State of Montana
Montana State Library

Agency IT Plan 2016 – 2021

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1. Executive Summary

Information technology (IT) is an essential resource required for the Montana State Library (MSL) to meet its mission and statutory requirements. IT is integrated into nearly every function of the State Library, from the delivery of library services, to the creation, maintenance, and delivery of digital content and data in numerous forms, and to numerous users with a wide variety of information needs.   The programs of the library rely heavily on the State network, on MSL's servers and file storage, on library partners that provide e-Content and software as a service, and on Internet technologies to support our business goals.

Current Business Drivers

The maintenance and development of MSL information systems are directly tied to current and planned business needs which include but are not limited to the following:

- MSL has been in a period of reflection over the past two years. We conducted an organizational review to help us identify what opportunities MSL, as an agency, was ready to embrace and how MSL can best be organized to meet those opportunities. The State Librarian state a statewide task force to evaluate the needs of the Montana library community to help MSL align our limited resources to meet those needs. With this information in hand, the State Library Commission has just launched a strategic planning process to create a new plan that will better guide our services. As this plan informs our business priorities, it will necessarily inform our IT priorities into the foreseeable future.
- MSL must continue to evaluate and embrace new technology, and to remain in close communication with our users, in order to keep services relevant to users and to ensure library content and services are widely discoverable by potential users. This business need drove the rewrites of our flagship Data Bundler and Digital Atlas applications (work that was accomplished this biennium), it is reflected in the user stories collected to inform the rewrite of our Library Directory application, and it will be reflected in our adoption of new technologies like ArcGIS Online.
- Limited and/or reduced personnel and financial resources, and little likelihood of increased resources, means that MSL must find technological and service efficiencies in order to continue to maintain or improve services to meet user demands.
- Montana State Digital Library Information Management team:
  - supports the development of Montana Spatial Data Infrastructure framework data layers. These are statewide Geographic Information System (GIS) compatible data sets that provide foundational information to GIS users for use in creating interactive maps, web mapping applications, and performing spatial analysis.

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- o will complete in the FY 18-19 biennium a long-term public/private partnership with the Internet Archive to digitize and make available online our entire print state publications [legacy collection](#) (37,000 volumes).
  - o in partnership with the Montana Natural Heritage Program (MTNHP) and our in-house partner, the Natural Resources Conservation Service, manages two statutory programs, the Natural Resource Information System (NRIS) and the Water Information System (WIS) which makes web applications available to assist with the discovery and distribution of data within the GIS and natural resource data clearinghouse.
- The Talking Book Library (TBL) upgraded its in-house recording booth software to meet the standards for digital production required by the Library of Congress's National Library Service. TBL is gradually converting its legacy collection of books on tape from analog to digital media, including downloadable content, to meet user demands
- The Statewide Library Resources (SLR) Division continually seeks ways to meet rising library patron demands by increasing available e-Content services. SLR facilitates access to online content or e-Content for Montana libraries through statewide subscriptions for online databases, downloadable e-resources services, and other online resources. Increasingly Montana libraries need to make use of broadband technology to support their own library services delivery, to make use of library technology, and to participate in online professional development opportunities. The high cost and, in some cases, limited access to high speed broadband Internet remains a challenge to most Montana libraries. This is a challenge they look to MSL to help resolve.
- MSL actively seeks opportunities to reduce the maintenance burden on their limited IT staff. The conversion of MSL physical servers to virtual machines was completed in 2015. We are now well positioned to take advantage of external hosting opportunities such as the State of Montana Data Center (SMDC) or other cloud based hosting options for some server resources if cost effective opportunities present themselves. Virtualization also offers the more direct benefit of more efficient server maintenance and greater flexibility of existing physical machine resources.

To meet these current business needs along with the overall needs of the agency, MSL developed the following IT goals and objectives for the period 2016-2021:

IT Goal 1   Align information system resources with MSL program and service needs:

Objective 1-1   Continue to evaluate information system resources currently maintained by MSL against MSL program and service needs to find opportunities for greater efficiency;

Objective 1-2   Evaluate external IT resources against MSL program and service needs; MSL will seek a onetime legislative appropriation to contract for the digital conversion of our legacy TBL analog recorded book collection.

Objective 1-3   Use the MSL strategic planning process and annual work plan process to identify priorities for new and/or expanded information systems, as well as systems that may be retired;

Objective 1-4   Encourage staff from all library programs to effectively collaborate across programs in order to use all library information system resources to meet the goals of MSL.

IT Goal 2   Develop and maintain current and new information systems that are properly aligned with MSL program and service needs:

Objective 2-1   Maintain the MSL information technology plan;

Objective 2-2   Participate in IT governance;

Objective 2-3   Consult with Department of Administration when evaluating new information systems to support the MSL strategic plan; MSL is evaluating the cost and service impact to move our data storage and production server environment to the State of Montana Data Center (SMDC). If warranted MSL will seek legislative funding authority to increase fixed costs through the State Information Technology Services Division (SITSD) rate setting process to fund a migration to the SMDC.

Objective 2-4   Comply with all relevant Enterprise IT standards and policies that align with MSL business needs and support MSL programs and services;

Objective 2-5   Continue to make use of the Agile Project Management process as a means to proactively manage information systems and projects;

Objective 2-6   Proactively manage of hardware and software assets;

Objective 2-7   Though not directly in support of MSL business operations, MSL will seek support from the Governor's Office and the Legislature for funding to make high speed broadband more affordable for libraries. If

funded, a contracted public/private partnership is envisioned that would be administered through an outside entity.

IT Goal 3   Expand and improve online information services:

Objective 3-1   Improve the overall design and usability of MSL websites and services;

Objective 3-2   Participate in formal State activities that, when well supported, improve the efficiency of online data and services delivery;

Objective 3-3   Collaborate with partners on projects and services which increase citizen access to public information and library content;

Objective 3-4   Provide online interfaces that enable partners to contribute feedback regarding MSL projects and services as well as content to MSL collections;

Objective 3-5   Create and deliver web services to serve MSL data and the data of MSL partners;

ITG 4   Develop business continuity and security programs:
Objective 4-1   Implement a NIST-compliant Information System Security Program;
Objective 4-2   Develop an agency wide disaster recovery plan.

ITG 5   Improve MSL's ability to attract and retain a qualified IT workforce.
Objective 5-1   Use IT staff in ways that support the MSL Strategic Plan and promote opportunities for collaboration and cross-training both among internal colleagues as well as with MSL partners;
Objective 5-2   Develop MSL IT staff through investment in training and professional development. Implement training plans for employees that align with MSL's projected information system needs.

2. Environment, Success, and Capabilities

The Montana State Library is composed of programs that serve the information needs of all branches of state government, its agencies, local counterparts, and individuals seeking information and materials that are not found in their local libraries. Its charge includes effecting statewide planning for library development in all communities.

MSL VISION

Develop and deliver 21st Century library resources and information services.

MSL MISSION

The Montana State Library is committed to strengthening libraries and information services for all Montanans through leadership, advocacy, and service.

MSL VALUES
- An educated and inquisitive citizenry.
- Library services that are responsive to users' needs.
- Free government information that is easily accessible and widely distributed.
- Patron privacy.
- Equitable access to all library resources and services.
- Competent and professional staff.
- Open, direct, and timely communication.
- Economic development of Montana and Montanans.

MSL provides direct services to the public. Direct services include access to Montana state government publications, access to geospatial and natural resource information, public access computers, references services for inquiries supported by MSL collections and services to blind and physically disabled.

MSL also serves all Montanans by developing, strengthening and supporting the services offered by Montana libraries. This distinction in the types of services offered by MSL is reflected in the goals below from the agency's current long range plan:

Goal One—Content

> MSL acquires and manages relevant quality content that meets the needs of Montana library users.

Goal Two—Access

> MSL provides libraries, agencies, and its partners and patrons with convenient, high quality, and cost-effective access to library content and services.

Goal Three ---Training

MSL provides appropriate trainings and training resources so that the best use can be made of the resources offered.

Goal Four—Consultation and Leadership

MSL provides consultation and leadership to enable users to set and reach their goals.

Goal Five—Collaboration

MSL promotes partnerships and encourages collaboration among its users.

Goal Six— Sustainable Success

MSL is efficient and effective (measured against user outcomes), and is engaged in fulfilling its mission.

These agency-wide goals reflect MSL's statutory obligations and offer broad guidance for biannual work plans developed by program staff.
The complete MSL Long Range, which provides more detail on how MSL seeks to accomplish these goals, is available from:
http://apps.msl.mt.gov/About_the_Library/Publications/Long_Range_Plan/LRP12-22_Final.pdf

Program work plans are available in the meeting materials section of the Montana State Library Commission web site:
http://apps.msl.mt.gov/About_the_Library/Commission_Councils/Commission/comm_Meeting Materials.aspx

3. IT Contributions and Strategies

IT staff at the Montana State Library provide support to all library programs to ensure they have access to needed technical resources. To be effective, it is essential that the IT staff work with library programs to provide solutions that balance individual program needs with the larger library need for integrated, secure, sustainable library systems designed to adapt to the constant, rapid pace of technology change.

IT planning at MSL is built around the core goals contained in the MSL Long Range Plan (Referenced in Section 2). In terms of Information Technology we aspire to:

1. Provide file server and database platforms for the storage and management of library content.
2. Provide a web server environment and developer support resources to allow programs to provide cutting edge data access tools to patrons.

3. Provide training for library staff, partners, and patrons for effective application of library technology to meet information management and information access needs and provide library staff with technology resources to allow them to be more effective trainers.
4. Provide MSL staff with the IT resources needed to be effective in their leadership and consulting roles.
5. Use IT resources to promote partnerships and encourage collaboration both within and beyond the library, government, and natural resource information management communities.
6. Insure sustainable success through efficient and effective management of information technology resources.

4. IT Principles

IT is an essential resource required for MSL to meet its mission and statutory requirements. IT is integrated into nearly every function of the State Library, from the delivery of library services, to the creation, maintenance, and delivery of digital content and data in numerous forms, and to numerous users with a wide variety of information needs. The programs of the library rely heavily on the State network, on MSL's servers and file storage, on library partners that provide e-Content and software as a service, and on Internet technologies to support our business goals.

MSL recognizes our responsibility to our users as well as to State Government to be good IT stewards. To that end, MSL IT principles reflect the State of Montana's IT principles:

- Resources and funding will be allocated to the IT projects that contribute the greatest net value and benefit to Montana stakeholders.

  Working with limited resources, MSL is always careful to invest in IT projects that offer the greatest net benefit both to the agency as well as to the state as a whole. To that end, MSL has implemented a project proposal and prioritization process that is administered by the senior management team to evaluate and align resources to priority projects.

- Unwarranted duplication will be minimized by sharing data, IT infrastructure, systems, applications and IT services.

  MSL constantly seeks to identify opportunities to eliminate unwarranted duplication. We regularly work with other agencies, including SITSD, to make user of well-supported Enterprise IT services to ensure that our services supplement or complement, but do not duplicate, existing service offerings.

- Montana will use shared platforms and systems to minimize IT expenditures, improve service delivery and accelerate service implementation.

  Making use of shared platforms requires collaboration and collaboration is one of the strategic goals of the State Library. Examples of the use of shared platforms are widespread across MSL programs. SLR excels at providing scalable statewide platforms,

such as the Montana Shared Catalog integrated library system, that improve the efficiency of library services delivery across the state. Our partnership with the Internet Archive and use of/contributions to Archive-It to provide permanent public access to state government information means that MSL remains a leader among libraries across the country in our ability to provide ready access to this collection. TBL both makes use of, and now contributes to the NLS Braille and Audio Reading Download program so that Montana's who are blind, low vision, or who cannot read traditional print materials have access to a world of knowledge in digital form. And our Digital Library led the effort, in partnership with SITSD, to migrate the State's Enterprise GIS platform to Esri's Managed Services, reduced our costs by nearly 50%.

- IT will be used to provide educational opportunities, create quality jobs, a favorable business climate, improve government, protect individual privacy and protect the privacy of IT information.

  As is stated in our long range plan, MSL values an educated and inquisitive citizenry, free government information that is easily accessible and widely distributed, patron privacy, equitable access to all library resources and services, and economic development of Montana and Montanans. MSL business needs reflect these values and the agency relies on IT infrastructure to meet these needs in support of our values and goals.

- IT resources will be used in an organized, deliberative and cost-effective manner.

  This is a principle MSL applies to the use of all resources, IT or otherwise. Evidence of this principle in action can be found in recent evaluations we've performed of our services, and in Commission planning and action.

- IT systems will provide delivery channels that allow citizens to determine when, where, and how they interact with state agencies.

  This principle, too, hits at the core of the MSL mission and again aligns with several MSL values: An educated and inquisitive citizenry, Library services that are responsive to users' needs, free government information that is easily accessible and widely distributed, Equitable access to all library resources and services. By making our collections of information available online in numerous self-service applications, MSL meets our statutory obligations to provide permanent public access to state government information, to provide a natural resource information system and a water information system, to coordinate the development of geographic information system standards for creating land information, and to administer a natural heritage program which provides information on Montana's species and habitats, emphasizing those of conservation concern, and, most importantly, meets our users information needs.

▪ Mitigation of risks is a priority for protecting individual privacy, confidential data, and IT systems.

MSL works hard to protect the privacy of patrons as is required by the Library Records Confidentiality Act (22-1-11, MCA). MSL notifies users of the means by which we gather and maintain their user information through a [Statement of Privacy and Confidentiality of Library Records](#). Most information resources that MSL manages are intended for public distribution. In cases where staff does interact with sensitive data staff seek to comply with state security guidelines to ensure that data is protected. MSL follows IT standards and best practices for information systems security and maintenance to the extent that resources allow both to protect data and to minimize risk to systems that could result in lost productivity and IT resources investment.

5. IT Governance

MSL is governed by the Montana State Library Commission, the body that establishes policy and budgets for MSL, and that is responsible for agency wide strategic planning. The Commission must approve any IT policy. While the Commission does not approve individual IT expenditures, expenditures must fall within the budgets approved by the Commission. Feedback from the Commission is sought when evaluating significant changes in IT systems or overall IT strategy.

Day to day operations of the State Library are the responsibility of the State Librarian and the senior management team that also includes the Division Administrators for the Statewide Library Resources Division and the Digital Library, and the Central Services Manager. This team makes business decisions, including decisions regarding IT priorities and investments, for MSL with information provided by staff from throughout the agency.

The nature of the work of MSL staff means that nearly 50% of staff are classified as IT staff, though just four staff, the Web Manager, the GIS Web Programmer, the Network Administrator, and the Database Administrator, are considered IT support staff for the agency.

IT procurement procedures follow the State's procurement policies. Procurements are initiated by staff with approval from their managers. An Information Technology Procurement Request (ITPR) is required for all procurements. When allowed by delegated authority, ITPRs are approved by the MSL IT lead and/or the State Librarian. The senior management team evaluates opportunities for IT procurement that may have agency-wide benefit.

6. IT Financial Management

Individual programs within the library have budgets which they manage to acquire products and services needed to carry out their day to day business. Procurements and financial administration occur in MSL's Central Services Office. Payment for SITSD services or other IT services and equipment comes primarily from MSL program budgets. There is also a central equipment budget which MSL uses to purchase base level equipment (desks, chairs, workspaces, as well as a primary computer workstation) for employees. It may also be used for other agency wide equipment needs including IT equipment or services considered to be of agency-wide value.

Detailed quarterly financial reports that include information about MSL funding sources as well as program budgets broken down into sub-categories of personal services and operations are available under "Meeting Materials" on the MSL Commission website:
http://apps.msl.mt.gov/About_the_Library/Commission_Councils/Commission/comm_Meeting Materials.aspx

As per the agency IT Governance, all IT purchases are initiated with an ITPR which must either be approved by SITSD or the MSL staff where delegated authority rules are applicable. All ITPRs are reviewed to ensure that they tie into the agency IT Plan.

A more detailed description of MSL purchasing controls, including those in place for IT purchases, can be found in the MSL Internal Control Plan. This plan is reviewed annually by the senior management team and supervisors.

7. IT Services and Processes

As was stated previously, nearly 50% of MSL staff are classified as IT staff though most services provided by these staff are either performed in support of libraries around Montana or are part of MSL's process of digital collection management. MSL does not have an IT service catalog, but the for IT support staff try to support all aspects of agency IT needs. Among the services IT staff provide to MSL programs are:

- Network Administration
- Desktop Support
- Server Administration
- Web Support and Management
- Database Support and Administration
- Application Development
- GIS Server Administration
- IT Security Program

● Digital Collections Management and Access

8. IT Infrastructure, Staffing and Resources

There is a substantial amount of IT related work that occurs within MSL programs by program staff. Examples of this include program web content management and program data management. There is a small IT team at the library which consists of:

- State Librarian – In addition to serving as the agency director, this position is responsible for overall IT planning and coordination. Also serves as the agency security officer and the agency continuity officer.
- Web Manager/IT Lead – Manages the agency internet and intranet web environments and supervises IT staff.
- GIS Database Administrator – Manages the library database and GIS server environment.
- GIS Web Developer – Develops and manages MSL web applications.
- Network Administrator – Configures and supports the agency desktop, network, and server resources

MSL maintains a small in-house data center with a Storage Area Network and 8 host servers that support 22 virtual servers. In 2015 MSL completed a process to migrate to a wholly virtual environment to support our disaster recovery goals and in anticipation of a move to the SMDC or other cloud platform. The SAN provides primary data storage for approximately 30 Tb of agency data. MSL also administers a redundant SAN at the SMCD which provides mirrored failover for disaster recovery. The SANs go out of warranty in the coming fiscal year and MSL is currently investigating SITSD data storage options as an alternative to hardware replacement.

SLR provides library management services to libraries under contract with four primary vendors:
- Sirsi Dynix, from which MSL procures the software to support the Montana Shared Catalog;
- OCLC, a worldwide consortium of libraries that provides software and services to support library functions like cataloging and interlibrary loan. MSL administers a contract with OCLC through which any library in Montana may receive services;
- Overdrive, the platform and content host for Montana's ebook consortium
- Ebsco, the provider of Montana statewide periodical databases. Ebsco provides both content and delivery platform for use by libraries and patrons throughout Montana.

TBL procures software for their integrated library system through Keystone Library Automation System. KLAS is also responsible for providing primary system support.

The Digital Library maintains a couple of key contracts to support data development and dissemination:

- MSL has primary responsibility for the State of Montana Enterprise License Agreement with Esri. Under the ELA, MSL and several other state agencies recently migrated off of the State's enterprise GIS platform to Esri's Managed Services platform for GIS service delivery.
- Internet Archive provides digitization and content hosting and access for the Digital Library's text-based state publications collection and the Digital Library subscribes to the Internet Archive's Archive-it web archive program to capture Montana state government websites as part of the agency's mandate to provide permanent public access to state government information.

9. Risks and Issues

Primary Risk	Probability	Impact	Mitigation Strategy
Insufficient staffing	Medium	High	Work with MSL management to ensure critical IT needs are prioritized.
Security breach	Medium	High	MSL is working through the recently adopted baseline security controls to identify specific vulnerabilities which may require new policies, procedures, equipment, and/or personnel positions.
Loss of funding	Low	High	MSL leverages resources from many funding sources to minimize the impact if any single funding stream was reduced or lost.
Changing library role	Low	Medium	While some may view the role of libraries as being marginalized by the abundance of information access available through current technology, MSL sees this as an ideal opportunity to assist patrons with their information needs.
Difficulty of hiring and retaining qualified technical staff	High	High	Emphasis on MSL goal of sustainable success. Provide staff with opportunities to learn and grow in their field of interest. Ensure MSL is well managed to encourage staff buy-in to the larger mission.

10. IT Goals and Objectives

Goal Number 1: Align information system resources with MSL program and service needs

IT Goal 1   Align information system resources with MSL program and service needs

Description: This on-going goal reminds MSL to be mindful of the need to ensure that the agency aligns current information system resources with MSL program and service needs and appropriately deploys information technology solutions within the scope of MSL strategic plan and personnel and financial resources.

Benefits: MSL staff benefit by having the resources we need to carry out work without overextending limited personnel and financial resources. MSL partners and patrons benefit by having reliable access to high quality content and services. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government.

> **Supporting Objective/Action**

Objective 1-1   Continue to evaluate information system resources currently maintained by MSL against MSL program and service needs to find opportunities for greater efficiency

Business driver: Limited and/or reduced personnel and financial resources means that MSL must find efficiencies in order to continue to maintain or improve services to meet user demands; there are efficiencies to be gained through thorough evaluation of current IT resource deployment.

Risks: None

Timeframe: Ongoing

Critical success factors:

- As current server and data storage hardware reaches end of life, MSL will evaluate options to make use of enterprise services through the SMDC or other cloud platform provider;
- MSL will evaluate available personnel and financial resources;
- MSL will purchase new hardware only when there is a clear program or service need that cannot be met with current infrastructure or service offerings and if MSL has the resources to support additional infrastructure.

> **Supporting Objective/Action**

Objective 1-2   Evaluate external IT resources against MSL program and service needs; MSL will seek a onetime legislative appropriation to contract for the digital conversion of our legacy TBL analog recorded book collection.

Business driver: Limited and/or reduced personnel and financial resources means that MSL must find efficiencies in order to continue to maintain or improve services to meet

user demands; there are efficiencies to be gained by utilizing information systems maintained by others. TBL does not have the staff resources necessary to devote to a complete digital conversion and will seek to outsource this responsibility if funding allows.

Benefits: MSL staff benefit by having the resources we need to carry out our work without overextending limited personnel and financial resources. Further benefits may be found through the creation of new collaborative opportunities discovered as this goal is pursued. MSL partners and patrons benefit by having reliable access to high quality content and services. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government. TBL patrons would benefit by having access to the complete TBL collection on a current media.

Risks: External information technology resources must be flexible enough to meet MSL business needs as well as State information security standards. External resources may not be available in a time frame to meet MSL needs.

Timeframe: On-going; TBL objective is dependent on funding and would be completed in FY 18.

Supporting Objective/Action

Objective 1-3 Use the MSL strategic planning process and annual work plan process to identify priorities for new and/or expanded information systems, as well as systems that may be retired;

Business driver: Limited and/or reduced personnel and financial resources means that MSL must find efficiencies in order to continue to maintain or improve services to meet user demands; there are efficiencies to be gained by strategically planning future MSL goals and objects and by aligning information systems to support those goals and objectives.

Benefits: MSL staff benefit by clearly knowing agency priorities for current and future goals and by having the resources they need to achieve those goals without overextending limited personnel and financial resources. MSL partners and patrons benefit by having reliable access to high quality content and services with more unique resources to meet a broader array of user expectations. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government.

Risks: Limited staff and financial resources mean that MSL staff must prioritize programs and services offered; certain opportunities may not be pursued if resources do not allow.

Timeframe: On-going on an annual basis.

Critical success factors:

- MSL programs develop annual work plans that align with the MSL strategic plan. Work plans identify measurable goals and objectives as well as resources, including IT resources need to successfully accomplish the goals.

   Supporting Objective/Action

Objective 1-4 Encourage staff from all library programs to effectively collaborate across programs in order to use all library information system resources to meet the goals of MSL.

Business driver: Limited and/or reduced personnel and financial resources means that MSL must find efficiencies in order to continue to maintain or improve services to meet user demands; there are efficiencies to be gained by taking advantage of the resources available in the unique programs managed by MSL.

Benefits: MSL staff benefit by having the resources we need to carry out our work without overextending limited personnel and financial resources. Further benefits may be found by effectively collaborating across programs as this goal is pursued. MSL partners and patrons benefit by having reliable access to high quality content and services with more unique resources to meet a broader array of user expectations. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government.

Risks: Limited staff and financial resources mean that MSL staff must prioritize programs and services offered; certain opportunities may not be pursued if resources do not allow.

Timeframe: Ongoing

Critical success factors:

- MSL will share expertise that exists in a variety of programs for the benefit of all staff. Examples of this cross program collaboration include a map application developed to report staff programming activity from the Statewide Library Resources Division and a training portal that promotes trainings available from all MSL programs;
- MSL is able to offer enhanced and new services and content to its users, ultimately benefitting local communities and libraries

Goal Number 2: Develop and maintain current and new information systems that are properly aligned with MSL program and service needs

IT Goal 2 Develop and maintain current and new information systems that are properly aligned with MSL program and service needs

Description: This on-going goal ensures the development and maintenance of information systems that are properly aligned with MSL program and service needs and

appropriately deploys information technology solutions within the scope of MSL strategic plan and personnel and financial resources.

Benefits: MSL staff benefit by having the resources we need to carry out our work without overextending limited personnel and financial resources. Information systems and the associated resources are clearly justifiable; therefore, personnel and financial resources are made available to ensure the long term success of the information systems. MSL partners and patrons benefit by having reliable access to high quality content and services. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government.

Supporting Objective/Action

Objective 2-1   Maintain the MSL information technology plan

Business driver: Limited and/or reduced personnel and financial resources means that MSL must prioritize programs and services; thoughtful consideration to the corresponding information systems is a critical element for successful strategic planning.

Risks: None

Timeframe: Ongoing

Critical success factors:
- MSL complies with the state IT planning cycle;
- MSL's information technology expenditures in this period align with the agency IT plan and the State of Montana Information Technology Plan.

Supporting Objective/Action

Objective 2-2   Participate in IT governance

Business driver: MSL must participate in IT governance and collaborate with communities of interest due to limited resources as well as the rapid pace of change in political and technological environments. Because of our size and scope, MSL also has a unique opportunity to influence the development of the state technology environment.

Benefits: MSL will benefit from improved IT management through best practices, peer networking, collaborative problem solving and cost effective IT resource allocation through collaborative purchasing and services development.

Risks: Limited staff means that MSL cannot participate at all levels of IT governance; because of our small size participation can feel fruitless when MSL feels are needs are not heard.

Timeframe: Ongoing

Critical success factors:
- Director or designee attends IT Board meetings, and chairs the Montana Land Information Advisory Council;

- IT lead attends IT Managers Council;
- Geographic Information managers attend GIS Managers Forum;
- Web Manager and web programmers attend Web Developers meetings;
- MSL will be involved in future IT committees and communities of interest;
- MSL will be involved with local library efforts to collaboratively address limited resources in this area.

Supporting Objective/Action

Objective 2-3   Consult with Department of Administration when evaluating new information systems to support the MSL strategic plan; MSL is evaluating the cost and service impact to move our data storage and production server environment to the State of Montana Data Center (SMDC). If warranted MSL will seek legislative funding authority to increase fixed costs through the State Information Technology Services Division (SITSD) rate setting process to fund a migration to the SMDC.

Business Drivers: Overall changes in Library industry and patron expectations may be new to the Department of Administration (DOA), and in some cases at odds with the State IT infrastructure. In these instances communication with DOA is critical to MSL business success. As SITSD services become more affordable it is in MSL's best interest to evaluate efficiencies that may be gained by making use of enterprise services.

Benefits: Montana taxpayers benefit through tax savings associated with appropriate use of IT in government. MSL partners and patrons benefit by having access to high quality content and services. MSL staff benefit by having the resources we need to carry out our work.

Risks: Failing to consult with Department of Administration may introduce time delays or additional costs. Compliance with SITSD recommendations may reduce MSL's ability to meet industry standards or patron/partner expectations.

Timeframe for completion: Ongoing; evaluation of SMDC data storage options will take place spring of 2016. If warranted, migration will occur in the third quarter of 2016.

Critical Success Factors:
- MSL information technology projects receive endorsement or approval by SITSD;
- MSL solutions are cost effective, timely and meet industry standards as well as patron/partner needs and expectations.

- MSL benefits from efficient service delivery that meets industry standards.

Supporting Objective/Action

Objective 2-4   Comply with all relevant Enterprise IT standards and policies that align with MSL business needs and support MSL programs and services

Business Drivers: MSL must comply with the Montana Information Technology Act.

Benefits: Montana taxpayers benefit through tax savings associated with appropriate use of IT in government. Government employees, library patrons, citizens and businesses benefit by having reliable access to high quality content and services. MSL employees benefit by having an IT infrastructure that is secure and reliable in order to carry out our work.

Risks: Compliance may result in reduced flexibility to meet patron and partner expectations. Noncompliance may result in increased control from SITSD.

Timeframe for completion: Ongoing

Critical Success Factors:
- MSL passes compliance audits;
- MSL is able to negotiate exceptions to Enterprise standards when needed to meet industry requirements or patrons' expectations.

Supporting Objective/Action

Objective 2-5   Continue to make use of the Agile Project Management process as a means to proactively manage information systems and projects;

Business Drivers: Limited and/or reduced personnel and financial resources means that MSL must find efficiencies in order to continue to maintain or improve services to meet user demands; project management is a planning and implementation tool that is designed to find and create efficiencies through more effective project planning and oversight.

Benefits: Montana taxpayers benefit through tax savings associated with appropriate use of IT project management in government. MSL partners and patrons benefit by having access to high quality content and services that are more efficiently provided. MSL staff benefit by having the resources we need to carry out our work which is more efficiently managed through project management.

Risks: Project management requires a commitment of already limited personnel time and financial resources however efficiencies to be gained have been shown to outweigh the costs.

Timeframe for completion: Ongoing

Critical Success Factors:
- MSL trains additional staff on the Agile process;

- MSL will continue to make use of the Agile process to manage all significant IT projects.

Supporting Objective/Action

Objective 2-6   Proactively manage of hardware and software assets

Business Drivers: Proactive management of hardware and software assets is essential to assure continuity of services provided to MSL employees, patrons and partners.

Benefits: Proactive management of hardware and software assets ensures that MSL staff has a stable desktop computing environment as well as a stable, secure data center. MSL partners and patrons benefit by having reliable access to high quality content and services provided through stable information systems. Montana taxpayers benefit through tax savings associated with appropriate management of hardware and software assets.

Risks: Reduced financial resources means that MSL may not have the financial resources necessary to keep up with replacement cycles, maintenance plans or warranties. Some patron services may be compromised if systems go out of warranty.

Timeframe for completion: Ongoing

Critical success factors:
- MSL staff maintain current documentation on all systems and applications;
- MSL staff maintain and review back-up routines monthly;
- MSL staff develop, maintain and test fail-over systems for critical information systems;
- MSL ensures that all business critical hardware and software assets are protected by maintenance plans and warranties;
- MSL replaces hardware on a five-year cycle and software as needed and as budget allows;
- MSL supports a remote desktop environment for telework staff that enables them to effectively work from anywhere;
- MSL maintains software license compliance across all MSL platforms;
- MSL invests in mobile technology where appropriate;
- MSL invests in accessible mobile technology to support the needs and training of patrons with visual and physical disabilities;
- MSL invests in the maintenance and upkeep of the travelling laptop labs and the desktop training lab;
- MSL keeps conference rooms updated with current technology tools to facilitate collaborative use of these spaces both by MSL staff and programs as well as by MSL partners that use our facilities.

Supporting Objective/Action

Objective 2-7   Though not directly in support of MSL business operations, MSL will seek support from the Governor's Office and the Legislature for funding to make high speed broadband more affordable for libraries. If funded, a contracted public/private partnership is envisioned that would be administered through an outside entity.

Business Drivers: Fewer than five Montana libraries meet the benchmarks for high speed broadband access recommended by the Federal Communications Commission E-rate modernization order.

Benefits: If funded, libraries across the state would be able to afford highspeed broadband to support both library IT and service needs and patrons online lifelong learning, business, education, economic, and other goals.

Risks: If unfunded, Montana libraries and communities will continue to lag far behind the national average for broadband access thus impacting the state's ability to compete in all manner of areas.

Timeframe for completion: Dependent on funding

Critical success factors:
- MSL secures funding to create a statewide broadband procurement vehicle;
- Through that vehicle, libraries subscribe to increased broadband speeds with minimal impact to their overall budgets.

Goal Number 3: Expand and improve online information services

ITG 3   Expand and improve online information services

Description: Expand and improve online information services that support MSL programs and services, and the programs and services of MSL patrons, partners and related communities of interest.

Benefits: MSL staff, Montana's libraries, government employees, citizens and businesses obtain high quality information services via the web.

Supporting Objective/Action

Objective 3-1   Improve the overall design and usability of MSL websites and services

Business driver: MSL makes available a significant amount of information data and services via the web. The usability of the MSL websites must be carefully considered to ensure that our web presence effectively delivers this information to MSL patrons and partners.

Benefits: MSL staff, Montana's libraries, government employees, citizens and businesses obtain high quality information services via the web no matter their location or means of access.

Risks: Limited MSL staff to manage web presence means that to implement this goal, other MSL priorities may have to be put on hold.

Timeframe: Ongoing

Critical success factors:

- MSL maintains our in-house content management system on current technology;
- MSL continues to make use of subject matter experts as web leads to maintain the currency and appropriateness of information delivered via the web;
- Incorporate web 2.0 technology into MSL web sites and applications
- Provide on-going training for MSL staff on the use of mobile, cloud and social media tools;

Supporting Objective/Action

Objective 3-2   Participate in formal State activities that, when well supported, improve the efficiency of online data and services delivery;

Business driver: MSL must participate in formal State activities and must collaborate with communities of interest due to limited resources as well as the rapid pace of change in users' expectations for online services. Because of our size and scope, MSL also has a unique opportunity to influence the development of the state web environment.

Benefits: MSL will benefit from improved web management through best practices, peer networking, and collaborative problem solving.

Risks: If State activities are not well supported, participation may result in additional workload and loss of productivity.

Timeframe: Ongoing

Critical success factors:

- MSL staff will participate in the GIS Manager's Forum;
- MSL staff will participate in the State Web Developer's meetings;
- MSL staff will continue to rely on the Network Advisory Council, the Montana Land Information Advisory Council, and the NRIS Advisory Council's expertise to shape MSL online services for our patrons and partners.
- MSL staff will participate in national forums and communities whose focus is the growth of delivery of online services, keeping up to date with emerging technologies, issues and standards.
- MSL will expose geographic content via map galleries on the MSL and mt.gov web sites.

- MSL will contribute to and offer assistance as necessary to maintain the msl.mt.gov map gallery and will work to ensure current, relevant content from MSL and other agencies populate the map gallery.
- Seek additional opportunities to improve mt.gov and provide exposure to MSL resources by promoting relevant items on the state web site.

Supporting Objective/Action

Objective 3-3   Collaborate with partners on projects and services which increase citizen access to public information and library content

Business driver: MSL patrons and partners demand that information and services be made available via the web. Collaboration with partners will enable us to increase citizen access to public information and library content in ways that is most meaningful to key constituents and in a manner that is most cost effective.
Benefits: MSL will benefit from improved web management through best practices, peer networking, and collaborative problems solving.
Risks: None
Timeframe: Ongoing

Supporting Objective/Action

Objective 3-4   Provide online interfaces that enable partners to contribute feedback regarding MSL projects and services as well as content to MSL collections

Business driver: MSL patrons and partners use social media to communicate share and discover information. MSL must participate in this environment to remain relevant to patrons and partners.
Benefits: MSL staff, Montana's libraries, government employees, citizens and businesses obtain high quality information services via the web no matter their location or means of access. In the social media and web 2.0 environment, these same constituents have the ability to share information, comment on information, provide feedback to MSL about MSL programs and services, and ask questions and receive information from MSL staff.
Risks: There is some concern regarding the risk to information systems security as a result of the use of social media and other web 2.0 technology.
Timeframe: Ongoing
Critical success factors:
- Continue to increase the use of social media that enable user participation in the activities of MSL and that allow for the contribution of user feedback and content.

Supporting Objective/Action

Objective 3-5   Create and deliver web services to serve MSL data and the data of MSL partners

Business driver: MSL patrons and partners, particularly those in state and federal government, rely on web services as a means to cost effectively manage and consume data.

Benefits: MSL staff, Montana's libraries, government employees, citizens and businesses obtain high quality information services via the web.

Risks: There is some concern regarding the risk to information systems security as services are consumed.

Timeframe: Ongoing

Critical success factors:

- MSL will develop common applications and web services to better serve MSL information resources. Examples include a new release of the Montana Library Directory and the Cadastral application;
- MSL will continue to maintain common delivery mechanisms for all Montana Spatial Data Infrastructure layers maintained by MSL including web services that meet the needs of MSDI users;
- MSL will expand the use of e-pass as a means to provide secure authentication to all applicable MSL applications;
- Continue to explore the use of Adobe Content Server as a tool for providing access to an ebook collection. This work may be done in partnerships with national cooperatives currently under investigation.

Goal Number 4: Develop business continuity and security programs

ITG 4   Develop business continuity and security programs

Description: MSL will develop business continuity and security programs that ensure the integrity of MSL data, protect the privacy of patron information and ensure that MSL services will be available in a timely manner in the event of a disaster.

Benefits: MSL staff benefit by having confidence that critical data is maintained and available in the event of information system breakdown. MSL partners and patrons benefit by having reliable access to high quality content and services which are only minimally impacted in the event of information system breakdown. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government which includes appropriate resource management afforded through business continuity and security programs.

Supporting Objective/Action

Objective 4-1　　Implement a NIST-compliant Information System Security Program

Business driver: MSL manages a significant number of information systems that contains and serves proprietary data and/or that provide critical services to MSL partners and patrons around Montana and beyond. Without an information system security program in place, MSL runs the risk of losing data and infrastructure to support these critical services.

Benefits: MSL staff benefit by having confidence that critical data is maintained and available in the event of information system breakdown. MSL partners and patrons benefit by having reliable access to high quality content and services which are only minimally impacted in the event of information system breakdown. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government which includes appropriate resource management afforded through business continuity and security programs.

Risks: Limited MSL staff to manage information system security means that to implement this goal, other MSL priorities may have to be put on hold.

Timeframe: Ongoing

Critical success factors:

- Within the scope of available resources, MSL will address critical needs identified by STISD's Information Security Advisory Council.

Supporting Objective/Action

Objective 4-2　　Develop an agency wide disaster recovery plan

Business driver: MSL manages unique (and in some cases one-of-a-kind) print collections as well as a significant number of information systems that contain and serve proprietary data and/or that provide critical services to MSL partners and patrons around Montana and beyond. A disaster recovery plan is critical to define salvage and recovery priorities and to guide emergency response in the event of a disaster.

Benefits: MSL staff benefit by having confidence that critical collections and data are maintained and available in the event of a disaster. MSL partners and patrons benefit by having reliable access to high quality content and services which are only minimally impacted in the event of disaster. Montana taxpayers benefit through tax savings associated with appropriate use of state resources and IT in government which includes appropriate resource management afforded through a disaster recovery plan.

Risks: Limited MSL staff to manage a disaster recovery plan means that to implement this goal, other MSL priorities may have to be put on hold.

Timeframe: MSL will have a complete disaster recovery plan by December 2017. A disaster recovery team will be trained by July 2018.

Critical success factors:
- MSL collections will be evaluated and rated for salvage priorities;
- MSL staff will be trained regarding how to respond to disasters;
- MSL will collaborate with other similar agencies including the Montana Historical Society Research Center to determine ways to support mutual needs in this area.

Goal Number 5: Improve MSL's ability to attract and retain a qualified IT workforce

ITG 5   Improve MSL's ability to attract and retain a qualified IT workforce.

Description: The agency will take steps to improve recruitment and retention of IT personnel.

Benefits: MSL's IT staff benefit through opportunities for career growth, learning, and professional development. Employees are recognized, valued, and respected for the contributions they make and are compensated fairly for their work. MSL also benefits through a decreases in employee turnover and loss of organizational knowledge.   And critical MSL information systems areas are managed with cross-trained support.

Supporting Objective/Action

Objective 5-1   Use IT staff in ways that support the MSL Strategic Plan and promote opportunities for collaboration and cross-training both among internal colleagues as well as with MSL partners

Business Drivers: MSL must increase efficiencies through creative opportunities for collaboration and cross-training due to shortage of FTE in IT support.

Benefits: MSL benefits from backup support for critical functions and from efficiencies gained by pooling talents. MSL patrons benefits by having reliable access to MSL programs and services that is not impacted by insufficient IT support.

Risks: Current organizational funding model inhibits cross program collaboration.

Timeframe for completion: Ongoing

Critical Success Factors:
- MSL will continue to implement best practices for documentation, services architecture and other components for successful IT support become institutionalized;
- MSL staff report a benefit from increased opportunities for collaboration among IT personnel;

- Staff and patrons report benefit from improved responsiveness to IT service requests.

Supporting Objective/Action

Objective 5-2   Develop MSL IT staff through investment in training and professional development. Implement training plans for employees that align with MSL's projected information system needs.

Business Drivers: MSL often finds it difficult to retain IT employees particularly due to low wages compared to market rates; staff turnover results in loss of organizational knowledge, slow response to IT service requests and inability to pursue MSL goals and objectives that have significant IT components.

Benefits: Opportunities for training and professional development are positive rewards and incentives for staff in lieu of financial compensation. Professional development and training often leads to greater opportunities for collaboration and to find work efficiencies.

Risks: MSL may not have financial resources to provide training opportunities for all IT workers. MSL may not be a large enough agency to implement competency-based pay or career ladders for IT employees.

Timeframe for completion: Ongoing

Critical Success Factors:
- MSL IT staff complete a minimum of one training course and/or attend at least one professional conference that supports MSL programs and services annually;
- Annual performance reviews document training plans;
- MSL programs and services benefit from reduced employee turnover.

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11.   IT Projects

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Item	Description
Project name	Talking Book Library Digital Conversion Project
Project/program purpose and objectives	The 2013 Legislature approved $25,000 (OTO) funds from July 1, 2013-June 30, 2014, to support a part-time temporary hire to convert Montana

	analog cassette titles to digital format. During that time 25%, or 265, of the cassette collection was converted, leaving 75%, 795 titles, yet to be converted. Of the 265 books converted, 80-100 still needed final editing before receiving approval from the National Library Service (NLS) for patron circulation. It was necessary to spend significant time initially providing the necessary training on existing and necessary new software, hardware and duplication resources, ultimately reducing the overall time converting titles. Funding from this EPP request would be used to: 1) Fund digital conversion and final editing of Montana audio books and magazines from analog to audio digital. 2) Assure that MTBL digital titles meet the National Library Service (NLS) audio digital standards requirements and quality assurance review process. 3) Apply the NLS security standards for acceptance of Montana recordings to be uploaded to the NLS <u>B</u>raille and <u>A</u>udio <u>R</u>eading <u>D</u>ownload (BARD) service. 4) Convert existing audio analog masters to digital audio cartridges and edit the digital masters for patron circulation and BARD upload. This work will provide all nationwide talking book library patrons with direct free download access of Montana recordings, regardless of which state in which the local material was recorded.
Estimated start date	July 2017
Estimated cost	$120,000
Funding source - 1	One time only EPP Request
Annual Costs upon completion	Data storage costs would be included in the agency's data storage needs.

12.   Security and Business Continuity Programs

MSL is in the process of implementing an agency-wide information security management program compliant with §2-15-114, MCA and State Information Technology Systems Division

Information Security Programs policy with adoption of the National Institute of Standards and Technology (NIST) Special Publication 800 series as guides for establishing appropriate security procedures. This is in alignment with the State of Information Technology Service's direction for an enterprise approach to protect sensitive and critical information being housed and shared on State and/or external/commercial information assets or systems.

As described in NIST SP 800-39, the agency will develop and adopt the Information Risk Management Strategy to guide the agency through information security lifecycle architecture with application of risk management. This structure provides a programmatic approach to reducing the level of risk to an acceptable level, while ensuring legal and regulatory mandates are met in accordance with MCA §2-15-114.

MSL's information security management program is challenged with limited resources; manpower and funding. MSL is working through the recently adopted baseline security controls to identify specific vulnerabilities which may require new policies, procedures, equipment, and/or personnel positions.

Continuity of Operations (COOP) Capability Program Description
In 2010-2011 MSL staff completed an initial disaster recovery plan using the cultural institution planning tool, D- Plan. More work needs to be done to prioritize needs outlined in this plan for recovery within the agency, to assign specific staff to critical disaster recovery roles and to align the plan with SITSD's Continuity of Operations Program. MSL staff has completed initial training on SITSD's Living Disaster Recovery Planning System (LDRPS) which will provide the plans and structure to facilitate response and recovery capabilities to ensure the continued performance of the State Essential Functions of Government. This program involves two Blocks of focus; the first is to complete the Business Continuity Plans (BCP), the second Block works on the specific business processes or activity plans such as MSL's Emergency Action Plans (EAP), and disaster recovery plan. This program is not a standalone process in that information which is identified and recorded under this structure can and often exists in the Records Management Program and associates with Information Security Management Program requirements.

Future COOP Program Plans
MSL's continuity of operations capability program is challenged with limited resources; manpower and funding. Over this strategic period and within existing resources, MSL plans to complete and test our disaster recovery plan and to more fully align our documented disaster recovery plan with LDRPS.

Public Records – Agency Records Management Duties:
MSL takes pride in how records are maintained and made accessible to the public. All electronic records will be retained and disposed of in accordance with general records retention schedules, agency records retention schedules, and/or federal retention requirements.   The MSL records manager is developing an agency records plan in conjunction with MSL managers. MSL looks forward to an opportunity to benefit from an enterprise level records management system.

13. Planned IT Expenditures

	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
IT personal services*	1,525,520	1,549,687	1,596,178	1,644,063	1,693,385	1,744,186
IT operating expenses	462,047	468,880	475,816	482,856	490,002	497,256
IT initiatives	0	25,000	120,000	0	0	0
Other	0	0	0	0	0	0
Total	1,987,567	2,043,567	2,191,994	2,126,919	2,183,387	2,241,443

*Personal services budget for all FTE included in Volume 10. In addition to the four FTE considered the MSL IT support team, these FTE include GIS Analysts and staff who provide technology consulting, data, and infrastructure support for libraries around Montana

14. Administrative Information

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