Legislative Branch Computer System Plan

2015 Biennium

A Report to the 63rd Legislature
From the Legislative Branch
Computer System Planning Council
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Introduction

The Legislative Branch Computer System Planning Council is pleased to present its 2015 biennium computer system plan for managing the Legislative Branch's substantial investment in Information Technology (IT). This plan will provide direction in using IT resources to ensure the maximum return on this investment while best meeting the needs of the Legislative Branch.

The chapters that follow discuss Information Technology planning in the Legislative Branch, the business of the Legislative Branch, the Branch's current IT organization and IT environment, and address the strength and weaknesses of the Branch. In addition, the plan presents a proposed Branch IT budget for the 2015 biennium and outlines issues to be addressed in the modernization plan. Questions about the computer system plan may be directed to Darrin McLean, Susan Fox or Hank Trenk at 406-444-3064 or dmclean@mt.gov, sfox@mt.gov or htrenk@mt.gov.

Information Technology Planning in the Legislative Branch

This chapter provides background information about Information Technology (IT) planning in the Legislative Branch. Topics covered include statutory planning requirements for the Legislative Branch, the IT organizational structure within the Branch, and the Branch IT planning process.

Statutory Planning Requirements

In 1989, the Montana Legislature adopted a comprehensive set of laws governing IT planning in the Legislative Branch (Title 5, chapter 11, part 4, Montana Code Annotated (MCA)). The purpose of these statutes is "to establish a mechanism for computer system planning encompassing broad policy needs, long-term direction for computer use, and the effective implementation of a detailed plan for the legislative branch" (5-11-401, MCA). The law further provides that the purpose of the computer system plan is:

- to ensure coordination of information system decisions so that the overall effectiveness of the Senate, House, and legislative agencies may be improved; and
- to enhance coordination of Legislative Branch systems with Executive Branch systems whenever possible.

The Legislature created the nine-member Legislative Branch Computer System Planning Council (Planning Council) to develop and maintain a Branch computer system plan. Members of the Planning Council include:

- the Secretary of the Senate or another representative of the Senate designated by the President;
- the Chief Clerk of the House or another representative of the House designated by the Speaker;

- the Sergeants at Arms in the two houses or another representative of each house designated by the presiding officer of that house;
- the Executive Director of the Legislative Services Division (LSD), who chairs the Planning Council;
- the Legislative Auditor;
- the Legislative Fiscal Analyst;
- the Consumer Counsel; and
- a person designated by the Director of the Department of Administration to represent the Department's IT responsibilities, who serves as a nonvoting member.

In developing and maintaining the Branch computer system plan, the Planning Council is required to:

- review existing systems that are candidates for automation;
- review existing automated systems that could be improved or integrated with new applications;
- develop and maintain a description of Branch functions or services that would, through application or improvement of computer technology, provide better service;
- develop and maintain a ranking of needs, considering effectiveness and cost of alternative systems; and
- develop and maintain recommended Branch system standards and standard or custom software and hardware solutions.

By law, the LSD is required to provide technical support to the Planning Council. Statutory duties related to this support role include:

- analyzing existing and alternative systems;
- providing technical solutions and advice;
- apprising the Planning Council on industry developments;
- maintaining a liaison with the Executive Branch; and
- assisting in purchasing of supplies and equipment.

After developing a Branch computer system plan, the Planning Council must present the plan to the Legislative Council for adoption. Also, in order to fulfill the requirements of 2-17-518, MCA, the Planning Council must adopt, as part of the computer system

plan, "adequate rules for the use of any information technology resources" and forward them to the Legislative Council for approval.

Legislative Branch IT Planning Structure

The Planning Council is supported by several entities involved in developing, implementing, and maintaining IT resources within the Legislative Branch. These entities include the Office of Legislative Information Technology (OLIT), the Legislative Executive Review Board (LERB), the Technical Planning Group (TPG), and the Legislative Enterprise Architecture Program (LEAP). A description of each group is contained in Appendix A.

The Legislative Branch also coordinates regularly with external organizations such as the Executive Branch, the Judicial Branch, the Montana University System, and local governments. This coordination is typically done through active participation on the following external IT groups:

Information Technology Board (ITB). The ITB, created by the 2001 Legislature, provides a forum to guide state agencies and local governments in the development and deployment of intergovernmental IT resources. The ITB also advises the Department of Administration on statewide IT standards and policies, the state strategic IT plan, major IT budget requests, and rates and other charges for services established by the Department.

Information Technology Managers Council (ITMC). The ITMC, consisting of state IT managers, reviews statewide IT issues, provides feedback regarding information management policies, reviews opportunities for the application of new information processing technology, and participates in statewide IT planning efforts.

Planning Council Meetings

To comply with its statutory obligations, the Planning Council met four times during the 2011-12 interim. The meeting agendas, minutes, and related materials are available for review on the Legislative Branch website at http://www.leg.mt.gov/css/Committees/interim.

The Business of the Legislative Branch

This chapter describes the organization of the Legislative Branch and presents the mission of the Branch entities. It also discusses the functions and role played by IT in the Branch's business and the business goals of the Branch.

Organization

The Montana Legislature is one of three branches of state government created by the Montana Constitution. The people of Montana express their will directly through the Legislative Branch, which enacts laws, levies taxes, and appropriates revenue received from those taxes to various agencies of government for public purposes.

The structure and function of the Legislative Branch are prescribed by constitutional law, statutes, and legislative rules. The Branch consists of entities as provided in 5-2-504, MCA. The principal entities of the Branch are the Senate and House of Representatives (which together compose the Legislature), the LSD, the Legislative Fiscal Division (LFD), and the Legislative Audit Division (LAD).

Missions

The missions of the consolidated Legislative Branch entities are as follows:

- The mission of the **Legislature** is to exercise the legislative power of state government vested in the Legislature by the Montana Constitution.

- The mission of the **Legislative Services Division** is to provide research, reference, legal, technical, information technology, and management and business support services to the Senate, House, and other divisions of the Legislative Branch in support of effective and efficient operation of the Legislative Branch and to support the mission of the Legislative Council.
- The mission of the **Legislative Fiscal Division** is to provide the Legislature with objective fiscal information and analysis relevant to Montana public policy and budget determination.

- The mission of the **Legislative Audit Division** is to conduct independent audits, as provided by law, and to provide factual and objective information to the legislative and executive managers of the public trust.

Functions

Legislative responsibilities include areas such as lawmaking, appropriation, taxation, oversight of the Executive Branch, and representation of local interests. The primary function of the Legislature, however, is lawmaking, which consists of the drafting, consideration, voting, and codification of bills. Other responsibilities of the Legislature that support its primary function include research, fiscal analysis, legislation and policy development, information distribution, oversight, and business and administrative services. A description of these functions follows.

Research

The LSD, LFD, and LAD each provide nonpartisan research services to the Legislature. The LSD staff provides draft bills for the legislators and committees. They also provide legal and policy research and analysis, research reports, and a reference library for the Branch. The Legislative Environmental Policy Office, within the LSD, provides research and analysis of environmental issues. The LFD

provides research support in matters related to state budgeting. The LAD provides research and analysis on audit issues.

Fiscal Analysis

The LFD provides an independent analysis of the Governor's budget. It also conducts research and analysis of revenue and expenditure trends and provides reports on the impact of economic changes on both enacted and proposed legislation. By performing fiscal analysis and by assisting legislators in understanding agency budgets, the LFD helps the Legislature make responsible decisions about the collection of state revenue and the subsequent investment in, and allocation to, state government programs. Also, during legislative sessions, LAD assists the Legislature by gathering and analyzing information relating to the fiscal affairs of state government.

The LSD, the Senate and House staff, and the LFD provide staff support to the Legislature as it proposes, debates, and makes decisions on legislation. LSD research and legal staff support standing committees and LFD supports the appropriations and finance committees. LSD staff support the data input, introduction, engrossing, enrolling, and codifying of bills. Senate and House staff members provide clerical support to committees, support the flow of bills through the Senate and House, and generally support the operation of the Senate and House.

Information Distribution

All legislative divisions participate in the distribution of information to the Legislature and the public. For example, legislative audit reports are available to the public, as are budget analysis, legislative fiscal, and research and interim committee reports. During a session, the Data Distribution Center in the LSD distributes bills, amendments, resolutions, status reports, and journals in printed format to the

Legislature and the public. The Legislative Information Office provides information to the public on the legislative process, the status of legislative proceedings, and the daily calendar of events, both directly, through the Internet, and by telephone. The OLIT supports the systems that allow the creation and maintenance of electronic information and that make electronic access to bill status and text possible. The Legal Services Office, the Central Services Office, and the OLIT are responsible for preparing and distributing the MCA, legislative rules, journals, annotations, and other documents related to the proceedings of the Legislature.

Oversight

The LAD provides oversight by regularly auditing the functions of state government and gives the Legislature and the public an independent analysis of the effect of laws and rules. These reviews allow the Legislature to analyze whether the Executive Branch complies effectively and efficiently with the laws and policies of the Legislature. In addition, the LAD is required by federal and state law and bonding agents to issue independent audit opinions on the fairness of the financial statements and the results of operations of state government agencies and of state government as a whole. The LAD also investigates reports and allegations of waste, fraud, and abuse in state government. The Legislative Environmental Policy Office serves in an oversight capacity for state government on environmental issues. The LFD is statutorily charged with oversight responsibility for the appropriations process, revenue, and other fiscal policy issues. The LSD has agency monitoring responsibilities and administrative rulemaking review incorporated in support of permanent interim committees.

Business and Administrative Services

The Central Services Office of the LSD provides purchasing, personnel, legal, and accounting services for the entire Legislative Branch. These services help to efficiently expedite daily business issues and needs of the Branch. Also included in the function is the general administrative support role that LSD, LFD, LAD, and the House and Senate provide to the Branch.

The Role and Purpose of Information Technology in the Legislature's Business

The Legislature is, at its core, an information processing organization. The businesses of lawmaking, analysis, and oversight are all centered on the ability to process and disseminate information. In this information age, enhancing the ability to gather, process, and distribute increasing amounts of legislative information quickly and accurately is a necessity.

Technology is the primary tool used by the Branch to collect, analyze, and disseminate information. Therefore, the Legislature is dependent on its technology. When deciding how and for what purposes to use technology, it is critical to understand how it is incorporated into the legislative branch functions. There are extraordinary opportunities for applying technology to an organization whose main product is information. The Legislative Branch recognizes this and continues to invested in, apply, and realize significant benefits from information technology.

Legislative Enterprise Architecture Program

In order to facilitate proper business-based technology planning and decision-making, the Branch, in accordance with best practices, has established an enterprise architecture program. The Legislative Enterprise Architecture Program (LEAP) consists of a system of information and processes that supports sound technology decisions, plans, and operations in the Branch.

The role of the LEAP Office is to:

- Creating and maintaining a common business driven vision shared by the business and IT communities of the Branch
- Improving decision making in planning and operations by providing better information
- Improving governance by facilitating process maturity, communications, and enterprise integration
- Enabling efficiencies by lowering complexity, shortening delivery timelines and eliminating unnecessary costs.

The foundation upon which the governance of technology will rest is the set of LEAP Principles. The principles, developed through a participative process involving OLIT and each of the Branch's other business units, are statements that guide the Branch's decisions and actions related to information technology. They incorporate the nature, priorities, values, and direction of the business into a set of statements which the Branch will consider in its technology planning and operations activities.

LEAP Principles

The following 12 principles have been vetted and approved by the Legislative Executive Review Board, the TPG, and the Computer System Planning Council. They serve as the foundation for the Branch's planning and management of

technology and will be incorporated into the Branch's governance processes. The rationale and implications associated with each principle is listed in Appendix B.

LEAP Principle 1:

Organize information to enable its discovery and improve its meaningfulness.

LEAP Principle 2:

Protect information in accordance with its business value, sensitivity, and longevity.

LEAP Principle 3:

Invest in automation of business processes and modernization of systems to gain efficiency, improve business performance, and/or reduce business risk.

LEAP Principle 4:

Maximize flexibility in the design of business and technology solutions to adjust to change in business and technology environments.

LEAP Principle 5:

Foster openness and participation in the legislative process leveraging technology to overcome Montana's geographic challenges.

LEAP Principle 6:

Maximize the exchange of quality information by accommodating various media types and technology.

LEAP Principle 7:

Promote the efficient use of resources by communicating and collaborating on policy, business operations, and information systems decisions throughout the Branch as an enterprise.

LEAP Principle 8:

Guide the implementation, use, and management of technology in alignment with the business by setting policy and establishing processes.

LEAP Principle 9:

Foster education, learning, and comprehension of information through innovations in information presentation.

LEAP Principle 10:

Design, implement, and manage information systems with rigor appropriate to the business value of the information.

LEAP Principle 11:

Maintain Branch independence in core business functions.

LEAP Principle 12:

Guard the integrity of all Legislative Branch functions by producing objective non-partisan information.

Current Information Technology Environment

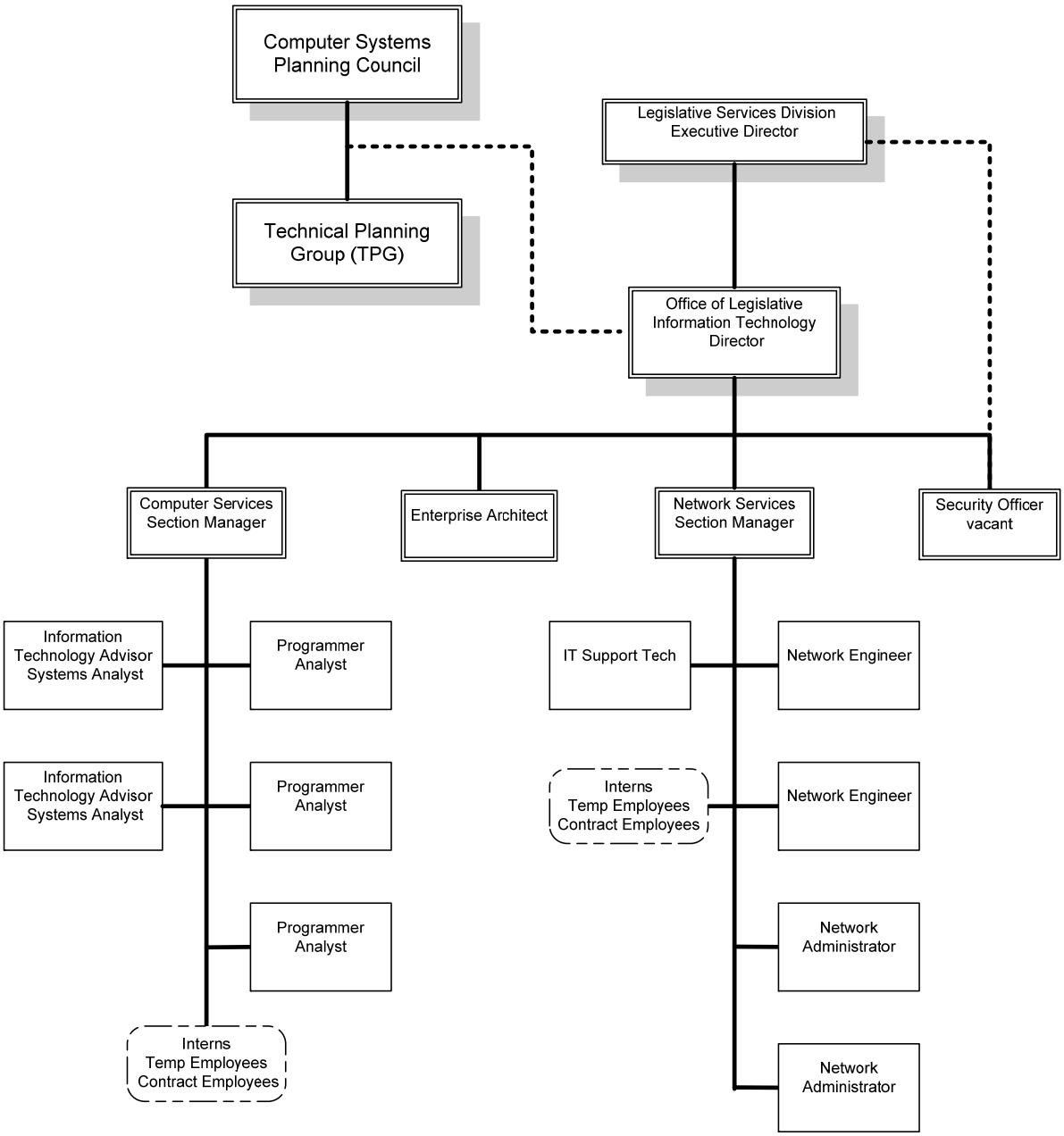
This section summarizes the current organizational and technical environment that supports IT processes and initiatives in the Branch.

Organization

The Legislative Branch uses a centralized internal IT staff for daily operations, developing, implementing, and maintaining the IT infrastructure. Due to the Branches 2-year business cycle, and the operational necessity of not making major changes during a legislative session, the Branch only has 18 months between sessions to make major enhancements. The Branch must also take into consideration that a special session can be called at any time during those 18 months taking away staff time to get infrastructure changes accomplished. The Branch uses external IT resources (outsourcing) for major enhancements and to implement new technology for which the internal IT staff has not been trained. Often, the planned enhancements require more time than the IT staff has available, thus making outsourcing necessary. The Branch also uses external resources for staff augmentation for session buildup and support.

In addition to a computer system plan, an appropriate IT organizational structure is necessary to effectively implement the goals of a plan. The following IT organizational structure has been established:

Montana State Legislative Branch
Office of Legislative Information Technology
June 18th, 2012



Office of Legislative Information Technology

The Office of Legislative Information Technology (OLIT) is organized into four sections, the Computer Services Section, Network Services Section, Enterprise Architecture Section, and the Security Section. The office is headed by the OLIT Director who serves as the Branch Chief Information Officer.

Computer Services Section

The Computer Services Section is composed of six full time employees; one section unit manager, two system analysts, and three programmer analysts. The Computer Services Section develops and maintains computer systems, such as the Legislative Automated Workflow System (LAWS), and the web based services.

Network Services Section

The Network Services Section is composed of six full time employees; one section unit manager, two network engineers, two network administrators, and one IT support technician. The Network Services Section provides day-to-day operational support and engineering support for the computing platform for the Branch.

Enterprise Architecture Section

Enterprise Architecture section is composed of one full time employee, the enterprise architect. Utilizing resources from various other sections within OLIT, a LEAP core team has been established to conduct enterprise architecture business. The Enterprise Architect is responsible for the Legislative Enterprise Architecture Program (LEAP) which guides the Branch with established principles and processes to align Business and information technology decisions.

Security Section

The security section is composed of one full time security officer. The Security Officer is responsible for the security and disaster recovery functions. Also, through this staff, security coordination is provided for information services and relationships

with outside organizations, such as the general public, lobbyists, and other agencies.

The following governance bodies work together to guide and manage the information technology plans, decisions and operations. The roles defined below describe the bodies role as it relates to IT.

Legislative Council

Role: To serve as the Legislature's approving authority for the Legislative Branch computer system plan in accordance with 5-11-405,MCA.

Legislative Branch Computer System Planning Council

Role: To develop and maintain a Legislative Branch Computer System Plan in accordance with 5-11-403, MCA.

LEAP Executive Review Board

Role: To provide executive guidance and decisions to the Legislative Branch regarding enterprise technology issues and investments.

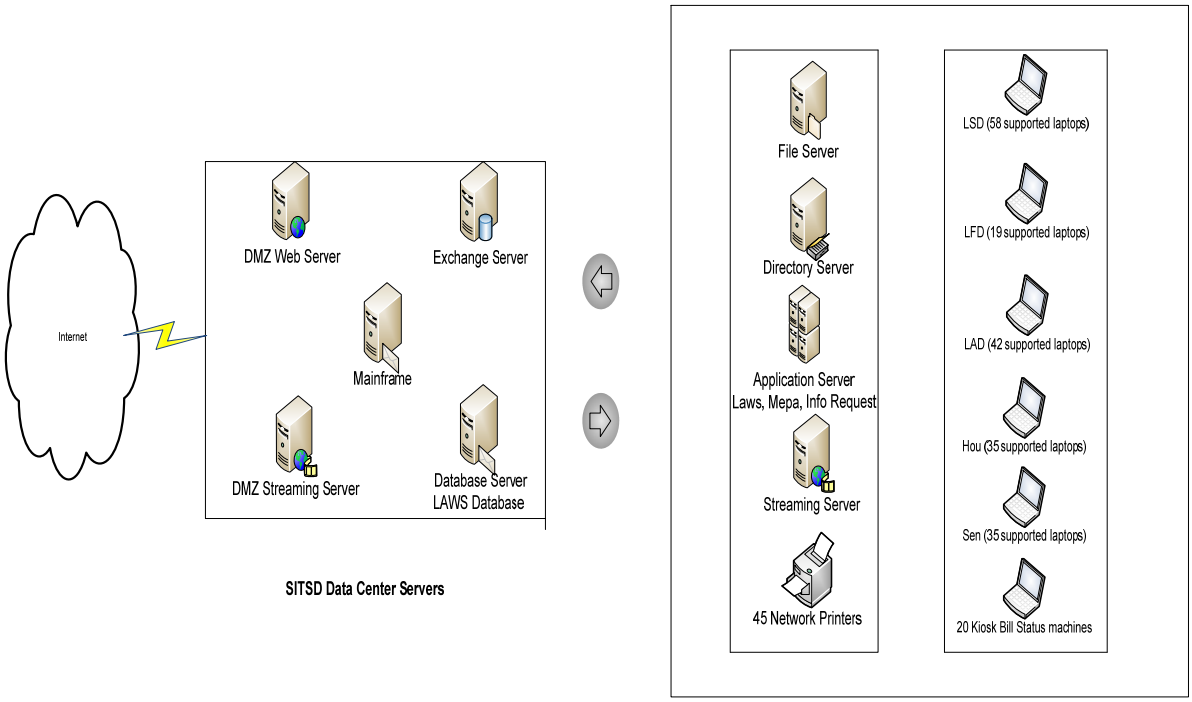
Technical Planning Group (TPG)

Role: To assist the LSD Executive Director and the Office of Legislative Information Technology staff in providing technical planning support to the Legislative Branch Computer System Planning Council.

This group provides advice and guidance to OLIT, legislative division directors, and the Planning Council to ensure that plan goals are achievable, that everyday IT needs are met, and that significant IT issues are addressed. It includes staff responsible for IT services from within each division.

Technical Architecture

The following section depicts the current technology environment.



SITSD Data Center Servers

Legislative Internal Network

Computer Hardware

The Branch has determined that most of its internal computing needs can be met cost-effectively by using microcomputer hardware. Currently (FY 2012-13), there are approximately 250 laptops in the Branch network. These PCs are connected to Branch file servers.

Mid-tier services, provided by the Department of Administration, provide access to large statewide systems, such as the Statewide Accounting, Budgeting, and Human Resource System (SABHRS) and the Montana Budget Analysis and Reporting System (MBARS). The Department of Administration mainframe is used for a few Branch systems, such as the MCA codification and annotations processes.

The Branch also leases Oracle server services from the Department of Administration for the LAD Comprehensive Annual Financial Report System (CAFRS) and the Legislative Automated Workflow System (LAWS).

Web server services are provided to the Branch by the Department of Administration and the Office of Public Instruction. The Legislative Branch also has some of its own web servers.

Computer Software

The Branch has standardized on a defined set of software. These standards are described in the Branch's Enterprise Architecture. The Branch Enterprise Architecture is constantly evolving. Contact the LSD for a current copy.

The Branch has developed and supports the following systems: LAWS (Oracle, web, WordPerfect macros), audit reports, audit billing, office macros, publications management, Capitol group, information request, Branch website, MEPA documents, audit hotline, LAD SABHRS, Banner interface, audit management reports, CAFRS/trial balance, legislative messages, checkout board, revenue estimation, budget book development, audio/video streaming, MCA codification, and many smaller systems.

Telecommunications

The Branch uses a local area network (LAN) for internal communication and the SummitNet wide area network, which is provided by the Department of Administration for communication to the rest of State government and the Internet. These networks provide a fast, efficient pathway for data network traffic within the Branch, to other state government agencies, and to the "outside world". The Branch makes significant use of the Internet for contact with the public through this network. The Branch's voice network and telephone service is administered and managed by STISD.

Present State Assessment of Legislative Information Technology

OLIT continually assesses itself and the state of information technology throughout the Branch in keeping with best practices for continuous improvement and as a baseline for long-range technology planning. The Branch, as with most governmental agencies, is continually facing ever changing technology challenges that involve both internal and external factors. The following narrative describes the Branch's technology strengths, weaknesses, opportunities and threats for the upcoming biennium in terms of people, process, and technology.

People

Overall, the state of technology in the branch can be characterized as well resourced, supported and understood by the various business functions, and well managed to consistently and effectively meet business operational needs. The

centralized structure and largely centralized systems present in the Legislative Branch are conducive to taking advantage of economies of scale. Furthermore, the centralization positions the Branch to implement information sharing, communications, and collaboration across the enterprise. The staff and management in the operating divisions are increasingly "tech-savvy" and are innovative in their approaches to information processing. OLIT is able to keep pace with information technology requests and meet business needs through the technology procurement and solutions development processes.

Organizationally, the Legislative Branch has some fixed challenges as well as some temporal ones. As a matter of fact and as a byproduct of the structure and organization of the entity, the Montana Legislative Branch has separate divisions and chambers serving a set of diverse business needs. While there are always opportunities for collaboration and standardization, the structure and legal charters of each sub-unit may limit or make it more difficult to realize these opportunities. Another related challenge is the complexity and dynamicity of the Branch's governance at the executive level. Each division is governed by a different council/committee, which presents a challenge to the Branch in executing enterprise-wide strategies.

While recruitment and retention of qualified technical staff is a constant challenge that fluctuates with the market, it is especially a concern for Helena-based organizations as the local market is limited. The Branch's technical staffing level has been relatively constant and has been keeping up with the demand for their efforts. Two areas face the possibility of key-personnel retirement in the next several biennia; these are the applications/software area and the OLIT Director. The Branch will be focused on planning for the recruiting, selection, and retention of these and other technology positions in the upcoming biennium. Presently, the Security Officer position is vacant. This position was created and initially filled in response to a risk assessment and best practices recommendation indicating that

the Branch's information security policies, practices, oversight and controls should be served by a dedicated Branch Security Officer. As a result of the restructuring of OLIT and due to shifting priorities and budget concerns the position has been held unfilled for approximately three years however the issues surrounding its creation persist. The Branch is accepting the risk at present and will continually evaluate priorities with the intention of filling the position in the near term. In the meantime, in order to minimize the risks, the OLIT management team members are collectively performing, to the degree they are able, the functions that would otherwise be fulfilled by this role.

Process

The Branch often operates as a small organization does. Technology governance and technical processes of the Branch are relatively immature. Disciplines such as project management, change management, requirements management, technology planning, and the project intake process are all performed with a degree of informality and subjectivity. While this mode has served the Branch adequately, it leaves open the possibility of better decisions and more effective management through process rigor and associated metrics.

As the Branch seeks to address its increasing business and technology challenges, it needs to also increase emphasis on continuous improvement and best practice adoption. The growing demands for electronic processing of information in the Branch will require more complex systems and more sophistication in the management of technology and its integration with the Legislative functions.

The current enterprise architecture process improvement effort has both shed light on this need and has begun the process of addressing it. The first phase of the LEAP program included establishing a set of business principles to guide technology in the Branch, implementing improved governance processes,

documenting the Branch's as-is architecture as a baseline, and developing several technology standards exercising the new processes.

The continuous improvement efforts to improve process maturity will have the goals of increasing decision effectiveness, foster collaboration throughout the Branch, and to improve integration between IT and the business functions. Potential areas of focus include best practices adoption in project management, change management and configuration management. Also the documentation of the enterprise data architecture and application architecture will help with the proper stewardship of data.

Technology

As a result of the Branch's early adoption of technology and eagerness to meet business needs over the course of the past 10-15 years, the information processing solutions throughout the Branch tend to be customized. While customized applications serve specific business needs well, they are more difficult and expensive to upgrade. This has had the effect of slowing the software technology adoption rate in the Branch. Many business processes are being supported by out-of-date software that is expensive to maintain.

There is increased focus on security, disaster recovery, and archiving of the legislative data. Recent national and local events including legal cases, security leaks, and data losses point to a trend of increasing needs for the protection of data including the legal requirements, policies, processes, resources, and technologies involved in proper stewardship. The same eagerness to meet business needs that resulted in customization before appropriate technology and IT staff were available, has also resulted in the Branch using certain technologies in ways and in a scope that exceeds the respective technologies' intended design. As such, the Branch processes some critical enterprise-level data on systems that were meant for

processing personal-computing data. In some cases, the effort to do more and more with the tools on-hand has led to stability and security risks; in other cases the Branch has been missing opportunities to serve its mission better and gain efficiencies offered by more state-of-the-art technical solutions.

The Branch has a cooperative relationship with the Executive Branch's State Information Technology Services Division in that many of the Legislative computing resources are provided as services by SITSD. The hardware platforms on which these systems reside are located at the SITSD data center and are owned and managed by SITSD. The Legislative Branch owns and maintains the database and application software that resides on the SITSD hardware. OLIT monitors and manages the SITSD services and associated costs.

Over the course of the past several legislative session cycles, due to pricing model changes, the costs for these SITSD services have risen and continue to rise. The Branch has either to accommodate these pricing increases or seek alternative means to obtain the computing services. Another issue with SITSD technology provision is the unilateral nature by which SITSD makes technology decisions and configuration changes. This practice has caused interruption to the Legislature's business operations. OLIT is working with SITSD to evaluate options for controlling these costs and improving the overall service through increased communications and coordination.

The Branch's hardware infrastructure consists primarily of computer servers and laptops. Mainframe computing is provided by SITSD. The computing hardware has been diligently kept up to date. As such, OLIT is evaluating the Branch's hardware replacement cycle. OLIT will continue to study alternatives based upon needed computing capacity and capabilities and the desire to minimize costs without compromising capability.

Projects from 2012-2013 Biennium

During each Biennium the members of the TPG, LEAP Core Team, and Division Directors, prioritize projects that need to get accomplished for the upcoming session. Planned projects are those that were recognized at the beginning of the planning cycle the Branch needed to accomplish to support day to day business and technical operations. Unplanned were those that were not foreseen at the start of the planning cycle, but as the biennium progressed business and technical needs emerged that justified mid-cycle action.

Planned

Project/Initiative Name and Description	Project Description
Windows 7 Conversion	The Branch converted the desktop operating system from Windows XP to Windows 7. Windows XP is currently an end-of-life product that Microsoft will no longer support after April 2014. Although this upgrade could have been done next biennium, it was planned and accomplished this biennium because support for Window XP was beginning to waiver. The upgrade ensures the Branch operates on a supported operating system going into the 2013 session as is consistent with best practice and proper environment management.
Laptop Replacement	The laptop replacement project executed the Branch's current desktop computing replacement cycle of replacing half of the branches desktop computers every 2 years (for an overall replacement cycle of 4 years). Typically the year round staff (LSD, LFD, LAD) would receive the new desktop computers with the legislative session staff using computers that are one cycle behind. The project also enabled the Branch to customize the new laptops to the recently implemented Microsoft environment thereby completing the conversion away from Novell infrastructure.
Citrix Upgrade	To keep the Branch's Citrix environment up to date and stable the Branch has upgraded Citrix XenApp 5 to version 6.5, and associated hardware. This project ensures the remote access dependent business operations remain stable and reliable.
SAN Upgrade	The Branch upgraded software and hardware components on both the production and Disaster recovery SAN's, to make them compatible for data replication. This effort improved the efficiency and effectiveness of the data replication process to ensure the Branch's data is safeguarded in the case of a disaster.
Disaster Recovery Upgrade	Due to the conversion from Novell servers to Microsoft servers the Branch converted its existing Disaster recovery solution to match the current Microsoft environment.

LAWS Database Consolidation	This project involved consolidation of 10 similar Oracle databases into 1 database. Doing so greatly reduced support needs by simplifying the LAWS database environment. It also reduced SITSD operating charges by reducing the number of database instances they must service. Finally, this project prepared the Branch for the eventual modernization of the LAWS system.
Audio-Video Phase IV.	This project was the latest of a series of projects to improve and enhance the AV infrastructure and processes. The major goals of this phase of the project were to investigate and implement a replacement for the aging and proprietary AV streaming solution, and to improve the processes for marking, and editing AV files post production. This project followed a rigorous process: 1. Business requirement s meeting with staff 2. RFP process 3. RFP vendor demonstrations 4. Contract awarded After months of coordination the Branch feels that the most capable vendor was selected to help in enhancing and maintain our Audio/Video environment.
Upgrade WordPerfect	This project involved upgrading WordPerfect to a Windows7 compatible version. The scope and quantity of the PerfectScript macros used by the branch made this a significant effort. This upgrade will keep us on supported versions of WordPerfect up until the time it is replaced in the Branch (see Declining Technology Considerations for additional information on the eventual replacement of WordPerfect in the Branch).
Replace MS Access Databases with Oracle-Java	This multi-biennium effort will convert the databases to an enterprise level platform. The legacy database applications throughout the branch were built and maintained using MS Access toolset which presents a number of stability and security risks to the related business processes. Furthermore, the legacy toolset was not conducive to web enabled applications. The Oracle-Java tools will support the Branch's move to a more web-based computing. A big part of this project was training staff in the java development language and environment which will enable the internal resources to support the databases into the future.
LFD - Revise Processes and Applications for Major Publications (study)	With the DoA upgrading MBARS to iBARS there was desire by LFD staff to look at ways to improve the related budget reporting processes they use. During this biennium this effort is only analysis and planning with the idea that future development of reporting processes\systems could be based from this work.
LFD - Revise Processes and Applications for Major Publications (short term fix)	Revise processes and tools used to report budget information from MBARS. This project optimized the process steps and sequencing for the publications process thereby avoiding issues that have caused rework and inefficiencies in the past. The result will allow LFD to regain productivity losses significantly reducing staff hours spent on the publications process.
Reapportionment Support	Analyzed, planned, documented, tested, trained, and all associated activities related to legislative district reapportionment and the special data and tools used in that work.

Fixed Asset Tracking System Implementation	This project will deploy the system developed to automate the inventory of the Branch's fixed assets such as furniture. This will make inventory control of these assets more efficient and accurate.
Branch-wide Calendar Integration	Over time the Legislative Branch has developed many (more than 10) electronic calendars to meet various business needs. As a result of these point-solution calendars, multiple updates are needed for one event change. Often one or more of the calendars has incorrect or out-of-date information leading to miscommunication and lost time. This effort will improve efficiency and accuracy of calendar information throughout the Branch.

Unplanned

Project/Initiative Name and Description	Status Description
Novell conversion to Microsoft	The Branch used a Novell environment for file, print, and directory services. Late in 2011 Novell was acquired by Attachmate and the future of this vendor was in doubt. In order to keep the Branch on supported services, the Branch migrated to Microsoft file, print and directory services to meet these needs.
ZEN Works Configuration Management (ZCM) Conversion to System Center Configuration Manager (SCCM)	This project came about again by the need for the Branch to convert from Novell to Microsoft. The Novell product ZCM was used by the Branch to delivered software packages to the desktop. With the conversion to Microsoft's product SCCM, the Branch had to rewrite all the applications packages that were currently created for the old system.
OpsView Health Monitoring to System Center Operations Manager (SCOM)	The Branch used OpsView Health Monitoring to look at different health components of the network and be alerted to potential problems before they occurred. With the conversion to Microsoft they have their own software to monitor servers and the network, the Branch implemented SCOM for all future network and server monitoring.
802.1 Authentication	SITSD uses the 802.1x networking protocol to authenticate devices attaching to the Branch's internal network, and to maintain status of all devices that are authenticating. The next step in this project is for the Branch's network devices to connect to the Branch's domain instead of the State domain. This improved accounting of SITSD networking charges and security controls.
Core Switch Upgrade	The core switches that the Branch uses for connectivity to its internal servers are outdated and in need of replacement to ensure reliability of the network. The Branch will coordinate and cooperate with SITSD to perform the upgrades as SITSD makes new equipment available.
Change subnet/IP for network	This project allowed the Branch to deploy their laptops, servers, and printers in their own subnet, separate from the Secretary of State's office and the governor's office network. This segregation will improve the Branch's information security and network control.

BIP System Replacement	For many years the LAD has used a data warehouse (BIP) that stores University System financial data for use by auditors. The system is a weekly snapshot of financials from the two University systems (Banner). The maintenance and support of the data upload process to BIP and BIP itself has been resource intensive. The Branch was informed that the Universities will now allow auditors to login to their Banner systems directly thereby eliminating the need for BIP. The project is to assist LAD with the validation that the direct system access method will serve the business needs.
Committee Remote Streaming	Some committees decided to take the committee meetings on a road show (meet in cities and towns throughout Montana). After the first meeting out of town was not streamed live, there was a request to have the capability for out-of-town streaming. The Branch worked diligently to get the subsequent meetings streamed live. It was accomplished, but could be improved with a more deliberate approach accounting for proper planning, equipment, facilities, and time.
MCA Electronic Publications (CD ROM, Web) Transition to OLIT	The creation of the MCA for current electronic publications is labor intensive. The process was previously developed and run by an attorney who retired this past year. This process was transitioned to OLIT staff to support and maintain until a replacement solution is developed as part of the Session Systems Upgrade project. A staff person was assigned this past year to run the processes with the guidance of the retiring attorney. The transition was successful and the MCA On-line and MCA CD ROM were developed and distributed by OLIT staff. The process is now transitioned to OLIT and remains an OLIT operational function.
LAD Archiving Strategy	The Legislative Audit Division needed to create an electronic file archiving process to move electronic audit files to a secure location once they were complete. This process was more difficult than originally thought due the numerous links between files. A typical electronic audit file can contain hundreds or even thousands of links. A product used to help maintain existing links, and fix broken links, was acquired and tested. Currently the final processes are being developed and rolled-out to key audit staff.
Color Printers	The Kyocera printers have been problematic and needed a great deal of support. As a result, the Branch examined the market, determined that leasing color copiers from SITSD was a more cost effective solution than purchasing the Brach thier own color printers.
Relocation of IT Staff	The Branch decided that in order to make better use of space and improve the office environment, the OLIT staff would be better housed on the third floor offices rather than the basement. The move project relocated 17 staff members and their associated office equipment and materials.

Interim Period After Action Report

The Legislative Branch strives to better understand and improve the processes and projects performed each interim. During the 2012-2013 Biennium the Branch reflected on how projects, programs, and processes were handled through out and noted some common things the Branch learned. The Branch's the Enterprise Architecture program, LEAP, began to expose processes that need to be improved in order for IT and business to work together more efficiently and effectively. The Branch also moved the OLIT staff from the basement to the 3rd floor, which had a significant positive impact on morale, energizing the current staff. The OLIT staff recognized that the Novell to Microsoft conversion effort had been under estimated with regard to the amount of staff-hours required to convert all of the servers, laptops, and applications to the new environment. In Both the Network Services Section and the Computer Services Section, the project put a huge burden on staff to accomplish this project. The Branch also discovered that during the 2012-2013 biennium that a lot of staff time and resources were expended adjusting to, validating, and disputing the billing cycle, budget cycle, and environmental changes that SITD continues to impose. The Branch will continue to work with SITSD to ensure the State Data Center's technical environment is stable, services are responsive, and charges are justified.

Planned Projects for 2014-2015 Biennium

The following projects and initiatives have been vetted through the present project prioritization process and approved by the TPG, LEAP Core Team, and Division Directors.

Project/Initiative Name and Description	Business Justification Summary (efficiency, improved business performance, risk reduction)
Network Design/Health Assessment Project	This project is a natural follow-up project to the major redesign of the network from Novell eDir to Microsoft Active directory. This project involves the independent review of the current network structure to ensure security, stability, and resiliency. It will also provide a documented design of the Branch's network environment, which will enable the Branch to create change and configuration management processes and will improve the Branch's ability to troubleshoot and optimize the network operations. This will also provide the Branch with a solid foundation to make technology changes to meet future business needs.
Firewall Replacement Modules	The current technology being used for the firewall between the Branch and the State network will no longer be supported by the vendor as of 2013. The Branch needs to replace this technology in order to maintain effective security controls over the Branch's network.
Virtual Modules Replacement Project	This project will potentially replace our current virtual server environment which is presently based on a Citrix product. The present Citrix environment has limited functionality and expandability. The Branch does not have the trained personnel to maintain the current server virtualization environment, training is limited and expensive, and the technology is not well supported. This project will put the Branch on a more widely used server virtualization environment with a broader user base.
Remote Connection Replacement Project	This project will potentially replace our current remote connection solution – Citrix. The Branch needs to re-evaluate the business process to select a more appropriate technology solution. Currently the Branch expends numerous IT staff-hours maintaining and upgrading this environment. The environment is more robust than the user community business needs require. The Branch needs to research and evaluate a replacement technology solution that is easier to maintain and aligns more appropriately with the business need. Again as with our virtual server environment, training and user community support for the current solution is limited.
New Backup solution Project	This project will potentially replace the Branch's current backup solution – FDR. The Branch needs to evaluate that environment to determine if our current backup solution meets the Branch's environment and business needs. Currently FDR has limited training availability, limited user base, and limited support options. The Branch expends an excessive amount of time maintaining the current backup solution and when problems arise, do not have a user community or support base to make quick fixes.

Session Systems Replacement	This is a major enterprise-level business system replacement project to upgrade multiple aging systems including, process design, MCA/ Annotations, LAWS Database, Editor system, HB2 automation, Engrossing and Enrolling, and the MCA online system, all used to support the legislative session and related post session publication processes. Some of the systems involved in this effort are 15 – 20 years old and in danger of becoming obsolete with potential significant consequences. If these systems do become obsolete there is a good chance that the LAWS system will have unsupported software packages and could potentially become unusable. In addition to the avoidance of system stability risk, the project is expected to produce the follow benefits: 1. Automation of manual processes resulting in improved service and gains in efficiency 2. Improvements in usability and comprehension of the proposed bills and amendments 3. Better support skill availability for toolsets 4. Consolidation of system resources resulting in lower costs of operation and maintenance.
Conversion From MS Access to Oracle-Java	This multi-biennium effort will convert the Branch's databases to an enterprise level platform. The legacy database applications throughout the branch were built and maintained in a desktop level toolset which presents a number of stability and security risks to the related business processes. Furthermore, the legacy toolset was not conducive to web enabled applications. The Oracle-Java tools will support the Branch's move to more-and-more to web-based computing. A big part of this project is training staff in the java development language and environment which will enable our internal resources to support the databases into the future.
Integrate Calendars and Noticing	This is a carryover project from 2012-2013 that was not executed due to prioritization of other unplanned efforts. Over time the Legislative Branch has developed many (more than 10) electronic calendars to meet various business needs. There was little consideration of existing calendars when new calendars were developed. As a result, none of the calendars work together, and this means multiple updates are needed for one event change. Often one or more of the calendars has incorrect information leading to miscommunication and lost time. This effort will improve efficiency and accuracy of calendar information throughout the Branch.
Enterprise Archiving Strategy	This project will establish an enterprise archiving strategy and begin implementation of the same. As the Legislative Branch continues to preserve and store historical data in electronic format, there is a need to be able have the capacity to store this data for various lengths of time up to indefinitely in accordance with business needs, legislative mandates and . Not only does it need to be searchable, but it needs to be able to produce the information in a timely fashion.

Legislator Email	This project will give Legislators their own email account in which they can conduct legislative business. Currently, legislators use their own personal email accounts to conduct legislative business. This causes several risks and issues including the mixing of personal and official information and communications, lack of archiving, and difficulty in control and support. Going forward the Branch needs a legislator email solution that is separate from their personal email. This solution will also enable archiving of official emails and better control and support of the email accounts.
Enterprise Architecture phase II	During the 2012-2013 biennium the Legislative Branch instituted an Enterprise Architecture program (LEAP). Phase II of this process improvement project will enable the Legislative Branch to maintain and mature the Legislative Enterprise Architecture Program. This will further the integration of business and IT and continue to improve the maturity of the Branch's governance over its IT investments.

FY 2014-15 Central Information Technology Budget Proposal

In order for the Legislative Branch to maintain the operational status of the current computer environment and complete the prioritized technology projects, OLIT performed a budget analysis and presents the proposed budget in the Computer System Plan. The table below describes the funding that Branch will need for the operational duties, as well as major projects the Branch has identified for FY 2014-2015.

The Planning Council is requesting a present law centralized IT budget of $3,100,843 for the 2015 biennium.

Legislative Branch FY 2014 – 15
IT Budget

Central IT Operational Budget and Projects		
HB 2 Present Law: Budget to Maintain Current Operations		Biennial Budget
	Hardware and Software for Life Cycle Costs – Replacement Cycle	870,000
	Hardware Maintenance and Supplies	90,000
	House and Senate Vote System Maintenance (2 Years)	15,000

	ITSD Services	*1,101,873
	Interns and Temporary help	80,000
	Training	60,000
	Audit IT Training	20,000
	Manage Firewalls for the Branch	10,000
	Reapportionment System Hardware, Software, and Maintenance	2,000
	Web Server Lease from OPI	14,000
	Contr:External Streaming Granicus Solution	176,000
	Contr: LAWS Support (Session) – 4 months @$95/hr	65,740
	Contr: Network Support for Session Buildup – 4 months @ $95/hr	65,740
	Contr: Network Engineering Support – 5 months @$95/hr	65,740
	Contr: LAD SABHRS	20,000
	Part time session help for Legislators - 5 Temp for 4 weeks $25/hr	20,000
	Clean infected legislative staff systems – 15 computers @ $300	4,500
	Subtotal	2,680,593

*Subject to Fixed Cost Change

HB2 Present Law Projects Budget		Biennial Budget
	Archiving Solution	100,000
	Contr:Network Design Project	55,000
	Contr:Enterprise Architecture phase II	73,250
	Contr:Java programming	156,000
	Legislator Email (from state to contracted solution)	36,000
	Subtotal	420,250
	HB 2 Present Law Total	3,100,843

Other IT Budget Items for which the CSPC May Want to Make Recommendations

HB 10 New Proposal Project Budget: Obsolete Systems (approved by Legislative Council)		Biennial Budget
	Session Systems Replacement Project Total	6,146,000

Feed Bill for 63rd Legislature: Legislator Support (will be considered by Legislative Council and future leadership)		Biennial Budget
	Legislator Technology allowance Total	120,000

Legislative Branch (IT) Reserve Account: Replacement/upgrade of Existing Systems (will be considered by Legislative Council)		Biennial Budget
	Firewall Replacement Modules	40,000
	Virtual Modules Replacement Project	75,000
	Remote Connection Replacement Project	75,000
	Backup Solution Project: Enterprise Servers	50,000
	Session Systems Training	60,000
	Integrated Calendars & Notification Systems	32,870
	Total	332,870

Modernization Plan and Technology Strategy for the Legislative Branch

As business trends develop and technologies emerge and others decline, the effects of these changes on the business and technology of the Legislative Branch must be continually assessed and accommodated. This requires looking well beyond the Branch's biennium budgetary planning cycle. This technology strategy and modernization plan section is intended to document the long-term direction for the Branch's use of technology as well as issues and trends that may have an anticipated impact on the business.

The technology related issues presented in this section include:

- Modernization Plan - Areas of declining technologies that are being considered for modernization in the next one to three biennia (2- 6 years)

- Modernization Plan - Business areas that are being considered for future technology solutions due to evolving business requirements or new technical capabilities.
- Technology Strategy - Trends in business and technology presently being assessed for applicability and impact on the Legislature.

Modernization Plan - Declining Technology Considerations

The following are areas where the Branch's business processes are being supported by declining technologies. Declining technologies are those that are not supported commercially or are counter to the direction of the technology market in that area. These areas are defined and foreseeable enough to represent possible projects for the upcoming two to three biennia.

Data Analytics

Presently data is analyzed in the branch using desktop based tools including databases, spreadsheets, and statistical analysis tools. All three divisions use a variety of tools however those in the Fiscal Division are most complex and compressive. The Fiscal Division tools are based upon a declining set of technologies such as Lotus Approach. Furthermore, the toolset is an example where, in an effort to be responsive and innovative, the non-IT staff in Fiscal Division created an enterprise analytical system using non-enterprise-level tools. The solution was built up incrementally over years using tools on-hand rather than having been specifically designed and architected as an enterprise system.

This situation represents an opportunity for the Branch to consider a solution that does not merely update the toolset with a more modern set of tools but also addresses the issue of using the correct level of toolset for the job. With an enterprise-level tool it will be easier for multiple staff to be proficient and the enterprise data will be protected. A further discussion of this possibility is presented

in the next sub-section under data warehousing and business intelligence solutions. The other option for addressing this declining technology is to update the toolset incrementally. This would put the business function on a supported set of tools but leaves in place many of the risks inherent in the design and architecture of the solution such as stability, security, and sustainability.

Word Perfect

The bills, journal, and committee minutes processing part of LAWS and also some of the Branch's office processes are written in WordPerfect macros. The word processing part of the LAWS system was developed in 1997-98 using the WordPerfect macro language. WordPerfect is also being used by a portion of the Branch’s staff as a primary word processor.

The Branch upgraded to the latest release of WordPerfect X5 during the 2012-13 biennium and is currently on a supported release of WordPerfect. WordPerfect has a small and declining percentage of the market share for word processors. WordPerfect was recently sold to a private investor and therefore the financial status of the company is unknown. The Branch needs to continually evaluate this product and the company's performance in order to be prepared to replace it if necessary. If the Branch receives the budget for the session systems replacement project, WordPerfect is planned to be replaced as part of that project.

Web Development environment

The Branch has a long history of publishing information for internal and public use. The publishing function in the Branch has been and continues to be transitioning from traditional paper-based publications to web-based publications. With the increasing use of electronic content, the possibilities for richer functionality and more sophisticated and interactive presentation arise. In order to take advantage of these capabilities of the web, the Branch’s web development environment must be modernized. This effort is a consideration for upcoming years and will be

coordinated with other redevelopment projects such as the Session System Replacement.

Capital Audio and Video System

The trend in the Branch has been to increase access to live streaming audio and video for legislative proceedings. This has driven the need to upgrade the streaming infrastructure which now has the capacity and capability to handle future requirements. The limitation in the system is now the aging camera, microphone, and production systems. The capture and processing of audio and video for streaming and on-demand distribution is predicted to be an upcoming technology investment area for the Branch.

Modernization Plan Future Technology Solutions Considerations

The following areas are presently being considered for future technology solutions. They represent opportunities to consider automating manual processes and/or enabling the Branch to perform its functions in new ways. The business problems and associated opportunities have been identified through discussions with staff and management. The Branch will perform additional research into the business problem and the technology market's ability to service the needs. At the appropriate time, a Business Case Analysis may be created and the concepts may progress to a budget proposal in future planning cycles. Some of these issues are presently in the first stages of this process.

Enterprise Information Archiving

The Branch, as with most government agencies, strives to foster openness in government through the exposition of information. The functions of the Legislative Branch have important historical and legal consequences. Because the Branch produces information and increasingly the information of record is produced and stored entirely electronically, it must consider the retention of this electronic

information. This area is a mix of technical and business considerations that include:

- Statewide archiving policy
- Branch archiving policy
- Public records information vs personal information segregation
- Privacy concerns
- Security concerns
- Historical record information
- Legal holds
- Litigation threats
- Technology capabilities and limitations

While the proposed projects for FY 2014-2015 included an initial achieving solution, we expect the needs in this area to be a focus for several biennia to come.

Content Management

The Branch produces a great deal of information for internal and external consumption. Information produced by the branch is increasing and is primarily electronic. Most all publications, reports, studies, and communications produced within the Branch are stored on servers and shared via the Branch's webpages. There is an emerging business problem related to the management of all of this information so that it may be discovered, shared, maintained, and consumed. Content management systems represent a possible technology solution to this business problem. Content management systems assist with:

- Organizing information
- Updating information
- Indexing and searching
  - Documents
  - Multimedia
- Americans with Disabilities Act considerations

As the Branch increases the use of video, audio, and other diverse media formats for the delivery of information, the need to manage and make accessible that content increases. The Branch recognizes this business need and the advancement of technology solutions in content management. The possibility of investing in a solution will be explored further and the Branch will begin the process of developing a content management strategy for the enterprise. The LEAP office will organize and facilitate these efforts.

Geographic Information Systems (GIS)

The Branch has a largely unmet need for analyzing geographic (spatial related) data and presenting the analysis in map form. Large amounts of the data that the Branch deals with can be presented better in map form rather than in tables. Once presented in map form, the viewer can better grasp what the data is saying. GIS systems can meet this need. The Branch currently uses GIS in its support of redistricting, interim committee work, and auditing, but has not tapped into its full potential as of yet.

Another aspect of GIS use is the analysis of data by incorporating and interrelating spatial information. Integrating geographic data with other information can yield new perspectives and improve policymaking decisions.

Data Management and Analytics

The information processes in the Branch continues to increase in volume. The toolsets in the Branch have generally not kept pace with the increase in data volumes. The technology market has, in the meantime, developed tools to process and analyze large amounts of data. The categories of these types of tools include:

- Data warehousing
- Data analytics

- Data management
- Business Intelligence
- Crowdsourcing
- Machine learning
- Cloud computing.

There is a trend in industry and government towards using extremely large amounts of data to support decisions and policy. This trend, called “Big Data” is generally defined as using datasets that are larger than traditional on-hand tools can handle. Presently various definitions set this threshold at on the order of a dozen terabytes. For the legislature, it may be foreseeable in the future that policymakers will want to base their decisions on analysis that meets or even goes beyond this threshold. Similarly, as systems in the Executive Branch generate more and more data, it is not unthinkable that an audit would be expected to access and analyze datasets of that magnitude as well.

Big data considerations notwithstanding, the area of data management and data analytics technology has conceivable applications related to many of the legislative operations including audit analytics, financial analytics, and policy studies. Some of the presently recognized obsolete systems such as those in LFD, may be replaced by technologies in this space. The Branch will continue to evaluate trends and solutions in data management and analytics as replacement and new systems needs arise. This includes an examination of the computing power, software systems, policies, expertise, and stewardship of the large datasets.

Electronic Documents and Electronic Readers

The trends towards paperless publications, rich electronic content, and mobile computing have to be considered in the Legislative Branch’s technology strategy. The expectations for tablet, eReader (i.e. Kindle), and other electronic means of displaying text are already emerging related to the documents published by and consumed by the Branch. There have been some informal trials to reformat documents to be readable by these types of devices. The Branch does not have

the expertise or experience to truly understand the impact of the eventual support for this presentation media. The support for and use of electronic mobile reading tablets for published documents will be more thoroughly studied. Areas to be examined will include the publication and formatting tools, rich content, indexing, devices, security, and support.

E-Learning

Electronic learning systems including training development tools, training delivery systems, and learning management systems have possible applications throughout the Branch. The many of the functions of the Branch are education oriented. LSD and LFD produce reports, white papers, and pamphlets on various policy areas. LSD also educates both legislators and the public on the legislative process and on the functions of the operating divisions. There are numerous internal training initiatives in all three divisions as well. A large number of the staff members in the Branch are certified professionals (i.e. CPAs, attorneys, and technicians) who must complete training as part of their continuing education requirements. All of these training related functions, content development, content delivery, and learning management could be served by electronic systems. The advantages of such systems include ease of development and delivery, improved richness and quality of content, and more efficient management of training requirements. The Branch will consider the possible return on investment for these types of systems in terms of cost reduction and improved performance.

Desktop Video conferencing

There are emerging business needs for more flexibility in remote video conferencing for participation in the legislative process such as providing expert testimony to committees. Desktop technologies such as Skype and Facetime are possible commercial technical services to serve these needs. The advantage of these technologies is ease of use, wide access, and reduction of travel expenses. There are however possible impacts such as security concerns, support, and network

bandwidth effects. The Branch has approved the use of these technologies on a limited exception basis and is presently considering a deliberate approach to the policy, support, and technical issues for their wider use.

Business and Technology Trends Considerations

The following are technology related issues that do not relate to any present need or conceived need. They are areas where the Branch recognizes a long-term trend and has begun the process of analysis.

Social Media

The use of social media spans from purely entertainment purposes to legitimate business and governmental uses. At times the lines between professional and personal uses of these electronic venues are blurred. Increasingly however, industry and governments are considering how social media can be used to foster communications, provide efficiencies, and improve performance. Social media in the workplace can be helpful in human resources, recruiting, and interagency communications. Certain social networks such as LinkedIn are professionally focused while others such as Facebook are more personal in nature. The trend in Internet based recruiting is to integrate social networking into the traditional job posting boards. Social networking is also emerging as a way to interact with customers in business and with constituents in politics and government. The Branch must consider the policies and controls for the use of this technology. The impact to the Branch's IT infrastructure is minimal however there may be impacts to the support functions and security.

Multi-media Content Delivery

As an extension to the concept of using eLearning technologies, the use of interactive applications and video delivered electronically to a variety of devices

including personal computers, mobile devices, and televisions is an anticipated trend.

While the decision to begin augmenting or replacing paper-based reports and pamphlets with applications and videos is a business decision, there are many technology implications of this trend. The development or production of applications and videos could be outsourced or performed in-house. Each of these choices has its own set of implications. Other impacts and concerns include the support of various devices and formats, networking bandwidth capacity, configuration management, content management, and end-user support.

Mobile computing – Tablets and Smart Phones

Smart phones such as the iPhone and the Android phones are becoming very popular in business, government, and in the consumer markets. These phones have a computer chip in them and are able to do much of the work that a laptop PC can. In particular they can send and receive e-mail, keep track of appointments, and browse the Internet. Combine these functions with the mobility of the smart phone and you begin to have a device that could be of benefit to legislators and staff.

Tablet computers are highly mobile devices designed for use without a keyboard. They have capability that goes beyond smart phones and a screen format that enables them to serve well as a document viewer and multimedia platform. These devices are being used to replace paper-based documents and traditional laptops both. For example, the United States Air Force and a number of airlines have replaced the pilot's flight-bag full of manuals with tablet computers. Hospitals are using them for patient records and they are filtering into many other industries as data collection and information presentation devices.

There are many possibilities for the use of both classes of mobile devices in the operating divisions and in the chambers. The devices, because of the screen

format, require different visual designs for documentation and applications. As the Branch invests in new custom developed and off-the-shelf software, it will be important to consider the accommodation of these devices. Regardless of the internal adoption of mobile computing, the public may demand that the Branch support these devices in the content it produces or the adoption of this technology in the Executive Branch may drive the need to implement it as well.

The Branch is actively monitoring the possibilities for mobile computing. Coordination and cooperation with the Executive Branch is important in this regard as the Executive Branch is presently developing a mobile computing strategy and the Executive branch agencies are each considering mobile computing plans.

Services Oriented Architectures

The Executive Branch and University System are continually upgrading and adding functionality to their IT systems. The Legislature needs access to this data for fiscal analysis and audit purposes. The Branch will continually be adjusting and refining its IT systems that interface to Executive Branch and University System systems to stay current with the additions and changes made to these IT systems.

There are new technologies based on open standards and a services-oriented architecture that enable sharing of information with greater ease. As the Executive Branch and University System develop systems based on these technologies, it will prompt the Legislative Branch to consider building the technical infrastructure and expertise needed to take advantage of this capability. Furthermore, as the Branch upgrades, replaces, or implements new technologies, services oriented architectures and open data standards will be considered as desirable criteria so that legislative data will be easier to access and control both internally and externally.

Management of Technology Replacement Cycle Costs

The Branch spends about $1 million in the replacement cycle of hardware technology (printers, laptops, servers, etc.) every biennium. Any opportunity to

extend the current replacement cycle for one or more classes of technology will help reduce these costs. The challenge is to choose technology that has a potential useful life that is longer than the current replacement cycle while not compromising support for the business functions or increasing support costs. The concept of Moore's Law is that computing hardware capabilities doubles approximately every 18-24 months. The rate of growth in the Branch's information processing needs is estimated to be below that rate. Therefore, the Branch continually assesses the hardware replacement policy in terms of its costs, risks, and business needs.

Automation for Legislators

Legislators' demand for IT resources has continually increased from session to session. The Planning Council believes that this trend will continue and that new technology will continue to come along that can help legislators be more effective at their jobs.

The Planning Council also believes that lawmakers must take an active role in defining their needs, identifying potential approaches for addressing those needs, and supporting adequate funding to purchase and support those needs. Both the Planning Council and legislators must actively pursue and apply new technology to the benefit of the Legislature.

The LEAP office has engaged selected members of the legislature in the development of the LEAP Principles. The Planning Council supports the active participation of the legislators in the selection of new technologies for the Branch. The LEAP office is presently implementing processes to support business-oriented technology planning and management.

Appendices

Appendix A: Membership of Advisory Groups

Legislative Branch Computer System Planning Council

Susan Fox, Executive Director, Legislative Services Division, Chair (ex officio)
Beth Cargo, Chief Clerk of the House
Marilyn Miller, Secretary of the Senate
Edward Buttrey, State Senator, Senate District No. 13
Bill Beck, State Representative, House District No. 6
Amy Carlson, Legislative Fiscal Analyst
Tori Hunthausen, Legislative Auditor
Dick Clark, Executive Branch CIO, Information Technology Services Division, Department of Administration

Legislative Executive Review Board

Susan Fox, Executive Director, Legislative Services Division
Tori Hunthausen, Legislative Auditor
Amy Carlson, Legislative Fiscal Analyst

Technical Planning Group (TPG)

Karen Berger, Legislative Services Division
Steve Eller, Legislative Services Division
Dale Gow, Legislative Services Division
Terry Johnson, Legislative Fiscal Division
Darrin McLean, Legislative Services Division
Kent Rice, Legislative Audit Division
Jennifer Simmons, Legislative Services Division
Henry Trenk, Legislative Services Division

Legislative Enterprise Architecture Program (LEAP) Core Team

Darrin McLean, Enterprise Architect
Henry Trenk, IT Director
Steve Eller, Computer Services Section Manager
Dale Gow, Network Services Section Manager

Appendix B: Legislative Enterprise Architecture Principles

LEAP Principle 1:

Organize information to enable its discovery and improve its meaningfulness.

Rationale:

- Legislators, legislative staff, the public, and external agencies require the ability to locate information provided by the legislature.
- The ability of the legislature to produce usable information is critical to the furtherance of the role of the Legislative Branch as the provider of policy information.
- Getting the right information to the legislators at the right time enables sound policy decision making.
- The effective discovery and comprehension of information saves time and resources.
- By organizing information in proper context, the value of information can be increased.

Implications:

- Requires investment in the expertise and tools that enable the information to be searched, located, and utilized.
- Requires the Branch to inventory and analyze its information to aid with its organization, indexing, and its ability to be searched.
- Requires processes and effort to organize information and maintain it.

LEAP Principle 2:

- Protect information in accordance with its business value, sensitivity, and longevity.

Rationale:

- The Branch accesses, processes, and keeps sensitive data including regulated information and has a legal responsibility to safeguard it from unauthorized access.
- The Branch has statutory, policy, and business use requirements to retain information for various amounts of time up to indefinitely.
- There is business and legal risk associated with the loss or compromise of the Branch's enterprise information.

Implication:

- Requires policies for the classification of information according to its value, sensitivity, and longevity (i.e. definition of public records, historical information, and sensitive information)
- Requires protection mechanisms to be implemented to safeguard the information's confidentiality, integrity, and availability.
- Requires infrastructure for the retention of information according to the established policies.

LEAP Principle 3:

- Invest in automation of business processes and modernization of systems to gain efficiency, improve business performance, and/or reduce business risk.

Rationale:

- The business of the legislature is continually challenged to provide more services and process increasing amounts of data.
- Many of the business functions of the Branch are increasingly dependent upon the processing of large amounts of data. At the same time, there are rising expectations for quick responsiveness.
- Without automation there is a finite amount of information processing capacity due to resource constraints and the natural limitation of human information handling.
- Information processing, storage, and access are increasingly related to business risk including ceasing of operations, loss of public trust, litigation, and the waste of resources.
- Technology must not be implemented for technology's sake.

Implication:

- Requires the creation of an enterprise systems modernization plan incorporated into the Legislative Branch Information Technology Plan.
- Requires that all technology investments be justified in terms of business efficiency, business performance and business risk.
- Requires the Branch consider the supportability and total cost of ownership in all automation efforts.
- Requires existing operations and systems to be continually evaluated in terms of risk, efficiency, and performance.

LEAP Principle 4:

- Maximize flexibility in the design of business and technology solutions to adjust to change in business and technology environments.

Rationale:

- The Branch must continually adjust to developments in technology as constituents, the legislators, and other agencies adopt the use of new technology.
- The Branch must continually adjust to changes in the business functions internally and externally (i.e. Executive Branch, Federal Government).

Implication:

- Requires a continuous process for the integrated participation and input of business and IT personnel in the management and maintenance of the business and technical environments.
- Requires that adaptability and flexibility be designed into business and technical solutions.

LEAP Principle 5:

- Foster openness and participation in the legislative process leveraging technology to overcome Montana's geographic challenges.

Rationale:

- Montana's size and demographics present a challenge to keep the public informed and engaged in the legislative process.
- Legislators require distributed access to information and communications in the interim.
- Appropriate technology innovation can enable open, engaged, and informed dialogue.

Implication:

- Requires distributed and mobile systems for telecommunications, interaction, and information sharing.
- Requires Branch IT support for geographically distributed users.
- Requires the Branch to balance access to information with the maintenance of quality of information.

LEAP Principle 6:

- Maximize the exchange of quality information by accommodating various media types and technology.

Rationale:

- There is a continual adoption of information sharing media types and technology used by the public, the legislators, and the Executive Branch.
- In order to remain effective, open, and participative the Branch must sensibly support new media types and technologies.

Implication:

- Requires Branch systems to support communications and information exchange via a wide variety of formats and devices.
- Requires a continuous process to evaluate new media types to determine if they would enhance the exchange of quality information.
- The Branch must balance the support of media types and technology with the organization's ability to effectively manage the information so that the quality of information exchange is not degraded.
- Requires the Branch to consider phasing out of declining media types and technologies with the careful consideration of the wide variety of experience, preferences, and skills in the legislative bodies, legislative staff, and the public.

LEAP Principle 7:

- Promote the efficient use of resources by communicating and collaborating on policy, business operations, and information systems decisions throughout the Branch as an enterprise.

Rationale:

- The business functions within the various divisions of the Branch are oftentimes complimentary and parallel (e.g. publication, analytics, research, facilitation, legal, and education all exist in each of the divisions).
- Acting as a single enterprise offers opportunities for economies of scale.
- Collaboration fosters continuous improvement and enables centers of excellence.
- Collaboration yields standardization which enables integration and facilitates maintenance, operations, and support.
- Improved communications improves efficiencies by reducing duplicative work and avoiding the need for rework.

Implication:

- Requires the development and maintenance of consistent Branch-wide policies.
- Requires a process for the communication, vetting, and consideration of collaboration and coordination of initiatives.
- Requires the consideration of the whole enterprise when deciding solutions for business needs.
- Requires the creation and maintenance of enterprise process, information, and technology models.

- Requires the adherence to a strategic modernization plan that captures the future direction of the enterprise.

LEAP Principle 8:

- Guide the implementation, use, and management of technology in alignment with the business by setting policy and establishing processes.

Rationale:

- In order to maintain a balance between business integrity and keeping up with technology the Branch must be proactive and controlled in its adoption of technology.
- In order to effectively manage its operations given the complexity, diversity, and dynamicity of its governance, the Branch must act deliberately through the judicious application of policy implemented through defined processes.

Implication:

- Requires the development and maintenance of consistent business-driven Branch-wide policies.
- Requires processes for the communication and training of the policies.
- Requires the creation and maintenance of enterprise process, information, and technology models.
- Requires the adherence to defined governance processes.
- Requires the development and adoption of standardized processes in the following areas:
- Planning
- Project management
- Requirements management
- Procurement
- System implementation/development
- Testing
- Configuration management
- Change management
- Organizational change management
- Requires staff development in best practice application.

LEAP Principle 9:

- Foster education, learning, and comprehension of information through innovations in information presentation.

Rationale:

- The increase in complexity and scope of public policy requires the public and their policymakers to be informed on an ever-wider variety of issues.
- Legislative information can be highly complex, voluminous, and detailed. The Branch strives to present information in a manner that makes it comprehensible and usable by both internal and external consumers.
- The rising reliance on and availability of large amounts of information used for evidence-based policymaking, is driving the need for more sophistication in the public and their policymakers.
- Term-limits results in loss of institutional knowledge and a lower average experience level in the legislative bodies increasing the need for process and policy education.
- The Branch employs a largely professional staff that requires ongoing training and certification.

Implication:

- Requires the investment in eLearning, knowledge-base, and learning management technology in the Branch's educational and training functions
- Requires examination of and further investment in eLearning, learning management, instructional design technologies and related expertise.

LEAP Principle 10:

- Design, implement, and manage information systems with rigor appropriate to the business value of the information.

Rationale:

- The core functions of the Branch are dependent upon the collection, processing, analysis, presentation, and communication of enterprise information.
- The systems used to process information must be chosen, designed, operated, and maintained in accordance with the value and scope of the related business functions.

Implication:

- Requires the classification and valuation of Branch enterprise information and functions.
- Requires the investment in appropriately rigorous methods, technologies, and tools.
- Requires the Branch to budget for appropriate levels of maintenance and operations resources when implementing new systems.

LEAP Principle 11:

- Maintain Branch independence in core business functions.

Rationale:

- To ensure the integrity of the legislative process and the oversight responsibilities of the Branch, the core business functions and their related systems must remain independent from the other branches of government.

Implication:

- Requires Branch to consider its Constitutional charter as a co-equal and independent branch in its business and information systems decisions.

LEAP Principle 12

- Guard the integrity of all Legislative Branch functions by producing objective non-partisan information.
- Rationale:
- To ensure the integrity of the legislative process, the Branch's analysis and presentation of information must remain impartial and evidenced-based.

Implication:

- Requires the Branch to authenticate sources, validate objectivity, and assure integrity of information it uses and produces.