS systems and the data collected and managed is critical to this mission. Responsibility for these systems lies within the Technology Services Division (TSD), which is charged with system development and maintenance, procurement, project management, data center, and telecommunications services. These IT services play a vital role in enabling DPHHS to succeed in its mission.

Accomplishment: The Department of Labor and Industry (DLI) Employment Relations Division (ERD) has improved operational efficiencies and collaboration by consolidating and centralizing production servers with

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the Enterprise. On the desktop, DLI has realized significant cost savings and management efficiencies by deploying thin client Virtual Desktop Infrastructure to appropriate staff.

In an effort reducing the need to resubmit information for DLI's Independent Contractor and Contractor Registration programs, DLI implemented digitization and storage of required documents in the Enterprise repository. This tactic was also used for Human Rights Investigations.

Accomplishment: The Department of Environmental Quality (DEQ) Revenue and Accounts Receivable Project (RAR) examined the collection and recording of fees being sent to the department as well as invoicing for those fees. DEQ designed and implemented an automated system that works with disparate systems across the department to automate the input of information into a standard invoicing system. There has been a reduction of staff time and errors, and increased revenue collected.

Accomplishment: The Department of Fish, Wildlife and Parks (FWP) is working on a Regulations system incorporating input of information into a database from the field biologists, game managers, supervisors, management, commissioners, and staff. The result is information that contains all of the as-is and to-be proposals for the regulations manuals used by outdoor enthusiasts.

Accomplishment: FWP is working on partnerships with DPHHS and DOJ. FWP is working with DPHHS on integrating the death registry to FWP's Automated Licensing System (ALS) to mitigate fraudulent licensing activities. With DOJ, FWP is revising their interfaces with the DOJ Motor Vehicle Division for issuance and administration of boat decals.

OBJECTIVE: IMPLEMENT NEW TECHNOLOGIES

Accomplishment: SITSD is aggressively planning for the use of cloud services by the state. Because of the uncertain realm of both federal and state regulations in regards to data security, SITSD is working to be a private cloud provider of choice for state agencies. SITSD is also planning for use of the public cloud for services that do not have stringent data security requirements or service levels. SITSD is also looking to the public cloud for just-in-time delivery of expansion capability for high load times like tax season and elections.

Accomplishment: At the Department of Commerce, the Montana Promotion Division has been pursuing a multi-year project to convert the tourism web application from .asp to .Net and it is proceeding as planned. The division closely monitors the new emerging technologies in use in the tourism and web marketing industry segment. A project is currently underway to make the tourism web sites available to the mobile device market – the most rapidly growing segment of our using public. A capability to dynamically provide a map to known tourist destinations was implemented last year. A management tool for the large library of digital assets is planned. The division also performed a system audit early in calendar year 2010. Based upon these recommendations a number of objectives related to upgrade or replacement of systems for the Promotion Division have been canceled or delayed as final decisions and plans are made to seek alternative solutions potentially from hosting vendors, software as a service, or 'cloud' type providers.

Accomplishment: Most users now have the ability to conduct distance and on-line training from their desktop computers. Room 132 in the Mitchell building has been updated with technology that will allow for large groups to conduct distance and online learning and equipment (laptop, projector, and polycom phone) is available for use in rooms without permanent equipment.

Accomplishment: The Montana Department of Revenue (DOR) is working to increase use of direct electronic filing to ensure more timely tax processing for refunds. Included is partnership with the IRS on Joint Federal / State electronic filing for individual and business taxpayers. With the move toward more electronic filing, the past tax processing season was completed in record time compared to previous years.

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Accomplishment: Technologically, the state is looking at ways to do more with less. Many of the agencies are looking to expand use of virtual services, simplification of the agency network architecture, and improved bandwidth for remote offices to improve efficiencies at a low cost per user.

Accomplishment: SITSD has been aggressively using server virtualization since 2002 and is currently 78% virtualized. SITSD has a goal of being 85% virtualized by July 1, 2011. Virtualization and moving to blade server technology has been a huge cost savings for the State. SITSD estimates that since 2005, virtualization alone has saved over $4.8 million in administration, hardware, and energy costs.

Accomplishment: The Department of Health and Human Services (DPHHS) has also begun a significant effort to virtualize its server environment. Upgrading and enhancing DPHHS server infrastructure is necessary for increasing efficiency, decreasing cost, ensuring availability, and supporting DPHHS business functions. Using virtual servers and workstations has allowed DPHHS to consolidate its hardware by running many virtual machines to run on one physical computer. DPHHS currently utilizes thirty-two virtual servers, which run on six physical servers. Significant savings resulted from not having to purchase twenty-six physical servers and the reduced power consumption. DPHHS also implemented thirty-six virtual desktops, which are primarily utilized by telecommuters.

Accomplishment: FWP, to lower cost while still providing quality solutions to its customers, has embraced open source solutions. These solutions include database, web server, content management, and mid-tier. Doing so has allowed FWP to keep its technology budget nearly unchanged.

Accomplishment: The Department of Labor and Industry (DLI) has replaced aged, public facing and internal systems that were built using proprietary software tools with open source based tools and technologies. One of the systems replaced was the result of legislative mandate to report Subsequent Injury Fund enrollment of injured individuals to Insurance Carriers when the system detected that such an individual had been injured again.

DLI has also started a project to create multi-dimensional cubes of accumulated Workers Compensation data in order to better identify trends, allow business managers to perform ad-hoc analysis and reporting, and to obviate the need for IT support for these activities.

Accomplishment: In order to fully implement Financial Transparency Model (FTM), SITSD's applications bureau has developed a new web-based budget planning tool for agencies to accurately estimate and report their IT plans, utilization, and projects for the upcoming biennium. In this tool, the agencies are required to plan exactly what and how much of each service that they will be requiring from SITSD. Based on the information entered, the tool will report exactly the amount of budget that is required to purchase this service. This tool will also integrate and compare agencies' FTM budget with SITSD's billing systems so they can monitor and track their IT budget with actual invoiced expenditures.

Accomplishment: DEQ is using SharePoint to help track IT purchases. Using forms put up in SharePoint allows department staff to submit requests for approval to purchase IT related items.

Accomplishment: In the last biennium, DPHHS embarked on an initiative to implement collaboration department-wide, including all eleven divisions that have offices and facilities across the state. This collaboration is currently being supported by the use of tools that assist 3,100 employees located statewide communicate more regularly and more effectively without traveling long distances. Implementing collaboration tools internally to support the operation has increased efficiency, decreased staff travel time, increased ability to outreach/train, and decreased costs. Internal implementation includes going beyond employee-based to include contractors and other partners. In the first year of implementation alone, DPHHS estimates that it has saved

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over $100,000. DEQ and FWP are also utilizing video conferencing to reduce the travel required of staff around the state.

Accomplishment: Software licensing compliance is another area that FWP tackled. FWP utilizes software to report in real-time their installed software. An extension of this system allows FWP to extend its technical support to areas that would have normally required travel.

Accomplishment: FWP is utilizing data analytics to capture usefulness of their web presence. In addition, they are looking to add metrics to their internal applications to spot peak and low processing periods and other areas that could be improved.

OBJECTIVE: PROVIDE STABLE FUNDING

Accomplishment: In the 2007 legislative session, SITSD promised the appropriations subcommittee that it would look into being able to describe and justify the rates and rate methodology. SITSD adopted and implemented the Financial Transparency Model (FTM) to describe and justify the rates for the FY12/13 biennium. Planning for this transition was a collaborative effort with input and direction from the Office of Budget and Program Planning. Doing so has allowed for better documentation and justification of rates for the legislature, Office of Budget and Program Planning, and the agencies. In addition, FTM has provided better information for decision making, increased definition of products and services, and provided a foundation for agencies to plan for their IT needs. Through the process, SITSD has defined over 260 services, each with an accurate cost based on allocated costs, staff time, and estimated units of service provided to each agency. In the future, SITSD will continue to mature model through the implementation of metrics while keeping an eye to gathering the most accurate and up to date utilization and costs for input into the model.

Accomplishment: After much discussion and consideration, the State of Montana decided to continue to utilize the self-funded portal model as a revenue stream in providing citizens and businesses online government services. The state also decided to continue to outsource this function. Montana first engaged in this model through a contract in 2001. That contract can no longer be extended past December 2010. The solicitation for a new contract is currently in progress.

OBJECTIVE: IMPLEMENT WORKFORCE DEVELOPMENT

Accomplishment: Initiatives and projects in development include employee engagement surveys in SITSD and the State Human Resources Division. These surveys focused on newly hired employees and their managers in the Department of Administration to determine strength and weaknesses in our hiring and selection processes, and training programs focused on issues identified in the SITSD engagement survey. Once the data from the new hire surveys is available, the talent management team will make recommendations to the director of the Department of Administration on improving hiring processes to facilitate hiring the right people for the right job.

The State Human Resources Division has completed the initial phase of a revised performance management system based on measures of progress toward the division's state goals and objectives. The division completed the evaluation of that initial phase in August of 2010 and phase two began in September. SITSD will implement a similar tool in the fall of 2010.

The State Workforce Planning task force has formed several subcommittees to evaluate aspects of workforce development, including hiring and selection and performance management. The task force will make statewide recommendations once it completes its work.

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STRATEGIC PLAN GOAL 3: IMPROVE THE QUALITY OF LIFE OF MONTANA CITIZENS

OBJECTIVE: IMPROVE PUBLIC SAFETY COMMUNICATIONS

Accomplishment: Interoperable public safety communications is a significant concern in Montana, across the United States and Canada. Incidents such as the 9-11 attacks, major hurricanes, and other natural and manmade emergencies highlight this fact. Interoperable communications is a local, state, federal and international priority.

Montana is investing in the Interoperability Montana Project to ensure reliable communications during emergencies. This outcome ensures the protection of citizens and local, state, tribal, federal, and international resources. Montana's location as a northern border state gives it a unique mission regarding public safety.

Nine consortia in the state represent counties and tribal nations. More than 2,500 users have converted to the new communications system. Completion of the system will bring numerous voice and data opportunities for public safety across Montana. Through a Memorandum of Understanding, State Information Technology Services Division (SITSD) staff provides technical and administrative support for frequency management, public relations, and consortia support as needed. In addition, SITSD assists with administrative and installation support, funding partnership analysis, federal grant oversight, and spectrum resource partnership administration. To date, more than $60 million has been invested by local, state, tribal and federal funds. The IM Project will continue build-out of regional systems funded in the 2007 and 2009 Legislative sessions and multiple federal grants in support of communications interoperability. The IM Project intends to continue to add public safety agencies to the IM System in the following consortia: Central Montana, I-15/90 Corridor, Eastern Tier, Northern Tier, South-Central Montana and Tri-County.

The IM Project is asking for a legislative resolution requesting an interim legislative study committee (LC090) to study and develop funding recommendations to complete the deployment and on-going operations of a statewide public safety communications system. SITSD encourages support of LC090.

Accomplishment: Corrections, Montana Department of Justice (DOJ), and the Montana Office of the Court Administrator (OCA) have implemented a process of sharing of data with each other, counties, and other states via an Integrated Justice Information System (IJIS) broker. The most recent additions have been sharing of data for crime victim notification, correctional status queries, drivers' licenses, and correctional photos. Montana was the third state to implement Corrections photo sharing with law enforcement throughout the country. Now a police officer in another state can send a query through the justice network regarding an offender in the correctional system and have the most current photo of that offender available within seconds.

Using IJIS, registered victims of an offender can obtain notifications when qualifying events occur in the participating counties and state correctional system. The IJIS Institute has requested federal funding to partner with Montana to utilize the crime victim notification data sharing model to create a national standard for crime victim data exchange based on the Federal National Information Exchange Model.

Accomplishment: The State of Montana is also working on implementing a statewide Emergency Notification Service. Implementation of emergency notification services on a county or Public Safety Answer Point (PSAP) basis creates complications because emergencies seldom follow county or PSAP boundaries, thereby creating problems when alerting cross-jurisdictional communities to potential dangers. The solution is a statewide system.

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The state, acting on behalf of individual PSAPs, included Emergency Notification Service in the procurement process for statewide 9-1-1 services. As a result, all local jurisdictions have access to a statewide Emergency Notification Service transcending telecommunication company or jurisdictional boundaries.

The deployment of a statewide Emergency Notification Service met the objectives significantly reducing costs for individual PSAPs throughout the State. In addition, the deployment and training timeframe was drastically reduced by use of a single service rather than individual deployments. The consolidated service solution also increases accuracy of the data, including all published and non-published numbers.
http://pssb.mt.gov/content/docs/montana_911_status_map_041310.jpg

Accomplishment: The Montana Department of Corrections was one of the founders of a shared-source comprehensive offender management information system, which allows other states to obtain the source code and implement the system at no cost. There are fourteen member states, including six with the system fully or nearly implemented and another two states planning for implementation. The implementation of this system has allowed for increased access, higher accuracy, and the ability to collect more data. This allows key decision makers to have more information that is relevant.

STRATEGIC PLAN GOAL 4: PROTECT INDIVIDUAL PRIVACY AND THE PRIVACY OF INFORMATION CONTAINED WITHIN IT SYSTEMS

OBJECTIVE: IMPROVE ENTERPRISE SECURITY AND IDENTITY MANAGEMENT

Accomplishment: The State CIO assigned FTE resources to drafting security-related policies and standards. The assigned personnel selected the Federal Information Security Management Act and the National Institute of Standards and Technology security framework and guidance (i.e., FISMA/NIST framework) as the basis for information system-related security policies and standards (i.e., policy instruments).

In February 2009, the CIO published the Statewide Policy: Essential Information Security Roles. This policy establishes the requirements to implement a computer security program based upon National Institute of Standards and Technology (NIST) guidance, using the NIST risk management framework. Specifically in this instance adoption of essential information security roles and responsibilities necessary to design, develop, implement, and maintain an Agency Information Security Program as required under 2-15-114.

In March 2010, the CIO published the Statewide Policy: Information Security Programs. This policy establishes the requirement to implement Information Security Programs processes and actions within agencies. The two primary requirements in this flagship policy are: 1. Each agency will implement their information security program as required in 2-15-114, MCA according to FISMA/NIST standards and, 2. All security controls implemented in the program are to be in accordance with the FISMA/NIST standard.

Accomplishment: The State of Montana has formulated a strategic plan for development and implementation of a Statewide Information Risk Management Program (IRMP). The statewide scope encompasses thirty-six Executive Branch agencies, with voluntary participation from the Legislative Branch, Judicial Branch, and the University System. The IRMP is a federated approach, which adheres to the Federal Information Security Management Act (FISMA) and National Institute of Standards and Technology (NIST) as its standard of performance.

State statute requires all Executive Branch agencies to, "…designate an Information Security Manager (ISM) to administer the department's program for data security." To enhance collaboration and information sharing, the State CIO created an ISM Group (ISMG) comprised of agency ISM's. They make recommendations concerning

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information security and provide program status updates to the State CIO. Currently, limited resources are available for the IRMP. Agency business requirements will determine actual investment necessary for implementation. It may take five to six budgetary cycles (ten-twelve years) to implement the IRMP.

To date, the IRMP has published "Statewide Policy: Information Security Programs" requiring agency programs to implement FISMA/NIST standards. The state has trained 70% of executive leadership and senior managers on FISMA/NIST, emphasizing compliance with federal requirements, where applicable. The state is reviewing information security policies for alignment to standards. A third of state agencies have filed formal designations of ISM's. Half of the state agencies are developing program plans required by policy, as evidenced in Agency IT Strategic Plans. The ISMG is developing formal procedures for negotiating and including information security requirements in inter-agency service level agreements and system inter-connection agreements, per standard.

The state received positive affirmation recently of the IRMP strategy, with satisfactory completion of an IRS audit. The state is transforming from an ad-hoc IT Security function to a standards based, Information Risk Management approach, focused on enabling agency missions. This paradigm shift is critical if agencies are to achieve their missions effectively in the future.

Accomplishment: SITSD sanitizes all of its electronic devices prior to disposing of them. If a device is not operational, SITSD will remove and degauss (sanitize) the hard drive. Any equipment that is still usable will either be re-purposed within the Department, donated to the OPI School Computer Equipment Program, or donated to the DOA Property and Supply Bureau Surplus Equipment Program. The School Computer Equipment Program currently accepts all P4 computers, P3 laptops, printers, and peripherals. As a general rule, it does not accept CRT computer monitors.

Equipment that is no longer functional or is not accepted by the School Computer Equipment Program or the Property and Supply Bureau Surplus Equipment Program, will be recycled. SITSD is currently recycling products in Helena at Pacific Steel and Recycling and with Tatooine Electronic Systems, based out of Billings. Tatooine currently charges 30¢ per pound to recycle equipment. Pacific Steel and Recycling will not accept CRT monitors. Tatooine will accept all equipment.

Each agency is responsible for sanitizing and disposing the personal computers and electronic equipment for their agency. Each agency may use a different process to dispose of equipment as long as it meets the requirements of the policy ENT-SEC-141 – Disposal of Computers.

DEQ is currently developing a recycling program for the State of Montana. More information on recycling electronics is available on the DEQ website at: www.recycle.mt.gov.

STRATEGIC PLAN GOAL 5: IMPROVE GOVERNMENT SERVICES

OBJECTIVE: EXPAND EGOVERNMENT SERVICES

Accomplishment: The State of Montana now has over 200 eGovernment services for its citizens and businesses. The state continues to have a strategy of enabling growth in this area using revenue from convenience fees on 30% of the services found on mt.gov. Some of the many eGovernment services can be found at http://mt.gov/services. The direction for the next few years in online services is to provide more mobile based applications. The first mobile application, a Driver's Exam service, is going to be launching for the Apple platform in July.

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Accomplishment: The Department of Labor and Industries (DLI) Business Standards Division has utilized online permit application for the last two years resulting in a dramatic shift from mail or walk-in applications to online applications which has resulted in greater customer satisfaction and permit accuracy.

Accomplishment: DNRC continues migrating business processes from paper to web or desktop applications. This process eliminates much of the paperwork associated with permitting, tracking, and administration of state lands, waters and other resources. Improvements are under way with Trust Lands Management System (TLMS), Hazard Reduction Agreements, and other systems used by staff across the state.

Accomplishment: Vehicle Registration Renewal is a fairly new service allowing citizens to renew their vehicle tags online. The adoption rate has been very high for this service.

Accomplishment: ITSD is currently in negotiations with Montana Interactive for the new eGovernment Services contract. The RFP development and evaluation team had representation from the Secretary of State's Office, Department of Livestock, Department of Justice, Fish, Wildlife and Parks, Department of Administration, Department of Revenue and the Governor's Office.

Accomplishment: The DLI Unemployment Insurance Division (UI) has seen tremendous challenges in the last two years in providing Unemployment Insurance customers with the tools to file their claims and to receive benefits in a timely manner. Starting with the Federal Extended Unemployment Compensation 2008 (EUC08) and continuing through all four tiers of EUC, plus triggering the Extended Benefits (EB) twice, the software programming and business processes changed considerably. Due to the flexible nature of an Oracle-based benefits system and the use of the Internet to provide claimant services http://ui4u.mt.gov, DLI was able to rapidly develop and implement the changes to enable customers to file for and receive EUC08 and EB payments. Claims filing and payments nearly tripled, yet the agency continues to receive and process claims for payments without tripling staff. The key to receiving these claims has been an Internet presence with UI4U. Nearly 88% of all claims are taken via the Internet. Without UI4U, customers would encounter hours upon hours of busy signals if they had tried to contact the agency via the traditional telephone method.

Accomplishment: For DLI BSD, the main priority has always been customer satisfaction. Implementation of the Licensing Standard and One-Stop ePermit systems will result in a much more customer friendly approach to doing business with DLI. For example, customers will be able to purchase building permits or apply for licenses at their convenience, track the progress of their inspection process online, respond to inquiries concerning document submission required for licensure online, etc. In short, DLI will provide the services when the customer needs them.

Accomplishment: DNRC continues migrating business processes from paper to web or desktop applications. This process eliminates much of the paperwork associated with permitting, tracking, and administration of state lands, waters and other resources. Improvements are under way with Trust Lands Management System (TLMS), Hazard Reduction Agreements, and other systems used by staff across the state.

Accomplishment: FWP is also working on an application to document activities associated with endangered species. The result is a web application that meets the federal reporting requirements and can be used by both FWP and the US Forest Service.

Accomplishment: Montana has a common eCalendar service (https://app.mt.gov/cal/html/event?eventCollectionCode=statewide) that is used by almost all agencies to notify the public of public meetings and events. The events of the day are fed from that service onto the home page of mt.gov under the "Events" section. If a citizen wants further information, they can select the event and all of the details are provided.

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Accomplishment: Counties in Montana have collaborated on a County Burn Permit service. The service issues burn permits and allows the public to see where the permits are and when they are being activated. The service has been implemented in both Lewis and Clark and Gallatin counties, and over 8,000 calls have been diverted from the county dispatch and fire stations due to the County Burn Permit service and automated phone systems.

Accomplishment: The Board of Public Education implemented an electronic submission of agenda requests through Montana Interactive, LLC. This service allows members of the public to submit a request for agenda items to the Board of Public Education for upcoming meetings. The service integrates a File Transfer Service to allow customers to send accompanying documents to the BPE staff.

OBJECTIVE: EXPAND GEOGRAPHIC INFORMATION TECHNOLOGY SERVICES

Accomplishment: In 2009, the DOA and the Montana Land Information Advisory Council (MLIAC) sponsored a study to determine the "value" of GIS base map information to Montana. The study found that the Cadastral ROI to the Montana economy is over $9,000,000 per year (11:1 per year return). Almost 2/3 of the consumption is by the general public and the private sector, while 1/3 is by government agencies.

Consumers represent a wide spectrum of the Montana economy, including the general public, realtors, financial institutions, pipeline developers, consultants, local government, tribes, the State and Federal governments, etc. The study found that most consumers do not simply use cadastral data, but combine it with roads, imagery, structures and other critical base map information to determine relative proximity to other natural and man-made features. Many economically important decisions are, in part, made using this base map information. The majority of the funding for on-going maintenance and delivery of the Cadastral and other base map data is from grants. The funding model does not match the growing dependence on this data within the Montana economy. SITSD is taking action to communicate the study results to various decision-makers.

Accomplishment: The Montana Department of Natural Resources (DNRC) has restructured IT operations to put more emphasis on GIS. There is a demand for more spatial information connected to the activities of state government. Two examples of the application of this technology are geographic information, showing where ARRA funds are being used and a new state restoration website www.restoration.mt.gov, showing where restoration projects are and the value of those projects. This is a cross agency effort involving data from Montana Fish Wildlife and Parks (FWP), Montana Department of Transportation (MDT), Montana Department of Environmental Quality (DEQ), and other state agencies.

Accomplishment: At the Montana State Library, the Montana GIS Portal initiative is substantially completed. The Portal was released in September 2008. This release used ESRI Portal Toolkit 3.1 software. On October 1, 2009, MSL released a significant upgrade to the GIS Portal using ESRI Portal Toolkit 9.3. The new Digital Atlas, which will eventually replace the current Digital Atlas, Data Bundler and Topofinder applications, is currently in development and substantial components of the application are complete. Initial testing is planned for the fall of 2010 with the launch of the new Digital Atlas planned for late 2010 or early 2011.

Accomplishment: At the Department of Commerce, the Business Resources Division has been working on the development of a greatly improved web based application for the distribution of 2010 Census data. The site incorporates new technologies emerging from the Geographical Information System (GIS) segment which will greatly enhance their ability to communicate and share information from the 2010 Census with the many users and partners needing this data. The Small Business Development Center continues to use the WebCats software subscription services in support of its mission and partner network and has implemented new features that continue to improve efficiency in reporting to the Small Business Administration and the stakeholders.

Accomplishment: Boundaries define the rights and interests on the land. Ensuring that boundaries, especially boundaries for any government sanctioned entity (e.g., Water & Sewer District), are correctly recorded and

Coordinating Draft

drawn is essential. SITSD supported the Education and Local Government (ELG) Legislative sub-committee that drafted proposed changes. LC9208 (Uniform Act) and LC9209 (Housekeeping) were both submitted to and indorsed by the ELG. The legislation passed and was signed by the Governor during the 2009 session.

OBJECTIVE: EXPAND BUSINESS CONTINUITY AND DISASTER RECOVERY PLANNING

Accomplishment: The Security and Continuity Services (SCS) Office has been created in DOA/ITSD to provide centralized management and coordination of continuity planning for state agencies to insure the ability to recover State Essential Functions of government at the time of event. SCS staff has established and manages the continuity planning program for Montana state government. State Essential Functions (SEFs) have been identified for the state and all services and processes are being ranked for critical priority against them. Continuity planning activity is underway with the state agencies. SCS will support continuity planning in the state agencies. Continuity planning policies, standards and procedures (including information technology disaster recovery planning policy) will be completed for the state in 2011.

Accomplishment: In recognition of potential cost savings by consolidating data centers, the State recently built two new state of the art data centers The other data center is located over 350 miles away in Miles City, and will serve as a backup/disaster recovery site. Backup and recovery of essential government services is essential in providing for business continuity.

Accomplishment: In January 2009, SITSD secured the lease of an additional 5,810 square feet of office space at the Minneapolis - Federal Reserve Bank (MPLS – FRB) for the purpose of relocating the principle portion of its Enterprise Operations group (approximately 40 people) into a common office facility. In July 2009, SITSD secured the lease of an additional 1265 square feet of computer room raised floor space for the purpose of relocating the media in its legacy Archive Tape Vault. The MPLS FRB space met the environmental requirements to maintain readable tape media in the archive vault as well as an opportunity for agencies to co-locate equipment in the same secure facility for disaster recovery purposes.

The facility offers the opportunity to easily implement an emergency data repository for the state's new State of Montana Data Centers (SMDC) located in Helena. Instead of merely serving as a disaster recovery tape vault, it provides agencies of the state the ability to co-locate other storage appliances in the same location and optimize their use by computing devices in both eastern and western SMDC's. This approach to continuity of operations could represent a substantial cost savings of existing disaster recovery contracts for these services, and greatly improve our ability to provide near continuous operations. SITSD has offered co-location services in its catalog for both space within a provided rack and space for the placement of a complete rack at the MPLS FRB facility. SITSD looks forward to working with its agency partners in making this a viable and much needed IT service.

Since relocating all tape operations to the remote facility at MPLS FRB, SITSD has realized a substantial reduction in tape media failure. This improvement (over 60%) has brought SITSD's tape media performance in line with industry averages, and has mitigated the costs of computer reruns, failed tape cartridges, and vendor services for more aggressive preventative maintenance measures.

Coordinating Draft

Status of the Information Technology Infrastructure

INFRASTRUCTURE

The state IT enterprise maintains a web-based application that allows agencies to input data relative to the status of their IT inventory. Agencies are required to maintain current information in the database, making entries as changes occur and performing annual updates as requested by SITSD. The following section of this report reflects an analysis of that data as reported by the agencies. More detailed information can be obtained by contacting SITSD.

DATA CENTERS

There were 283 sites reported this biennium (down from 293 sites last biennium) housing 1,135 physical servers, which store and run the state's software applications. Due to their critical nature, data centers are typically designed to have special environmental protections in place. The typical protections are:

- HVAC (heating, ventilation, air-conditioning)
- Fire Suppression system
- Conditioned power source the eliminates voltage drops and peaks
- Battery backup for power during temporary outages
- Local/Controlled access
- Generators for alternate power source over extended periods

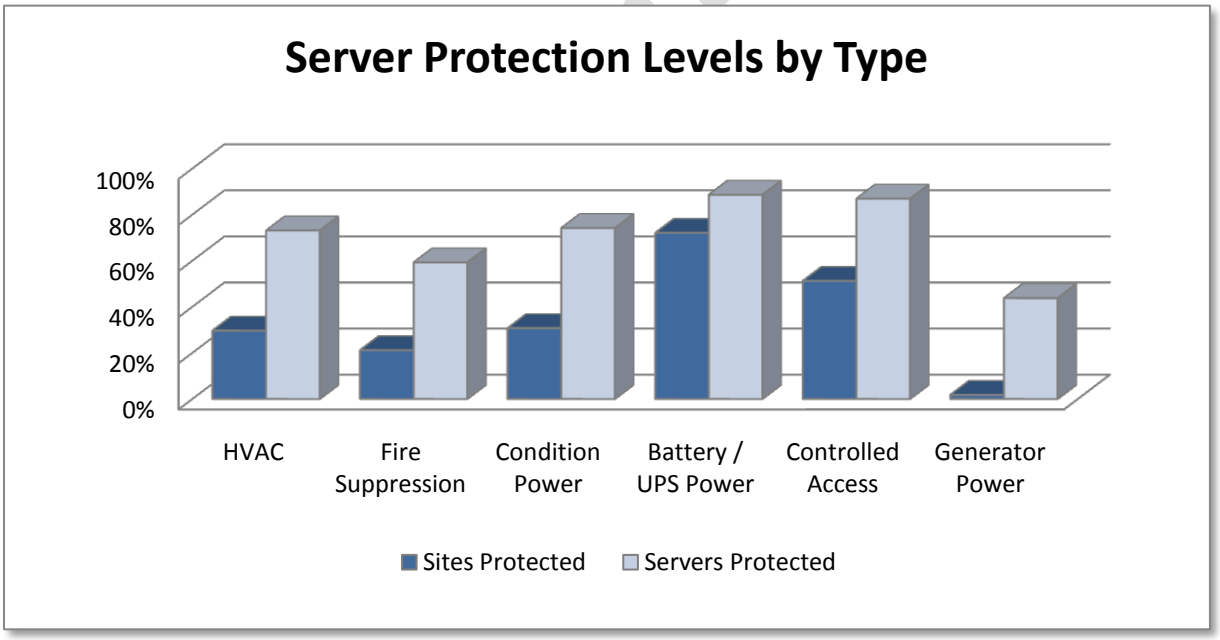

Figure 1 - Server Protection Levels

There appears to be great disparity among the levels of protection installed for the state's many data center sites. The larger data centers typically have most of the standard protective systems listed above; however, many of the smaller data centers have few or none of the critical protective systems in place.

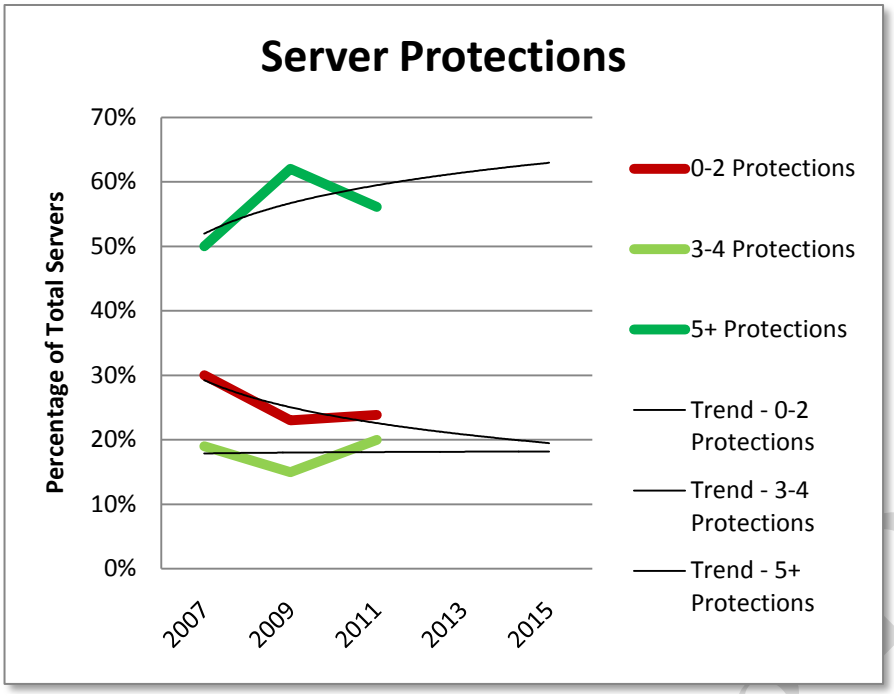

Figure 2 - Server Protections

While only four sites that have all six levels of protection (the new State of Montana Data Centers (SMDC), Department of Justice at Fort Harrison, Montana Department of Transportation, and Montana State Fund), 443 or 39% of the state's physical servers are located at those four locations, 783 or 69% of the state's servers are located in sites with four or more levels of protection. A total of 51 or 4% of servers are in isolated locations that have one or no levels of protection. The continued trend over the next few years shows a decrease in servers and sites that have up to two levels of protection, with an increase to more than three levels of protection. The higher the level of protections, the less risk there is to an incident having an impact on continued services for the state.

SERVERS

By definition, a server is a multi-user computer that provides a specific type of service to client software running on other computers – usually PCs. For the purpose of this document, the term server refers to a physical or virtual computer on which server software is running. A single server may have many applications running on it; therefore, the server may provide many different services to many different users on the network. Servers in this report include everything from a large mainframe down through mid-tier size servers and included large desktop computers, if they are operating as a server.

The state has 1,135 physical servers, a decrease of 99 during the last biennium, in operation housing more than 1,739 physical or virtual servers. This is an increase of 112 servers. With appropriate hardware and software, dozens of virtual servers may reside on a single physical server. Running multiple virtual servers on a single physical server decreases infrastructure costs, reduces carbon emissions, increases efficiency, performance, and flexibility, and has a lower total cost of ownership.

By using server virtualization, users are unaware that they are not running on a dedicated server. ITSD, DOJ, and STF are some of the agencies that use this technique to reduce the number of servers, simplify management, and minimize costs.

There are 75 servers (not including the majority of ITSDs servers) that utilize Storage Area Networks (SAN) for the purpose of backing up and storing large amounts of critical data. There are twelve agencies that currently employ SANs: COR, DEQ, DLI, DOC, FWP, GOV, ITSD, LEG, MSL, OPI, SOS, and STF.

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Operating Systems

The Operating System (OS) provides the foundation for the other application software running on the server. Windows is the predominate server OS within the enterprise landscape. There are seven major differentiating OSs currently in use throughout the state. This diversity contributes to the complexity associated with providing support and planning future growth strategies while maintaining the enterprise infrastructure.

Recently, the Novell Netware product changed directions and is now based on a Linux foundation. With this change and additional costs associated with licensing of multiple products that provide the same services, it was determined that the state would move toward file and print sharing on Windows based servers. Therefore, the trend for Netware is decreasing and should be 8% or less by 2015, although the trend is expected to accelerate.

The Windows OS trend is also decreasing, but only because the servers analyzed here are physical and not virtual. There is an increasing trend in Windows and AIX OS on virtualized platforms. One of the foundation OS's for running virtualized servers is VMWare's ESX product, which has increased from just 2% in 2007 to almost 8% of the total physical server OS by 2015. With more benefits of a virtualized environment, we expect to see this trend accelerate.

Age

Of the 1,135 servers identified within the survey, 74% are four years old or newer. Most hardware vendors commit to five years of parts availability for servers; therefore, five years is the reasonable upper limit for the life of a deployed server.

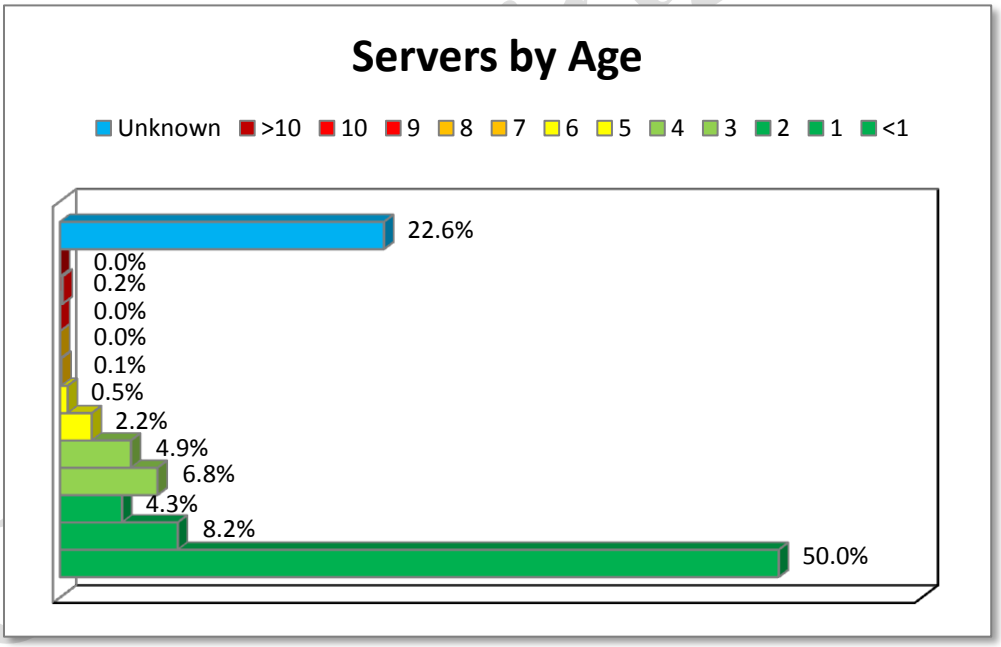

Figure 3 - Servers by Age

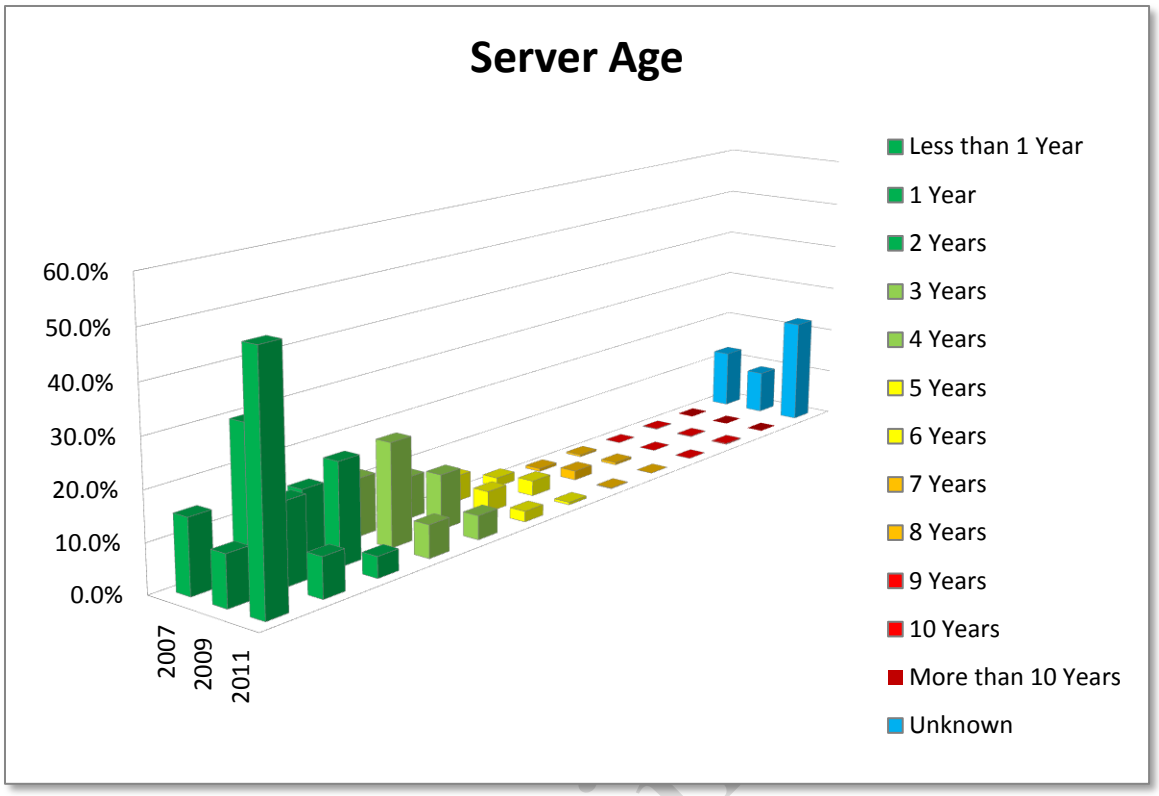

Figure 4 - Server Age

As shown in the above figure, there was a dramatic increase in servers put into production in the last year. Some of this is attributable to the new equipment purchased for the SMDC to increase the capacity for virtualization. Also, some of the increase may be the result of replacing servers that were well beyond their useful lives.

APPLICATIONS

Applications are software that can include single-user desktop applications to large system –wide applications and business- related utilities used by many users. Applications are used to carry out a wide variety of functions performed by agencies within the state government. These functions support internal, state-related business processes as well as external, public-related business transactions. The survey data does not reflect the single-user applications.

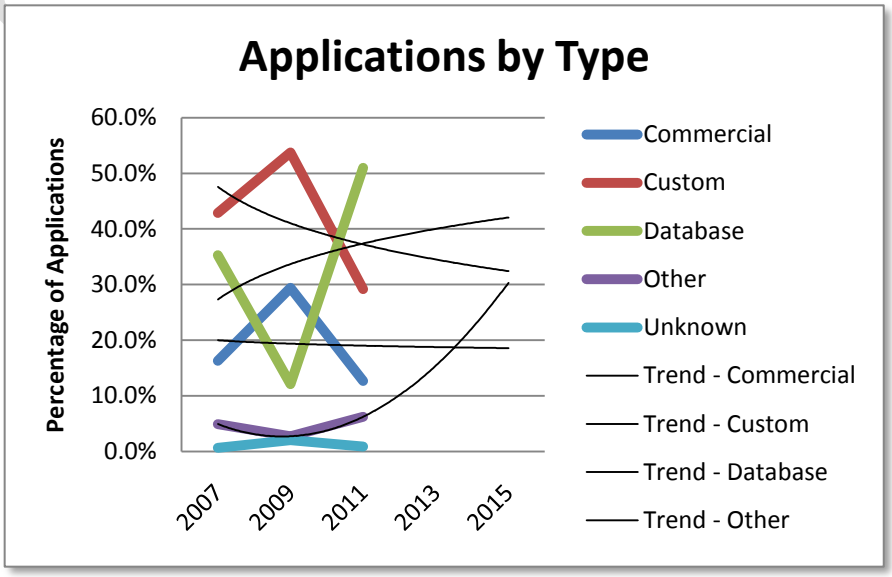

Figure 5 - Applications by Type

The state's applications are classified into three major categories: **commercially** available

and procured, **custom** built, or a **database** (data storage) application. Only 13% of the applications used by the State of Montana are commercially available products. Today, 29% are custom built to meet the unique needs of the state, or because a commercial application was not available.

Applications were rated by the agency as to their relative age ranging from new to obsolete for current purposes. A total of 61 applications are currently declining in age or obsolete, down from 107 during the last biennium. Thirteen of these are custom applications that will need to be upgraded or replaced in the near to immediate future. The number of custom applications that need to be upgraded or replaced is down from 62 during the last biennium.

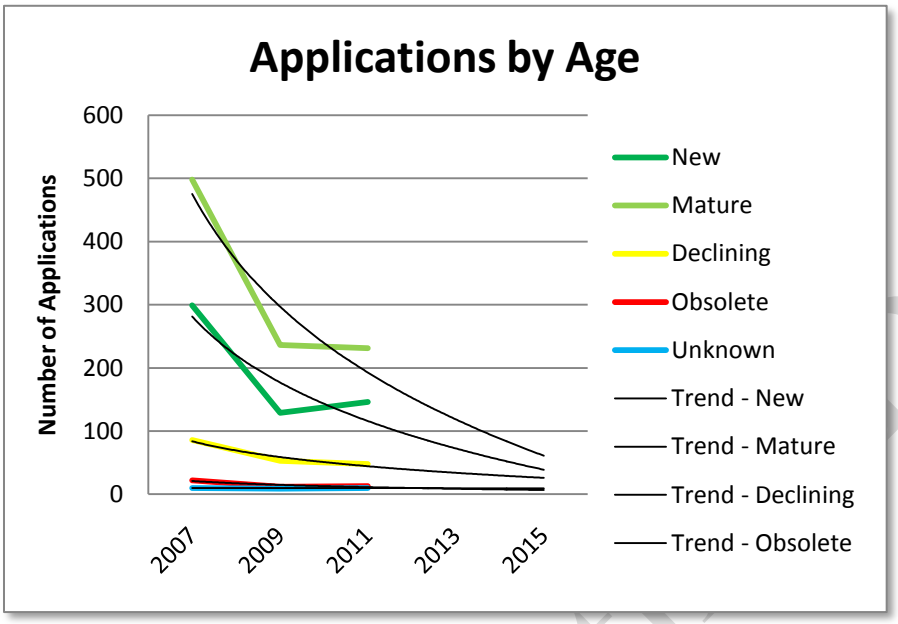

Figure 6 - Applications by Age

Software lifecycle is predicated on the type of software and hardware platform being used. Any one of the following factors may require the replacement or updating of software: hardware equipment changes, operating system changes, user needs, manufacture updating, and terminating support for older versions. At a minimum, software upgrades should be timed to coincide with normal hardware replacement or when applications or middleware are undergoing a major upgrade.

The trends for age and number of applications as depicted above appear to signify a consolidation of applications along the entire lifecycle. There are a number of potential reasons for this. One reason could be the increased use of Service Oriented Architecture, which strives to look toward modular systems that interconnect instead of one large monolithic system. Another reason could be the realization of consolidated data and information that increases the reliability and integrity of the information. This may also be viewed as a capture once, use many philosophy, where information is centrally located, with the appropriate individuals having only access to the information they need. This reduces the burden on the citizen that must provide information over and over to a variety of agencies. Lastly, this may also be a focus toward using IT to solve business problems instead of deploying the latest and greatest solution.

Another interesting point from the above trends shows that the use of custom software is declining, while database and commercial applications are increasing. This same trend appears to be happening not just here, but among the private sector where the customized software is becoming more expensive to develop and maintain, and in many cases, too inflexible to move with a rapidly changing landscape.

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Applications were also rated for their level of criticality to the continued operation of state services. This is tied directly to Continuity of Operations (COOP) and Continuity of Government (COG). The agencies were asked to indicate whether the application has a disaster recovery plan in place. A total of 72% of applications do **not** have a disaster recovery plan, 89 of which are highly critical to state operations. This is only down 8% over the last biennium.

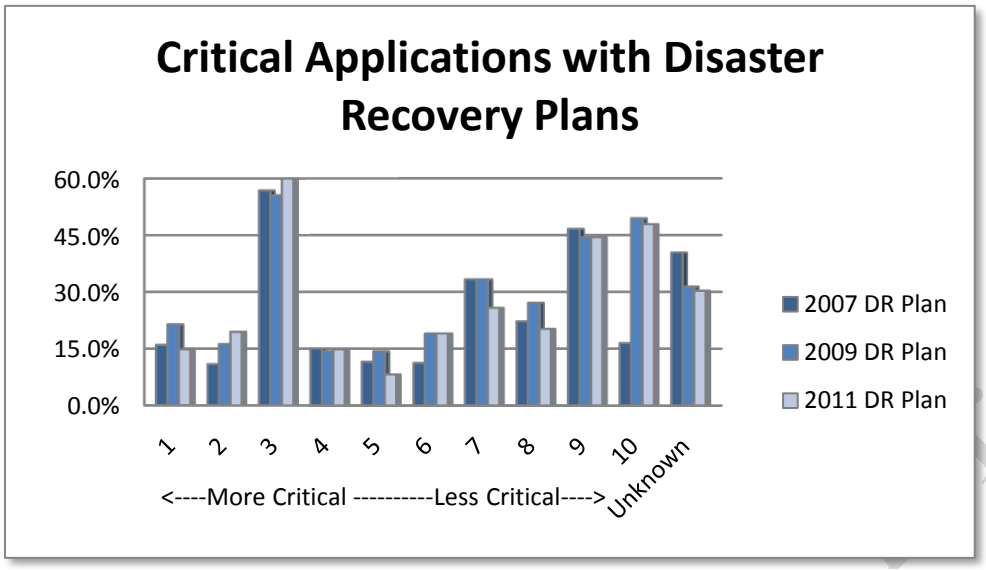

Figure 7 - Critical Applications with Disaster Recovery Plans

While great emphasis has been placed on COOP/COG activities since 9/11/01, there is little change from the 2007 Biennial report through this report in the number of critical applications that have Disaster Recovery plans as reported by the agencies in their IT inventory.

The applications were also rated for their level of criticality to the continued operation of the agency services and functions. A scale of high, medium, or low was used. As reported by the agencies, a staggering 72% of the applications rated as critical to continued agency operation do **not** have a disaster recovery plan.

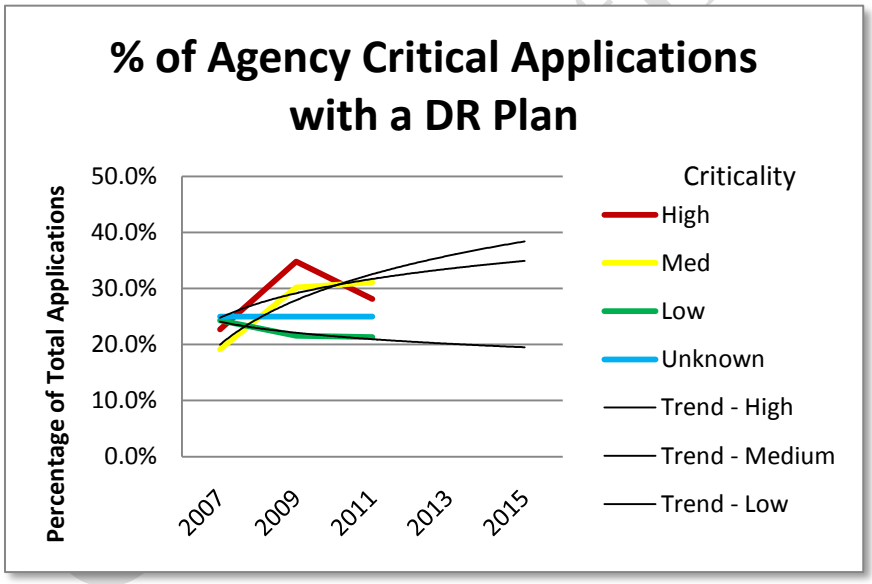

Figure 8 - % of Critical Applications with a DR Plan

While the trend is to have a Disaster Recovery Plan in place for continued operations and services, by the year 2015 only 35% of high rated critical applications will have a DR Plan. Only 39% of medium rated critical applications are expected to have a DR Plan. The focus of COOP/COG activities is now on the business processes and services. With this change in focus, it is anticipated that this trend will accelerate in the future as there is greater awareness of applications supporting critical processes and functions for the state. In addition, policy for criteria for disaster recovery planning is being developed.

DESKTOP COMPUTERS

Montana currently has 14,986 Personal Computers in service, with 3,431 or 23% laptop computers, up from 2005 or 14.6% during the last biennium. There has been a 14.2% reported increase in the number of Personal Computers from 2004 to 2010. The state's PC-standard is based on IBM and IBM-compatible equipment and selected software. The state has a term contract with IBM, Dell, and HP for PC acquisitions. While there has only been a moderate growth in the number of total PCs, the number of laptops is increasing while the overall number of desktop PCs remained fairly stagnant during 2007 and 2010.

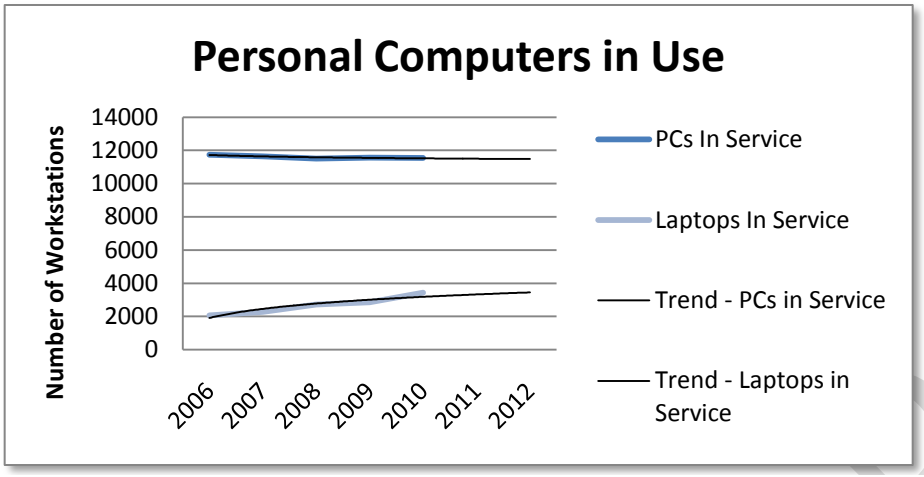

Figure 9 - Personal Computers in Use

In the last biennium, the state's policy for PC replacement was once every four years, which is consistent with industry and government practices. The actual PC replacement rate since FY05-FY10 averaged only 21% for desktop computers and 25% for laptop computers, or about every four to five years. These averages are in line with the policies moving toward a replacement cycle of five years from the Governor's Accountability/Efficiency initiative.

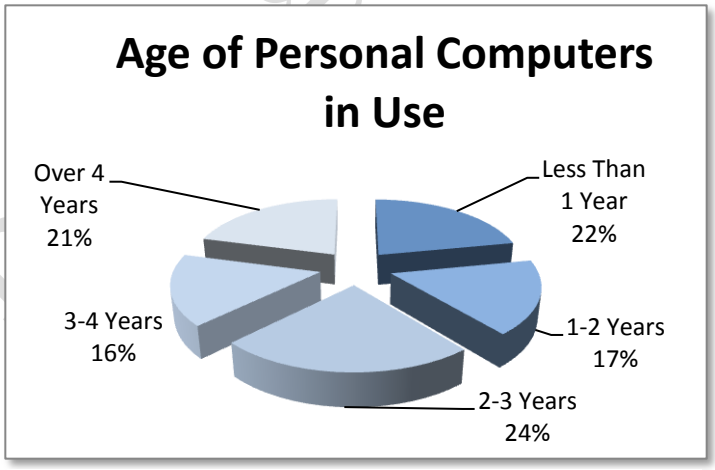

Figure 10 - Age of Personal Computers in Use

TELECOMMUNICATIONS NETWORK INFRASTRUCTURE

An RFP for statewide transport services (SummitNet III) was awarded to Bresnan Communications on 04/01/2008. The transport service is a Multi-Protocol Label Switching (MPLS) converged network capable of combining multiple technologies such as Voice, Video and Data over a single transport. Quality of Service is used to ensure Voice, Video and Data are allocated sufficient bandwidth and prioritization over a single circuit. This new network and its state-of-the-art evolving capabilities allows for separation of traffic. This provides the state the flexibility to support ongoing security requirements, if necessary.

The backbone of the MPLS network links multiple core locations (Billings, Bozeman, Helena and Missoula) via a primary 2.5 Gigabit link and a 1 Gigabit redundant link. The core provides both redundancy and diversity to minimize the possibility for failure to critical resources. Multiple aggregation sites are strategically located across the state to alleviate remote transport costs back to a core location. Aggregation sites reside in Glasgow, Fort Benton, Cut Bank, Polson, Kalispell, Hamilton, Butte, Great Falls, Miles City, Havre, Lewistown,

Glendive, Dillon, Wolf Point and Forsyth. Libby is depicted on the map as an aggregation location but has yet to install. Bresnan has partnered with multiple telecommunications providers across the State to provide a state wide footprint for MPLS transport services (see figure 11)

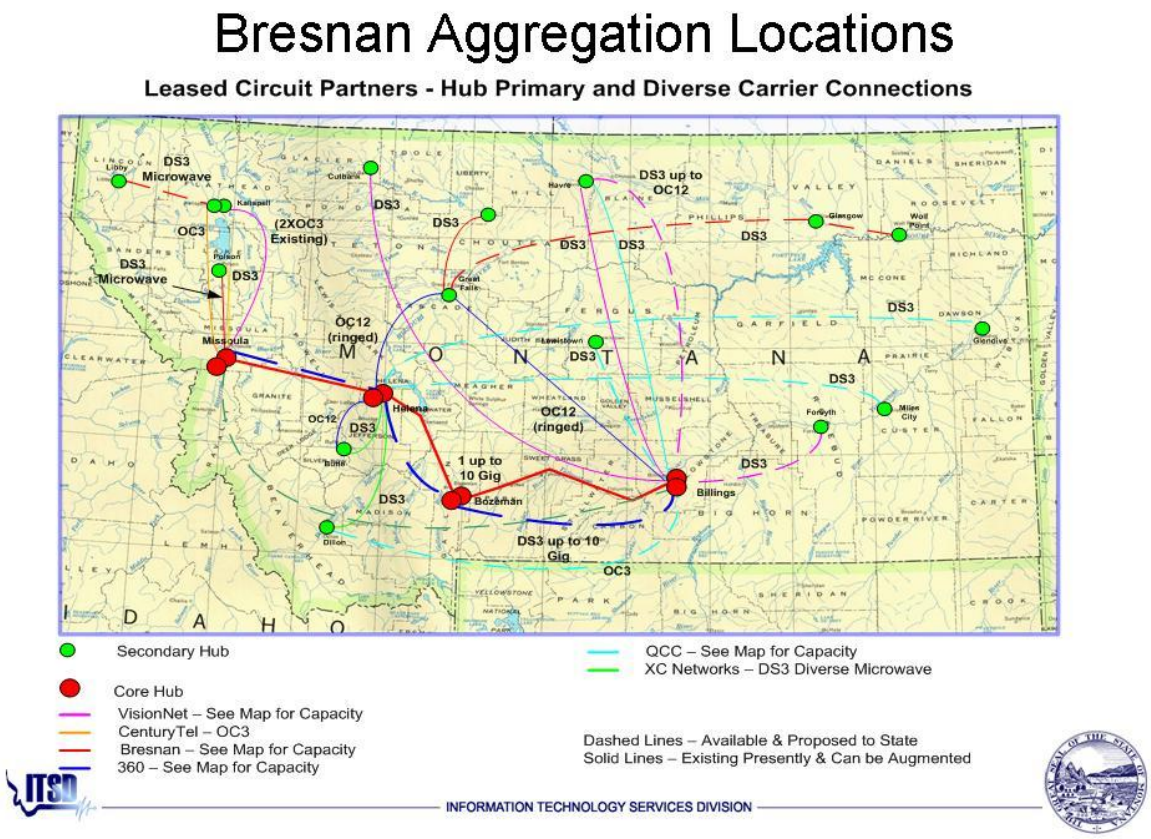

Figure 11 - Bresnan Aggregation Locations

As of October 2010 the State of Montana has implemented approximately 150 MPLS remote locations to SummitNet III. This includes Montana's 56 County Courthouse locations. The majority of these locations have video requirements that required dedicated circuits. The state was able to cancel these dedicated video circuits and use MPLS as the transport supporting both their data and video requirements. Other locations that have been moved to MPLS have gained the ability to failover to a redundant location should an aggregation or core connection fail.

VOICE

On the voice side of the network, 38 Private Branch eXchanges (PBX) and 246 smaller key systems connect to SummitNet II to provide traditional voice services for the state Voice PBX and key systems. PBX servers have a much longer life than data servers. Some have been used for more than 20 years. Individual components and software are upgraded within the same chassis. Features and functionality of newer systems including Voice over Internet Protocol (VoIP) are widely deployed and the costs are dropping. VoIP allows the transfer of voice traffic over lines that are typically used for data traffic and does not require dedicated PBX's at the remote locations. The Internet is currently carrying voice traffic through VoIP. Proper planning based on accepted standards should ensure the state's continued success in its use of its telecommunications infrastructure to reach across Montana.

The State has begun to deploy VoIP technology across the state where it is feasible. Several of the circuits that carry long distance voice traffic have been converted to use the statewide MPLS data network to carry that traffic. This has resulted in a savings for the state since the dedicated leased circuits from vendors such as Qwest have been disconnected. The state has also deployed VoIP technology to provide access to applications such as the Contact Center Manager call center application. This allows agencies to access the call center application housed at the new SMDC data center in Helena by using VoIP telephones and web access. The state has also deployed a number of VoIP telephones in agency locations, especially in those locations where a significant investment would be needed to provide traditional digital or analog telephone service. This has allowed the state to serve some locations at a reduced cost for infrastructure. The use of VoIP technology will continue to grow as new buildings are added and new users require access to applications such as call centers, which can be provided readily via VoIP technology at a reduced initial investment.

DATA (INTERNET ACCESS)

Up until January of 2002, the state's Internet use grew at a modest but steady rate. By July of 2003, the growth started to accelerate, more than doubling by FY06. The acceleration has continued through the 07/08 biennium. This growth mirrors the growth in Montana's eGovernment services as well as a greater dependence on the Internet as a means of conducting research, communicating, and an increase in the amount of electronic data being sent to citizens, federal agencies, and private companies. Use of the Internet as a key strategic communications vehicle will continue to fuel its rapid growth. This trend is not expected to change in the foreseeable future. Because the Internet is becoming such an integral part of everyday business in every state agency, a second Internet access point in Billings was added as a backup in case the primary link fails.

VIDEO

The Montana Educational Telecommunications Network (METNET), also known as SummitNet Videoconferencing Network (SVN), uses the national transmission standard for video and data compliant subscription service that supports both state agencies and the university system's delivery of two-way interactive video conferencing to support court cases, hearings, arraignments, medical consultation, meetings, training, and distance learning. The system uses the SummitNet II MPLS infrastructure to connect and support more than 200 State video conferencing sites in 50 communities across Montana.

The State of Montana's video conferencing service has become a vital resource to many state agencies that have adopted this technology as a primary method of improving efficiency and saving costs through reduced travel and enhanced communications. This combined with the governor's 20X10 initiative has resulted in the widespread growth of video endpoints throughout the state that serve a wide range of purposes but primarily exist to conduct state business. In order to support this widespread growth, the state has upgraded its video services infrastructure and made investments in transport services, management & scheduling tools, and people to accommodate agency demand and further promote cost saving collaboration throughout state government.

The state now has industry leading interactive video conferencing and network infrastructure that supports high definition video, ad hoc bridging, web-based scheduling, global directory services, desktop conferencing with remote monitoring capabilities and protected communications with advanced encryption standards that will satisfy current demand and provide scalability for the future needs of state government.

DATA STORAGE ENVIRONMENT

Data storage is continually growing in size, features and functionality. Deduplication is one of the "hot" new features in data storage to help minimize the growth in size. Another trend is that disk storage is replacing tape storage in order to speed up backup and recovery processes, although tapes are still used for longer term archival purposes. SITSD has procured new storage systems for the State of Montana Data Centers in Helena and Miles City which incorporate and take advantage of all these latest features.

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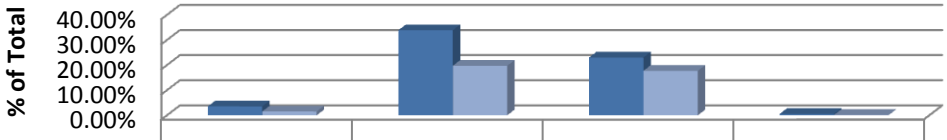
THE FACE OF IT IN THE STATE OF MONTANA

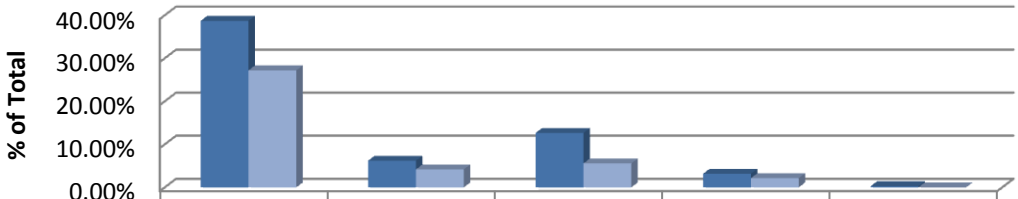
Generational Mix



	Millennial Generation	Generation X	Baby Boomer	Silent
Male	3.54%	33.88%	23.01%	0.51%
Female	1.52%	19.72%	17.70%	0.13%

As of August 2010, there are 791 state employees that are identified as working in IT. This does not include State Fund or the Judicial branch. The average age of all employees in IT is 46. For employees with less than five years service, the Millennials and Generation X make up 74%. For employees with less than 10 years, the same group makes up 72%. The Baby Boomer generation makes up 55% of more than 10 years of service. The definitions for the generational groups used are from *Generations* by William Strauss and Neal Howe.

Educational Background



	No Degree	Associates	Bachelors	Masters	Doctorate
Male	38.69%	6.19%	12.64%	3.16%	0.25%
Female	27.18%	4.17%	5.56%	2.15%	0.00%

As of August 2010, this is a breakdown of education as reported in the Statewide Accounting, Budgeting, and Human Resources System (SABHRS). As there is not a requirement to report education levels in SABHRS, the information reported may not accurately reflect education levels. Generation X is the most educated with 41.5% of the group having at least a 2 year degree. Silent is the next generation with 40% having at least a 2 year degree, then the Millennials with 35%. The Baby Boomers have 24.2% with at least a 2 year degree.

Departures During 2008/2009

	< 2 Years	2-5 Years	5-10 Years	> 10 Years	Retirement
Male	18	13	12	9	12
Female	9	5	7	7	17

Turnover during the last biennium was 109 individuals. The definition of turnover for this chart are individuals that left employment with the State of Montana and not transferred within or between agencies. From a total of 791 employees, that represents a departure rate of 13.8% over the biennium. During the last two years, 80 employees were brought in for a loss of 29.

Years of Service with State

Less than 2 Years
10.11%

2 to 5 Years
21.11%

5 to 10 Years
20.86%

10 to 20 Years
31.61%

20 to 30 Years
12.52%

More than 30 Years
3.79%

Average Years of Service
11 Years 25 Days

Future Information Technology Initiatives

MAJOR IT PROJECTS FOR FY 2012-2013[1]
FUTURE IT INITIATIVES

AGENCY	PROJECT NAME	PROJECT PURPOSE	ESTIMATED COST
Agriculture (AGR)	Web Based Product Registration Process	Augmentation or replacement of hardcopy & email registration process that will provide customers with an alternative method for registering & processing payments	$280,000
			$280,000
Commerce (DOC)	ITO 1-5 HD-BOH-Expand auditing functions of LIHTC & MF properties.	Implement Low Income Housing Tax Credits (LIHTC) and Multi-family (MF) program audit software. Improve staff efficiency in the LIHTC Project and MF Property compliance audits by automating the documentation process.	$32,940
Commerce (DOC)	ITO 1-7 HD – Annual Software Maintenance	To keep Housing Division's software up to date and operating accurately and efficiently.	$100,064
Commerce (DOC)	ITO 1-14 – MPD - Replace or Upgrade Customer Relationship Management (CRM) System	Pending the outcome of an IT audit/study being performed in the first quarter of 2010, MPD will replace or upgrade the current Siebel/Oracle CRM system. This is both a cost saving and improved business process effort. The goal is to provide better customer service to both internal and external users. MPD is also attempting to integrate several ancillary applications at the MPD to reduce risks, redundancy, and cost.	$250,000
Commerce (DOC)	ITO 2-5 MPD - Tourism Client Interface	This project will provide better customer service to tourism partners who have been requesting this functionality for some time. It will also serve web site users better by having enhanced and timely travel planning information on DOC's site and reduce the amount of internal staff time required to keep this information up to date.	$100,000
Commerce (DOC)	ITO 4-8 Existing Server Standard Cycle Replacement – Housing Division	Maintain Information Technology equipment that is performing critical processing functions at a level to ensure their reliability and availability to support the business processes of the Housing Division.	$8,500
Commerce (DOC)	ITO 4-8 Existing Server Standard Cycle Replacement – Montana Promotions Division	Maintain Information Technology equipment that is performing critical processing functions at a level to ensure their reliability and availability to support the business processes of the Montana Promotions Division.	$67,500
			$559,004
Department of Environmental Quality (DEQ)	Tank Database Upgrade	Convert the existing database system from its Microsoft Access platform to a robust state-supported platform more compatible with both short and long-term program needs to ensure long-term stability and continuity of the tank databases for purposes of efficiently tracking pertinent information to implement department regulatory requirements and to provide information necessary to ensure cross-program requirements within the department are effectively managed accountably.	$540,648
			$540,648

[1] Reported in Agency IT Plans as of 29 October 2010

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AGENCY	PROJECT NAME	PROJECT PURPOSE	ESTIMATED COST
Department of Labor & Industry (DLI)	Montana Utilization and Treatment Guidelines	Provide a utilization and treatment guidelines delivery system to workers' compensation stakeholders. The objectives are to merge two discrete guidelines into one Montana set of guidelines and to deliver this information in an easy-to-use web-based system.	$398,000
			$398,000
Department of Justice (DOJ)	Criminal Justice Information Network (CJIN)	To provide access to criminal justice information to increase public safety.	$1,800,000
Department of Justice (DOJ)	Continuity of Operations (COOP)	Provides a COOP capability for DOJ IT systems in order to support justice missions should a disaster occur and affect the main DOJ systems location.	$340,000
Department of Justice (DOJ)	Gambling Control Division (GCD) Web Enhancements	Enhance the web entry system that is being used for online reporting of 99% of video gambling machines.	$50,000
Department of Justice (DOJ)	Integrated Justice Information System (IJIS) Broker	Provide capability to allow various Justice related agencies to exchange and share information.	$430,000
Department of Justice (DOJ)	IT Infrastructure	Provide necessary IT infrastructure to support current and future projects and systems.	$185,000
			$2,805,000
Department of Revenue (DOR)	Ongoing System Maintenance and Support	The Department of Revenue has purchased two COTS products for tax processing – GenTax for our Integrated Revenue Information System (IRIS) and Orion for the valuation of property taxes. Both systems reside on the state mid-tier environment supported by the Department of Administration (DOA), Information Technology Services Division (ITSD). In addition, the maintenance for Imaging and Scanning will be with our vendor FairFax.	$2,386,000
			$2,386,000
Department of Health and Human Services (DPHHS)	Upgrade CDS & HMIS to JAVA	The Energy Audit, Energy Education and CDS SNAP (Supplemental Nutrition Assistance Program) modules are web-based systems and any new modules are being developed as web-based. This project is to continue the upgrade process to include the CDS and HMIS system to web-based systems developed in JAVA. The purpose of this funding is to provide technical services for the development (including maintenance and enhancements), testing, and database changes, user acceptance, training, creation of manuals, system documentation and project management.	$1,000,000
Department of Health and Human Services (DPHHS)	CDS/HMIS Maintenance, Support and Enhancement	Provide technical services for the ongoing development (including maintenance and enhancements), testing, and database maintenance, as well as production support, user assistance, training, creation of manuals, system documentation, and project management.	$7,753,656
Department of Health and Human Services (DPHHS)	DDP Subsystem Maintenance and Support	Provide on-going maintenance and support of the AWACS DDP Subsystem and ICP Web Application. The efforts to be supported that are covered in this statement of work are: • Implementation of Enhancements Already Identified • Anticipated Additional Enhancements • General System Maintenance and Support • System Administration Support • Project Management Support	$2,176,140
Department of Health and Human Services (DPHHS)	Healthy Montana Kids (HMK)	Ensure that DPHHS can meet the existing and new federal regulations for Medicaid and CHIP, as well as state regulations including the HMK legislation. In addition, to ensure that DPHHS provides excellent service to the beneficiaries of the HMK program and minimize any delays in providing this necessary coverage.	$2,359,022

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AGENCY	PROJECT NAME	PROJECT PURPOSE	ESTIMATED COST
Department of Health and Human Services (DPHHS)	KIDS Maintenance and Support	Ensure that DPHHS can meet the existing and new federal regulations for CHIP, as well as the state regulations for HMK. In addition, to ensure that DPHHS provides excellent service to the beneficiaries of the HMK program and minimize any delays in providing this necessary coverage.	$694,500
Department of Health and Human Services (DPHHS)	SEARCHS Maintenance and Support	This project is crucial to the State of Montana as it is necessary to ensure CSED provides the federally mandated services to Montana citizens and to the federal government. The maintenance and operations of SEARCHS is contracted to a third party and the detailed and consistent management of that contract is necessary in allowing CSED to meet or exceed the federal standards.	$17,171,661
Department of Health and Human Services (DPHHS)	SEARCHS Modernization	Incremental modernization of SEARCHS. In addition to updating the technology of select system components, this project will demonstrate the feasibility of reengineering the current system into a modern web-based system that incorporates a relational database, rules engine, and service-oriented architecture. This modernization effort is in line with the Department's Enterprise Architecture vision for interoperability and data sharing across department systems and programs. Achieving this end goal incrementally lowers risk, controls cost, and provides real results in a progressive return on investment.	$5,625,312
Department of Health and Human Services (DPHHS)	PAB Records Access Management Project (RAMP)	DPHHS Technology Services Division(TSD) & Human and Community Services Division (HCSD) will work together to transfer files from the current hard copy form to an electronic Records Management System, due to the anticipated increased accuracy of benefit determinations, increased timely delivery of benefits to eligible clients, increased time realized to train new staff, flexibility of workload delegation and cost avoidance of shipping hard copy case files.	$922,587
Department of Health and Human Services (DPHHS)	Licensing Bureau Health Care Facilities Database	To create a functional database (ORACLE or a similar system) in a user friendly fashion which will allow the Health Care Facility Licensing Unit to issue appropriate licenses for varying levels of health care providers.	$75,000
Department of Health and Human Services (DPHHS)	TPL Case Management System/Database	In 2007, the Department applied for and received a CMS Transformation Grant. The purpose of the grant was to improve lien and estate recoveries by automating time-consuming, manual processes and developing or improving systems that will ultimately increase recoveries. DPHHS envisioned accomplishing this through assessing the effectiveness of the current processes, automating the processes that can be automated, and creating a systematic way to capture data to enhance lien and estate recoveries – with the goal of increasing the amount of collections on liens and estates to return to the Medicaid Senior Long Term Care program.	$650,000
Department of Health and Human Services (DPHHS)	TPL Data Matching System	DPHHS uses demographic, employment, medical, and many other types of data to ensure Montanans are receiving appropriate services from the State. To create a holistic view of the Department's program participants, DPHHS plans to implement a data matching application. This application would link person-level information from various sources. The Quality Assurance Division is working with the Technology Services Division's Project Management Bureau to determine the best alternative for a data matching application.	$1,300,000

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AGENCY	PROJECT NAME	PROJECT PURPOSE	ESTIMATED COST
Department of Health and Human Services (DPHHS)	HIPPS Maintenance and Support	Provide the availability to maintain and enhance the new HIPP System on an ongoing basis, allowing for the users to complete their necessary day to day tasks. As with any new system, additional maintenance or enhancements will be required to ensure the system suits the business need after implementation. In addition, as State and Federal policies and mandates evolve, the system may have to be modified to adhere to these new policies and regulations. This is especially vital with Health Care Reform "looming", which will most likely require adjustments to the HIPP System and/or business processes.	$1,389,000
Department of Health and Human Services (DPHHS)	CHIMES-Medicaid Maintenance and Support	Provide the availability to maintain and enhance the new CHIMES-Medicaid System on an ongoing basis, allowing staff to determine applicant eligibility for some forty Medicaid Program coverage groups as well as the Medicare Savings programs known as QMB, SLMB and QI1. As with any new system, additional maintenance or enhancements will be required to ensure the system suits the business need after implementation. In addition, as State and Federal policies and mandates evolve, the system may have to be modified to adhere to these new policies and regulations. This is especially vital with Health Care Reform "looming", which will most likely require adjustments to the CHIMES-Medicaid System and/or business processes.	$17,847,749
Department of Health and Human Services (DPHHS)	Medical Marijuana Check Scanner	The request complies with DPHHS IT Strategic Plan and Goals: (1) Use information technology to support and enhance DPHHS program service delivery and increase efficiencies. (2): Ensure that information technology resources are efficient, responsive, cost-effective and available when needed.	$11,000
Department of Health and Human Services (DPHHS)	M-SPIRIT Maintenance and Support	The WIC Program transferred the M-SPIRIT System in January 2010. This project is for ongoing maintenance and support from the implementation contractor. It is important to have this ongoing support of the system to insure that WIC services can be maintained efficiently and effectively at all ninety-five clinic sites in Montana.	$993,607
Department of Health and Human Services (DPHHS)	WIC EBT	WIC EBT Planning is funding to support a planning contractor to look at the feasibility of developing or procuring an EBT system that is compatible with the current management information system used by the MT WIC Program.	$1,200,000
Department of Health and Human Services (DPHHS)	CHIMES-SNAP & CHIMES- TANF ELIGIBILITY SYSTEMS, ENTERPRISE ARCHITECTURE, AND FISCAL SERVICES	Determine eligibility. In addition, the SNAP eligibility system must meet specific program needs, including requirements of the Federal Quality Assurance Standards and the SNAP Employment and Training program. The TANF eligibility system must meet TANF-specific program needs including Federal Reporting and Case Management requirements.	$40,783,418
Department of Health and Human Services (DPHHS)	Montana Access (EBT) Maintenance and Support	The EBT authorization platform was designed to contain all the functionality required by state and federal regulations to support SNAP (Food Stamp) Program transactions, as well as TANF benefits. The design was also extensible so that future state programs such as childcare, child support payments and Medicaid benefits could be added to the system.	$10,325,147

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AGENCY	PROJECT NAME	PROJECT PURPOSE	ESTIMATED COST
Department of Health and Human Services (DPHHS)	TEAMS Maintenance and Support	A wide variety of partially connected, time-consuming, and error prone manual eligibility processes were in use prior to the TEAMS project. As the project name implies, the purpose of TEAMS was to replace these with a single automated Food Stamps, AFDC, and Medicaid Income System (FAMIS). With the development of TEAMS, a Maintenance and Enhancement (M&E) project was incorporated. The purpose of the support plan is to outline an infrastructure to maintain optimal system performance as well as to prioritize and incorporate changes to the system to meet new federal and state mandated programs and policies.	$14,131,953
Department of Health and Human Services (DPHHS)	Facilities Electronic Health Records	Montana Medicaid and its partners will work to achieve a logically sound approach to health information exchange that produces the delivery of better health care for Montanans, including enhanced patient safety and improved coordination of care, by promoting the adoption of interoperable electronic health record systems and through the use of health information technologies meeting national standards. This is best accomplished through a public-private partnership, in collaboration with payers, providers, consumers and health information technology partners.	$1,150,000
Department of Health and Human Services (DPHHS)	HIT (Health Information Technology)	Montana Medicaid and its partners will work to achieve a logically sound approach to health information exchange that produces the delivery of better health care for Montanans, including enhanced patient safety and improved coordination of care, by promoting the adoption of interoperable electronic health record systems and through the use of health information technologies meeting national standards. This is best accomplished through a public-private partnership, in collaboration with payers, providers, consumers and health information technology partners.	$664,000
Department of Health and Human Services (DPHHS)	Statewide Automated Child Welfare Information System (SACWIS) Replacement	The Montana Automated Child Welfare Information System (MACWIS), will replace Montana's current legacy child welfare system with a federally certified system that combines modern information technology practices and tools with a high degree of system integration and usability. Due to a shortfall in the State's general fund balance that triggered actions prescribed by 17-7-140 Montana Code Annotated (MCA), DPHHS, along with other agencies in the State of Montana, was directed by the Governor's office to submit a list of recommended budget reductions. Recommendations submitted by DPHHS included a postponement of the MACWIS project.In addition to budgetary considerations, this project was selected for postponement in order to allow DPHHS more time to build the internal staff capacity necessary to support a system development effort the size and complexity of MACWIS. Funding for MACWIS was appropriated during the 2007 legislative session in House Bill 4 (HB4), the Long Range Information Technology (LRIT) bill.	$905,457
Department of Health and Human Services (DPHHS)	CACFP Maintenance and Support	Provide the ongoing operations and enhancements required to run the system and meet federal requirements for operating the program. The FDA uses system reports to balance expenditures against the State of Montana's SABHRS system. Workers use the system to enter data for providers and recipients and payment authorization. Mandatory reviews, corrective action plans and follow-up are also documented in the system.	Not Posted

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AGENCY	PROJECT NAME	PROJECT PURPOSE	ESTIMATED COST
Department of Health and Human Services (DPHHS)	CAPS Maintenance and Enhancement	Maintenance and enhancement of the CAPS system is the primary purpose of the CAPS project. With the postponement of the MACWIS project, several large enhancements are now required to meet federal regulations, and improve safety and outcomes for Montana children in crisis. A major new federal reporting requirement, NYTD, will be implemented on schedule in October 2010. The primary objectives over the next 2 to 5 years will be to support the objectives set forth in the AFCARS Improvement Plan (AIP) and the Program Improvement Plan (PIP) of CFSD in DPHHS. Both of these plans contain short and long term goals aimed at fulfilling the state's commitment to modifications and improvements needed in CFSD and ultimately in the CAPS system. Significant modifications will need to be made to the CAPS system. The most important objective of the CAPS system is continuity of operations with diligent efforts to maintain safety, confidentiality, fiscal responsibility, services, and a host of other day to day functions necessary for child protective services.	$16,325,435
Department of Health and Human Services (DPHHS)	CCUBS Maintenance and Support	Provide the maintenance and enhancement support to ensure continuous and ongoing operations. New contracts, federal requirements, software upgrade, new quality assessment and incentive efforts, and program driven improvements make continual enhancement of the CCUBS system a reality. In addition, new technology is driving changes in childcare systems.	$5,999,488
Department of Health and Human Services (DPHHS)	MMIS Fiscal Agent Contract	The Department currently contracts with Affiliated Computer Systems (ACS). This funding will ensure the Department continues to be able to fund the fiscal agent contract. ACS processes over 6 million claims annually, maintains enrollment for approximately 12,000 providers and reimburses these providers through the processing of claims in excess of $800 million.	$46,724,706
Department of Health and Human Services (DPHHS)	MMIS Replacement	The Department hired an independent contractor to perform an analysis of the current MMIS and make recommendations to the Department regarding whether it can continue with the existing system, perform a major enhancement, or implement a new system. Based on this analysis, the Department chose to procure a new MMIS system.	$50,399,059
			$248,577,897
Livestock (LIV)	Brands	Minimize workload on LIV staff by facilitating more accurate, consistent, and easier data entry within the department. Maintain data in a central database.	$178,000
			$178,000.00
Lottery (LOT)	Replacement Lottery System Contractor	Obtain a contractor that will provide, operate, and maintain the Lottery's System for another 7 to 10 years. This includes the establishment and maintenance of a retailer network connecting approximately 800 terminals and a system for the Lottery staff to manage and control all aspects of Lottery operations.	Not Posted
Montana Department of Transportation (MDT)	EVMS move to Web Base	Currently, EVMS is a server dependent Oracle base system whereas the Statewide Fleet Management System is a web based system. Interfacing the two web based systems would allow all motor vehicles owned by the State of Montana to report and gather information from a common source.	$277,000
Montana Department of Transportation (MDT)	Expanded CVISN (Commercial Vehicles Information Systems and Networks)	The State of Montana will work to implement expanded CVISN capabilities in to enhance the productivity of commercial vehicle operations and the driver and vehicle information sharing program areas.	$2,556,452

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AGENCY	PROJECT NAME	PROJECT PURPOSE	ESTIMATED COST
			$2,833,452
Montana Public Employee Retirement Administration (MPERA)	MPERA Imaging Project	• Implement Imaging and Workflow System for critical MPERA forms and documents. • Improve business process functionality. • Increase efficiency of MPERA staff, technology and workflow systems. • Improve records information management. • Protect information due to recovery of misplaced or corrupted files and documents. • Provide recovery of critical functions and records for continuity planning. • Produce the maximum value for the time, effort and budget invested. • Improve response and timeliness to customer requests	$139,554
Montana Public Employee Retirement Administration (MPERA)	MPERA New System Development	The current mainframe system for MPERA utilizes IDMS databases. These applications are nearing the end of their life cycle, but are customized to the needs and continue to perform well. MPERA would like to replace the buyback, retired, active and the Volunteer Firefighter applications.	Not Posted
			$139,554
Montana State Fund (MSF)	Personal Information Protection	Protection of personal data and procedure for notifying individuals if the data is compromised.	$75,000
			$75,000
Office of Public Instruction (OPI)	School Staffing	Assess and communicate the quality and achievements of K-12 education, provide access to management of information and data related to K-12 school improvement, support accountability and improvement in all Montana schools	$400,000
			$400,000
		Summary Total	$259,172,555

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State Information Technology Trends

PURSUE COST SAVINGS

On January 13th, 2010, the governor announced the Montana Accountability Partnership (MAP) contest whereby citizens could suggest ways for the state to save money. The ideas generated would then be voted on by the citizens, with the most voted on idea receiving a palladium coin. The categories of ideas centered around Technology Device Assets, Digital Government, Software Assets, Centralized Functions, Power Usage, and Miscellaneous.

Of all the ideas submitted though the MAP contest, three of the top four ideas had direct relationship to IT. The winning idea, through a public vote, was to extend the PC replacement cycle from four to five years. This idea is expected to save the state nearly $400,000 annually.

SITSD, with the assistance of other state IT groups and organizations, has taken action to some degree on several of the cost savings items identified. We will continue to look for ways of capitalizing opportunities to implement the suggestions that result in cost savings to the state.

SERVER VIRTUALIZATION AND CONSOLIDATION

Energy reduction and cost savings are forcing the need to assess IT operations and evaluate opportunities. One such opportunity is the expanded use of virtualized servers. Virtualization is a term that is often applied to a wide range of technologies. Essentially, virtualizing technology decouples the software used in that realm from the hardware. In the area of server virtualization, this means that multiple server environments can be housed on a single piece of physical hardware.

Within thirteen agencies, 55% of servers are using virtualization technologies. At least seventeen agency data centers based in Helena are not energy efficient and require huge amounts of power for cooling. The new State of Montana Data Center (SMDC) was designed for energy efficiency, reduction of impacts from human and non-human risks, and reduction of human operations intervention. A statement of work with IBM has been signed to conduct a server rationalization study. After this has been completed, the workgroup will issue a final report discussing the pros and cons of virtualization/consolidation options and a recommendation for moving forward.

DESKTOP VIRTUALIZATION

Desktop virtualization is the use of virtual machines to let multiple network subscribers maintain individualized desktops on a single, centrally located computer or server. Desktop virtualization offers advantages over the traditional model in which every computer operates as a completely self-contained unit with its own operating system, peripherals, and application programs. Overall expenses are reduced because resources can be shared and allocated to users on an as-needed basis. Desktop virtualization can provide better security, improved manageability, and flexibility in many situations.

The state needs a strategy for adopting desktop virtualization. The Information Technology Managers Council (ITMC) has launched a working group to determine options and strategies for state agencies considering desktop virtualization. Several agencies are participating in this working group, and the group will be discussing the various virtualization options, and the advantages/disadvantages of each. The working group has determined

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that it will take a considerable investment of time and money to make desktop virtualization work, and to do it right. Therefore, agencies may not realize cost savings immediately, but over the long run should see considerable savings. SITSD supports and participates on the ITMC working group. The group's actions may result in recommendations, such as a technical standard, to the CIO.

CLOUD COMPUTING

Cloud Computing is defined as "Internet-based computing, where shared resources, software, and information are provided to computers and other devices on demand like the electricity grid." The goal of using cloud computing is to off-load those services and software that may be cheaper to provide via Internet based services rather than by a traditional on-premise IT resource.

As with any other solution, there are items such as security, return on investment, and infrastructure needed to support cloud computing. For security, a risk-based analysis must be conducted, and those identified risks managed throughout the lifecycle. Similarly, a return on investment must be conducted to ensure efficient and effective use of cloud services. And finally, infrastructure support needs are met by having adequate connectivity to the Internet.

SITSD is completing an RFI in association with the state of Utah and Oregon for Geographic Information Services (GIS). SITSD has also moved its SPAM services to a cloud based service. Moving to a cloud based service has saved the state $50,000 over the past two years.

Going forward, SITSD will research and execute on opportunities to use cloud based services where appropriate. SITSD may pursue GIS cloud based services based on RFI responses. SITSD will also be looking to expand Internet connectivity services to provide a foundation for the use of cloud based services.

SOCIAL NETWORKING

The state recognizes that the Internet provides unique avenues to participate in discussions and share information with customers and the public. State agencies may wish to use an array of media such as Facebook, Twitter, blogs and wikis in serving customers and the public. However, use of Social Media increases the risk to the state's network by providing additional means for hackers to compromise the state's network and gain access to confidential and proprietary information. In order to mitigate those risks, training and acceptable-use issues will need to be addressed. SITSD will publish a policy on the use of social media. A draft version of the policy is currently under review.

STATE EMPLOYEE TELECOMMUTING

The legislature has encouraged consideration of teleworking over the last several sessions. Current economic conditions make teleworking an attractive alternative for many employees. Continuation of government during any disasters makes it imperative that the state develop a solid teleworking program.

SITSD believes a process is necessary to ensure equitable treatment of all employees in the division with regard to teleworking and teleworking opportunities. The SITSD executive team and the state talent managers will review all positions in SITSD for the possibility of telework. The team will identify all appropriate positions and develop plans to begin teleworking for those positions.

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Major State IT Issues

E-MAIL DISCOVERY AND ARCHIVING

E-mail discovery has become a significant legal and IT issue nationally and in Montana. The state does not have an archival system in place for email records and must rely on its disaster recovery system to satisfy e-discovery requests. This is very inefficient, ineffective, and poses significant legal risk for the state.

Budget requests were prepared for the current and previous legislative sessions to obtain funding for an email archival system, but did not advance due to the high cost ($1.4M for biennium) and lack of general awareness of this problem.

SITSD has coordinated with the DOA legal to address the following areas:

1) Created a legal review board to review email hold requests.
2) Raised awareness of this issue by presenting at the December 2007 CLE Conference attended by most state agency attorneys.
3) Established procedures for periodic review of all current email holds.
4) Revised forms and procedures for email hold and email release requests.
5) Encouraged agencies to eliminate "prospective" (ongoing) email holds in favor of "retrospective" holds for specific timeframes.
6) Eliminated numerous old email holds for cases which were settled, including all of the oldest "obsolete" tapes.
7) Reduced the normal backup tape hold time from 30 days to 14 days.

SITSD will continue to (1) raise awareness of the problem through IT, legal and executive channels, (2) investigate potential solutions, particularly incremental steps which could be taken which may have lower cost, (3) press for funding to address this issue.

INTERACTIVE VIDEO SERVICES

The state's video conferencing network (METNET), supporting more than 100 state offices, district courts, MDT, university campuses, and other political subdivisions has regularly exceeded the capacity of its legacy video conferencing bridge, which also lacks the ability to support the new High Definition video conferencing endpoints deployed by agencies. The state has also lacked the ability to protect the communications made by video conferencing devices since a large portion of the sites are not protected by the state's firewall.

During the 2007 legislative session, two major initiatives were funded which included network expansion and the new SMDC data center. The video upgrade project is part of the network expansion initiative which was to converge separate networks with MPLS allowing voice, video, and data to traverse the same network with quality of service. The cost of the upgrade was funded through network expansion but also offers additional return on investment by providing services internally that were being outsourced.

An Invitation For Bid for a Video Conferencing Bridge and Endpoint Management Appliance (IFB# 10-1927D) and Firewall Traversal System for H.323 Video (IFB# 10-1918D) were released April 5th, 2010 in accordance with HB-4 requirements to obtain services pursuant to Title 18, Chapter 4. There were 14 vendor bids on IFB# 10-1927D and 8 vendor bids on IFB# 10-1918D. Based on lowest price, Vision Net was selected as the winning vendor on both IFB's.

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To date all state supported video conferencing sites have been migrated to the state's new converged network and are now taking advantage of the new capabilities that it provides. SITSD will continue to migrate away from its existing video billing system and work towards a fully integrated billing system with EMS 11. SITSD will continue to migrate away from its remaining legacy sites that are based on H.320 technology and eventually gain the ability to discontinue the old video bridge.

PC Replacement Cycle

Statewide Information Systems Policy ENT-PCS-010 was updated to specify a 5-year replacement cycle instead of a 4-year replacement cycle for personal computers. The change in policy resulted from the winning suggestion in the Governor's Montana Accountability Partnership contest to suggest ways the state can save money. SITSD's conservative estimate for annual savings is $394,000 (approximately $2 million over 5 years). The winning suggestion in the Montana Accountability Partnership contest estimated approximately $600,000 annually with an overall savings of $3 million.

Statewide Wireless E9-1-1

When the wireless enhanced 9-1-1 statue was enacted in 2007, 16% of the account was directed towards: 1) **wireless providers** serving cities and counties with less than 1% of the population and 2) the **cities and counties** with less than 1% of the population. The June 30, 2011 sunset date was based on the assumption that all 53 Public Safety Answering Points (PSAPS) would be converted to wireless enhanced 9-1-1 by that date and significant upgrade costs would not reoccur in the future. We have made significant progress in deployments, but we are still not to the finish line.

Legislation has been introduced (LC 0152) to extend the "84-16" sunset in existing 9-1-1 statute (10-4-313, MCA) for the enhanced wireless account from June 30, 2011 to June 30, 2015. Without this extension, the 31 counties with less than 1% of the total population would see a reduction in their quarterly distribution in the amount of approximately $2,000. In addition, there are 16 counties with populations between 1.02% and 2.08% of the total population that qualify under statute to receive an amount equal to what the 31 counties with less than 1% of the population receive. The 9 largest counties would see an increase in their quarterly distribution of approximately $8,000-$10,000. The total 9-1-1 revenues would not change, only the manner in which it is distributed.

Legacy Application Management

A "legacy application" is an IT application that is in an obsolete format or that is installed on an obsolete system. Replacing legacy applications or making them work with new systems is one of the most time and money consuming aspects of the modern organization.

The term "legacy portfolio management" describes a process where Montana will look at its legacy applications as assets, and then will apply a disciplined approach to managing them. Terms like "legacy renewal" and "legacy modernization" capture part of this process, but not all of it. "Renewal" is one approach Montana may choose to apply to one or more applications in its legacy portfolio, but it may also decide to leave legacy applications alone, replace then, or simply discontinue their use.

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Cost overruns, serious delays, functional inadequacy and even complete failure are possibilities in legacy applications renewal. Montana cannot underestimate the complexity of legacy renewal and it cannot underestimate the potential cost to the state for failure to manage legacy applications in a systematic way.

ITSD presented a framework to the Information Technology Board (ITB) to enable the state to manage its portfolio of legacy applications, and by extension, all applications. The state will identify legacy applications that present risks needing immediate attention and further categorize legacy applications by timeframes for remediation or replacement. The State Chief Information Officer has presented to the ITB an Application Portfolio Management strategy to be implemented by the CIO, the State Information Technology Services Division (SITSD), and Montana state agencies.

GIS Governance (Base Map Service Center)

The state needs to improve the management of the State of Montana's thirteen geospatial framework layers. To accomplish this, the Montana Land Information Advisory Council (MLIAC) created the 2006 GIS Common Operating Picture (COP) Report for the State CIO. To ensure timely and accurate information, a federated system, with independent entities forming a cohesive data sharing system for creation and sharing of information, needs to be implemented. The federated system needs to coordinate between members, develop and implement standards and policies, resolve disputes, and minimize duplication and redundancy. The MLIA Council approved the BMSC concept in March 2008. The GIS Bureau was renamed to the BMSC Bureau. There is no request in the FY12/13 governor's budget.

GIS Base Map GF Funding

The state needs to have a reliable funding source for the Base Map Service Center (BMSC) and Montana Spatial Data Infrastructure (MSDI). The BMSC provides geospatial products and services to the federated enterprise in various jurisdictional boundaries. The BMSC also supports the MSDI by providing assistance to the non-state agencies. A funding request was endorsed by the MLIA Council and the Montana Association of Geographic Information Professionals (MAGIP). There is no request within the FY12/13 governor's budget proposal.

MLIA Funding

The Legislative Services Division has offered up the Montana Land Information Act (MLIA) fund balance as a potential source of GF revenue. However, maintaining a fund balance is normal and a required outcome of the program. Funds are collected in one fiscal year, awarded and obligated in the next, and reimbursed over one or more years.

Funds cannot be obligated (awarded to grantees) by Department of Administration until they are deposited in the MLIA Fund by the counties; therefore, grant awards are not made until the fiscal year following the "collection" year. Funded project timelines generally start July 1st and normally (extensions are sometimes authorized) end June 30th of the following year. Reimbursements follow strict deliverable timelines that range from monthly to yearly.

It has been communicated to the Legislative Fiscal Division and the Legislature that there is no appreciable MLIA fund balance. Absorbing the MLIA funds will result in unfunded grant contracts with state, local, and tribal governments, and elimination of the grant program for the next fiscal year.

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