



# Wyoming State Biennial Technology Plan

Updated January 2009



**OFFICE OF THE CHIEF INFORMATION OFFICER**

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## Introduction

The purpose of this document is to provide for an updated Biennial Information Technology (IT) Plan for the Executive Branch of Wyoming State government as required in [Wyoming Statute 9-1-222 \(a\) \(1\)](#).

This plan is an updated document that provides a framework for the State's technology operations for FY 2009 and FY 2010. Some initiatives are funding dependent and may not be able to be implemented without additional funds.

## Principle Focus

Identify, support, fund and implement technology enterprise-wide utility services and solutions.

- Email
- Network Management
- Technology Replacement Program (TRP)
- Geographical Information Systems (GIS)
- Project Management
- Information Security
- Technical training
- Electronic Document Management Systems (EDMS)
- Disaster Preparedness & Recovery
- Increase efficiencies
- Reduce expenditures
- Implement Performance Management

## About the OCIO

Detailed responsibilities are contained in [Appendix A: Detailed OCIO Responsibilities](#)

The Chief Information Officer (CIO) is accountable for directing the information and data integrity of the State enterprise. The CIO is responsible for providing a leadership role in the day-to-day operations of information technology (IT) functions, as well as providing strategic leadership and direction as the enterprise grows.

Balancing sustainability and need, the CIO often provides the State's IT agenda and makes or facilitates the State's ultimate direction of IT. The CIO accomplishes this mission through direct oversight of the central technology division, in-depth coordination with agency Directors and Elected Officials, and leadership participation with various committees and commissions.

The basic mission of supporting agencies, departments and other state entities with the best possible technology solutions available remains paramount.

## 1. Enterprise Email

\$0.00/\$0.00

Implementing a single email solution for the enterprise remains the number one initiative in the Executive Branch's technology plan. The solution is an updated plan to a previously approved business case and an approved 2006 policy that provides for one email system for the Executive Branch. This solution will solve some problems while providing increased services and support into the future, all with a reduced overall price tag.

The previous approach was a measured and slow migration of existing email systems into one for the State. This approach would have extended email conversions over many years and, in addition, there were insufficient revenue and resource allocations provided to be successful. Since that time, more agencies have built internal email infrastructure, further permeating the duplication of associated email costs.

The email business case was a result of substantial research into the current state of email systems, the risks and requirements of email communication systems and the absolute necessity of a robust and fully supportable shared email system for all agencies in the State of Wyoming. Currently, each agency has approached email solutions on an ad hoc basis. This has led to a situation where the state has approximately 17 agencies managing internal email systems and centrally managed email for 39 agencies. There are two separate email systems in use; both are being used on an agency managed basis and on a centrally managed basis. This further compounds the difficulty of maintenance, support and cost management. The state now has approximately 90 servers handling email systems, we anticipate that number will be closer to 10 or less after conversion and consolidation.

## 2. Project Management & Accountability

\$0.00/\$0.00

We improved visibility for Information Technology projects. We are now tracking the status of a variety of projects across agencies. We reclassified an existing position and hired an "Enterprise Project Coordinator" to work with agencies in managing technology projects. We provided 2 FTE staff resources to help an agency address vendor deficiencies and coordinate a recovery plan with our federal partners.

The State's IT community has a governance model that is driving performance and accountability throughout the enterprise. As the governance model matures, it has become apparent that there is an immediate need to track and measure progress on the approximately \$214 million in biennial technology spending across the entire enterprise. This includes staff hours, which projects are receiving time, and determining whether these are the current top priorities. In the last three legislative budget sessions, the Legislature appropriated funds for 38 major IT development projects. A project management function is essential to provide the appropriate resources, oversight, and accountability to the Governor and Legislature for these funds. Initially, tracking and measuring will focus on: Budget and Management, Business Planning and Project Portfolio Management, Project and Resource Management, Collaboration and Knowledge Management.

We will need funding to support project reporting tools for the Executive and Legislative branches to facilitate the efficient review of IT investments in the future.

### 3. Information Security

\$0.00/\$0.00

During the first two weeks of November 2008, there were over 140,000 electronic and hardcopy records lost or compromised through security breaches. Laptops were lost or stolen, sensitive data was inadvertently posted on web sites, backup tapes were stolen or lost, and documents with medical information, privileged client attorney communications, and child abuse materials were found in trash containers. This snapshot of security beaches involved only 12 government and educational agencies. We have reclassified an existing position and hired an “Enterprise Security Coordinator” to work with agencies in managing security concerns. We have produced several notices to agency directors and elected officials on IT security responsibilities and specific areas of concern. We have published and approved 17 security policies through our IT governance community (state agencies) (2 were published in 2006). We sponsored the State’s participation in the Cyber Security Program, producing and distributing security awareness literature and creating a web site for citizens and employees. The Governor proclaimed October as Cyber Security Month.

We will need funding to support security improvements for the State, including 3<sup>rd</sup> party audits and assessments, identity and risk mitigation tools, and resources to deploy security solutions.

### 4. State Video System Usage

\$0.00/\$850,000.00 (est.)

The State video conferencing system remains underutilized. ITD’s current charge back and cost-recovery funding model appears ineffective. The supplemental budget request was to replace lost revenue from the University of Wyoming (UW) as they moved to build and maintain a separate infrastructure. The Community College Commission recently requested the Governor’s help in developing solutions to improve the effectiveness and efficiencies of state resources in online learning, video infrastructure and Internet Protocol (IP) communications. We hosted the first cross-agency work group on video infrastructure and online learning systems. The Governor appointed a task force to develop a unified solution for the enterprise. The task force is comprised of the University of Wyoming, Department of Education, the Governor’s Office and the Office of the CIO. The Governor recommended \$300,000 in the 2009/2010 supplemental budget for the task force to assess the State’s needs and develop this comprehensive solution. This item will be reported by the Video Task Force in the future.

### 5. Technical Training/ Career Path

\$0.00/\$0.00

We continue to review agency IT training requests during the budget process. We have encouraged agencies to coordinate IT training through the governance structure to increase awareness and coordination. Career path plans will be reviewed once the current Human Resources classification and compensation study has been completed. We anticipate reviewing changes to provide for the review of IT position changes by the office of the CIO to allow for consideration of any changes on other agencies that have similar IT positions. Funding will be required to instate a robust technical training program and career path architecture for the State’s IT workforce.

## 6. Geographical Information Systems

\$0.00/\$0.00 (est.)

We continue to work with the GIS Oversight committee, comprised of the Governor's appointees: Brenda Arnold, County Assessor, Laramie County; Gary Collins, Geologist, Wind River Reservation; Jim Gazewood, Petroleum Engineer, Wyoming Bureau of Land Management; Jeff Hostetler, Vice President/CIO, Trihydro Corporation; and Pete Jorgensen, Representative, Wyoming House District No. 16. The State CIO is a non-voting, ex-officio member. We have facilitated the collection of different GIS layers between agencies through the Strength & Streamlining project, which is designed to make it easy for businesses and citizens to navigate the permitting process. We anticipate that the GIS position will help agencies coordinate GIS data layers, consistency, inventory, disaster recovery, and the effective maintenance and sharing of this critical state resource among all agencies and the public.

## 7. Improve the State Network

\$0.00/\$0.00

The State requires a comprehensive review of its network and telecommunications infrastructure. The current state network is not documented and is a result of an 'ad-hoc' build out over many years. The need for security, bandwidth, capacity and disaster recovery has outgrown the current network infrastructure. We cannot continue attempting to maintain the critical infrastructure of the state without a plan.

We need a well-documented blueprint of the network infrastructure for appropriate bandwidth, security, and capacity. This comprehensive analysis would be designed to document the state's current network topology, tell us what we need to do to maintain the current design, and, most importantly, what we should be designing in the future. The report would detail costs, including capital, maintenance and any recommendations for contract services. Funding is required to complete such an assessment.

## 8. Electronic Document Management

\$0.00/\$0.00

"97% of all information is stored electronically, 3% is converted to paper form. Given the prevalence and potential importance of electronic information in a growing number of cases, the federal judicial system placed electronic information on the same footing as paper information via the e-discovery amendments. Therefore, it is likely that e-discovery requests will become more prevalent as well and State CIOs will increasingly be faced with finding and retrieving all types of information stored electronically within the state's vast reaches."

The State will require funding to implement an enterprise Electronic Records Management System (EDMS).

## 9. Performance Management

\$0.00/\$0.00

We need to measure what we do. If a citizen cannot access information or services from the State, we are not meeting customer service needs. If an agency cannot get their problem resolved quickly, in order to provide services to citizens, we are not meeting expectations. If we cannot keep the systems that agencies and citizens depend on working when they need them, at least 99% of the time, we are not meeting expectations. Technology projects must be measured against the time, budget and intended results to determine how effectively we are using government resources. If projects are not delivered on time or do not deliver the intended improvements, we are not meeting expectations.

We successfully implemented performance measures in key technology delivery areas, including Customer Service, System Availability, and Email Security (SPAM) from the Department of Administration & Information's (A&I) Information Technology Division (ITD), as well as IT contracts, proposals, bids, purchase requests and other document turnaround times from the Office of the CIO. We have successfully collected and reported general key indicators for more than 12 months.

Of the almost 10,000 customer service requests, over the last 10 months, [99% of requestors indicated they were satisfied with their service](#). Tracking system availability, which includes Network Service Availability, Voice Services, Video Services, Email Services, IT Financial Services, Computer Services, and EGov Services, ITD achieved an [availability rate of 99.40% over the past year](#). Securing email and blocking SPAM, ITD people and systems blocked 260 million emails from getting to employees inboxes, [this saved 303,594](#) hours, if employees spent 4 seconds deleting each of these emails. IT document review turnaround by the OCIO for agency customers was [reduced to an average of less than 2 days](#).

While we have been able to manually collect some important performance measures, we will need funding to implement a system to track and report efforts automatically for the state. Performance reporting systems are critical to efficiently determine the value of programs and investments.

## 10. Technology Replacement Program (TRP) \$0.00/\$0.00

The TRP is the result of a series of events, some agencies were leasing and some agencies were purchasing computer equipment. In the 2008 General Session, the Joint Appropriations Committee (JAC) requested a formal recommendation from the Governor on a solution. The recommendation to purchase was delivered in June 2008.

We have created a steering committee to develop the implementation and budget requirements of the TRP for BY 2011/12. Many different agencies are represented on the following subcommittees: software, hardware configurations, finance, logistics, and RFP/contract development. We are currently developing a series of options to mitigate the challenges associated with implementing a statewide computer purchasing solution that heretofore has been managed differently agency-by-agency.

## 11. Disaster Planning & Recovery

\$0.00/\$0.00

The dependence on state computer systems to provide services to the citizens of Wyoming has become critical. There are few services that can be provided today without some reliance on information systems and technology. It is time for the State to coordinate business and service continuity plans across all agencies.

We need to determine what critical applications are in use and where they are located. We need a comprehensive review of existing data center space, utilization and capacity, to determine inventories and project future data center needs. Then, we will plan to begin moving assets into protected data center facilities.

We require a comprehensive agency-by-agency inventory of all critical business applications and appliances. This analysis may result in the need to acquire additional protected center space for the state, but would also allow for consolidation of requirements, thereby increasing cost-effectiveness, efficiencies while reducing carbon emissions.

Funding is required for a comprehensive assessment of critical business applications and how the state can efficiently and effectively provide for solid disaster recovery.

## 12. Census/Redistricting Support

\$317,858/\$0.00

With the BY 2009/10 appropriation, we received \$317,858.00 “for the purpose of purchasing computer hardware and software and other support and contractual services necessary to provide geographical information system (GIS) support for the state's implementation of the federal bureau of the census 2010 decennial census and subsequent legislative redistricting plan.”

We received the data to be updated for the 2010 census. The Census Bureau had identified only three counties that are in what they consider “final form” for us to use to make the updates. The remaining 20 counties may have “feature distortions” and are still being reviewed to find and clean up any “distortions”. These 20 counties will be re-delivered to the State in mid-February 2009. Updates for the three “clean” counties are due back to the Census Bureau in late January 2009 (120 days). The other 20 updated counties will be due May 1, 2009.

The next steps in this process are to continue gathering road data for the other 20 counties; update training on the Census Bureau’s software; and continue to make updates to the Census data.

As the first three counties are completed, it makes sense to continue to work on updates for the remaining counties. It will determine if the “distortions” the Census Bureau is concerned about actually affect the updates. The Census Bureau has asked us not to submit updates for the counties that may have “distortions” until they have provided us with the “clean” data in February. The data is being reprocessed by the Census Bureau at this time.

No major issues are anticipated that would prevent us from meeting the U.S. Census 2009 deadline for the State of Wyoming information.

### 13. Enterprise Architecture

\$0.00/\$0.00

Enterprise Architects use various business methods and tools to understand and document the structure of an enterprise. In doing so, they produce documents and models, together called artifacts. These artifacts describe the logical organization of business strategies, metrics, business capabilities, business processes, information resources, business systems, and networking infrastructure within the enterprise.

A complete collection of these artifacts, sufficient to describe the enterprise in useful ways, could be considered an 'Enterprise' level architectural description, or an Enterprise Architecture, for short. This is the definition of Enterprise Architecture implied by the popular [TOGAF](#) architectural framework.<sup>1</sup>

Enterprise architecture (EA) drives change within IT and the business. The right structure and the right people are necessary to facilitate the development of the right future-state architecture and ensure its effective adoption.

Most states have enterprise architect staff and functions. Research indicates the function is principally focused on the information repositories and information flows that will meet the requirements of the business strategies and business processes today and into the future. Rather than have a mix of various technologies deployed in various agencies that may not be compatible, an enterprise architect can help drive collaboration across the enterprise. This will avoid costly mistakes in developing technologies that are not able to work together.

Funding is required for a comprehensive enterprise technology architecture that can effectively help agencies line up business strategies using technology solutions that work well together and are compatible going forward.

### 14. Efficiencies / Energy Management

\$0.00/\$0.00

In 2007, we generated a message to state employees about powering off PCs and office equipment. In 2008, we generated more messages concerning the energy consumption of IT equipment and how employees can make a difference. We also delivered several key reminders to agencies about the availability of video conferencing capabilities in the state, and how taking advantage of these resources can improve employee safety, reduce our carbon footprint, and save valuable in-state travel dollars. We are also in the process of developing policies to address the purchase of energy efficient computer equipment and other technology devices, which may become part of the TRP listed above.

Gartner, Inc, and the National Association of State Chief Information Officers agree on best practices including: establishing desktop standards that require energy efficiency, including e-waste and other IT- related products; the recycling of old computer equipment to reduce the digital divide; data center consolidation; web and/or video conferencing; increased citizen services on the web; refreshing desktops regularly; increased printer management (types and numbers); and employee education.

Funding is required to implement automatic shut down or sleep features across the state. Many agencies have local controls and firewalls that prevent the state from implementing systems that can reach all employee desktops. There will be costs associated with reengineering previously deployed, agency-centric solutions.

<sup>1</sup> [http://en.wikipedia.org/wiki/Enterprise\\_architecture](http://en.wikipedia.org/wiki/Enterprise_architecture)

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**15. Enterprise Technology Fund****\$0.00/\$0.00**

We have an opportunity to provide a minimum level of investment in our technology infrastructure to support current agency and enterprise requirements and those into the future. We, the State, have built and deployed applications without updating the current infrastructure to support what we put into place. The resulting stress on existing infrastructure increases downtime, e.g. more and longer outages, difficult troubleshooting, and overall lack of responsiveness to our citizens and agency customers. We have not kept pace with the infrastructure changes necessary to support operations across all agencies, including the State's network, data center facilities, disaster recovery solutions, data storage, electronic document management, video network, security, GIS, energy management systems, and shared application environments. These situations force agencies to request funds to independently build, maintain, and support infrastructure components that *should* already be available as an enterprise utility. Agencies should be able to focus on their core business operations, not utility services. Additionally, we would encourage agencies to request use of these funds when they can demonstrate that there is a shared solution available or enterprise need.

Other than setting funds aside, remaining budget amounts in the 400 Series funds are returned to the General Fund at the end of the biennium. The returns result in a lost opportunity to use already approved and allocated funds toward enterprise technology priorities. We should be able to leverage this pre-approved but unused 400 Series funding toward meeting those enterprise demands. If that is deemed problematic, then we need to create an investment fund for technology investments.

We are already adding the appropriate infrastructure costs to each agency project, valued at \$200,000 or more, as projects transit the approval process, to ensure we are able to support the state in the future. However, we need to create a fund to manage enterprise technology initiatives regardless of the single project price tag.

Comparison of the State of Wyoming's technology initiatives with the top ten priorities of State CIOs across the country. (<http://www.nascio.org/publications/index.cfm#108>)

*Initiatives listed are in no particular order.*

Ref.	Areas of Interest	Wyoming Initiatives Jun 2007	Wyoming Initiatives Jun 2008	U.S. CIO 2008 Priorities	U.S. CIO 2009 Priorities
1	Enterprise Email	✓	✓	6	1
2	Project Accountability	✓	✓	8	3
3	Information Security	✓	✓	2	4
4	State Video System Usage	✓	✓	9	2
5	Technical Training/ Career Path	✓	✓	10	1
6	Geographical Info Systems	✓	✓	6	2
7	Improve the State Network	✓	✓	1	1
8	Electronic Doc Management	✓	✓	4	5
9	Performance Management	✓	✓	n/a	8
10	Technology Replacement Program	n/a	Legislature	n/a	n/a
11	Disaster Planning & Recovery	✓	✓	3	1
12	Census/Redistricting Support	n/a	Legislature	n/a	n/a
13	Enterprise Architecture	✓	✓	1	1
14	Efficiencies/ Energy Management	✓	✓	1	7
15	Enterprise Technology Fund	✓	✓	n/a	1,2

## Appendix A: Detailed OCIO Responsibilities

- Supervises the State's central IT Division.
- Develops a biennial Information Technology (IT) plan for the Executive Branch.<sup>2</sup>
- Implements and maintains the IT governance program.<sup>2</sup>
- Establishes review criteria for IT projects and major purchases.<sup>2, 3</sup>
- Develops and implements recommendations for IT resources.<sup>2, 3</sup>
- Reviews and make recommendations to the Governor for IT budget requests.<sup>2</sup>
- Adopts IT policies and standards and ensures agency compliance with the policies and standards.<sup>2</sup>
- Recommends IT procurement improvements.<sup>2</sup>
- Develops and promotes IT training programs for all branches of government.
- Encourages IT coordination, information sharing and collaboration among all branches and levels of government in Wyoming.
- Enhances geographic information systems (GIS) coordination among all governmental users of GIS.
- Enacts rules to implement government electronic transactions.
- Establishes standards for all state agencies conducting business electronically.
- Establishes parameters for ensuring security in conducting state agency business electronically.
- Establishes authorized methods and requirements for conducting business electronically and authenticating identifications.
- Prescribes a procedure for certification by a state agency of information transmitted electronically.
- Prescribes a procedure for converting information transmitted electronically to paper and certifying the paper copy for persons requiring paper copies.
- Develops and provides computer and data processing services to the judiciary, the legislature and agencies.
- Upon request of any state agency, provides information and recommendations regarding the installation and acquisition of computer and data processing equipment, the qualifications of data processing personnel and software systems required by the agency.
- Establishes and promulgate rules and regulations governing the use and funding of telecommunications services, equipment, software and networks.
- Develops recommendations for a current and long-range telecommunications transport service plan for state government and higher education involving telephone, radio, microwave, facsimile, closed circuit television, teleconferencing, interactive educational training, public radio, public television, data communications, transmission circuits, fiber optics, satellites and cellular radio and the integration of these mediums into applicable telecommunications networks.
- Administers the approved current and long-range plan for telecommunications and coordinates the telecommunications transport service network.

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<sup>2</sup> Exempted in statute are the Community Colleges and University of Wyoming.

<sup>3</sup> Exempted in statute are the Departments of Game and Fish, and Transportation.