



State of Montana

**Fish, Wildlife & Parks IT Strategic Plan
2014**



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1. Executive Summary

Fish, Wildlife and Park's mission dovetails with two of the state's business drivers of jobs and efficient/effective government. Given the significant economic impact of tourism and recreation in the state, FWP's program decisions can have a profound effect on both business drivers and need to be handled in the most efficient and effective manner possible.

FWP's technology program supports these goals by providing technology solutions that are specifically tailored to the natural resource needs of the department. while at the same time taking advantage of commodity technology services available throughout the enterprise. This allows the FWP Technology Services Division (TSD) to focus on providing the highest value natural resource technology solutions possible to assist the department in the efficient execution of its mission.

Through our staff's technical expertise, TSD will deliver sound technical solutions that are in alignment with agency business drivers and state IT strategies, and will implement those solutions thoughtfully and responsibly to achieve the greatest return on investment.

2. Environment, Success, and Capabilities

"Montana Fish, Wildlife & Parks, through its employees and citizen commission, provides for the stewardship of the fish, wildlife, parks, and recreational resources of Montana, while contributing to the quality of life for present and future generations" – FWP Mission Statement

FWP has the responsibility and rare privilege of being the custodian of some of the premier natural resources in the world. Montana enjoys copious amounts of fish, wildlife, spectacular scenery, and a rich recreational and cultural heritage. With these resources comes a very passionate constituency that expects to be involved in the business of managing and preserving the state's outdoor resources.

FWP has adopted the following principles to guide the department in executing its responsibilities:

- We will maintain the long-term viability of Montana's natural, cultural, and recreational resources.
- We will actively involve people in decisions that affect them; help people to participate by providing them with credible and objective information; and, develop programs with a clear understanding of public expectations for FWP service.
- We will serve as an advocate for responsible management and for equitable allocation of public use of the limited resources which we are entrusted to manage.
- We will manage fish and wildlife resources with pride in Montana's hunting and angling heritage.

- We will create and strengthen working partnerships with individuals, organized groups, and other natural, historic, and cultural resource management agencies.
- We will use innovation and technology to improve our services.

The business climate the department operates in presents unique challenges. The agency is funded in large portion by user fees, and that revenue stream is in a state of uncertainty. This funding model is designed for the agency to “break-even” over time, typically a ten year period or so, and the agency is currently in the negative portion of that model. An advisory committee has been engaged to determine the best solution to resolve the revenue concerns of the department. External pressures from citizens, constituent groups, and other government entities contribute to an environment that requires the department to make sound scientific and policy decisions in a manner transparent to and involving the public.

3. IT Contributions and Strategies

TSD is tasked with ensuring that the technology program at FWP provides effective, efficient technology solutions to the department. TSD’s strategy to achieve these goals is focused on three areas:

- 1.) **Technical Expertise** – TSD strives to hire and retain the most qualified technology staff available. TSD invests heavily in staff development to ensure a high quality and robust technical base.
- 2.) **Business Alignment** – TSD works tirelessly to understand the business processes of the department’s programs . TSD actively seeks opportunities to improve or assist programs through the thoughtful and responsible application of technology to natural resource management.
- 3.) **Efficient Execution** – TSD implements technological solutions using industry best practices, well-trained staff, and in-depth understanding of the agency’s business processes to deliver solutions in the most cost-effective and efficient manner possible.

This approach reduces costs, provides predictable results, and contributes to the success of the agency’s overall mission. Further, it ensures FWP’s support and conformity to state IT strategies through delivering quality technology solutions in the form of efficient and cost effective results, while maintaining the natural resource focus crucial to the success of FWP technology initiatives.

4. IT Principles

FWP has adopted a number of core principles to guide the application of technology to mission of the department.

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

- Unwarranted duplication will be minimized by sharing data, IT infrastructure, systems, applications and IT services.
- Montana will use shared inter-state systems to minimize IT expenditures, improve service delivery and accelerate service implementation.
- 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
- IT resources will be used in an organized, deliberative and cost-effective manner.
- IT systems will provide delivery channels that allow citizens to determine when, where, and how they interact with state agencies.
- Risk mitigation is a priority for protecting individual privacy and the privacy of IT systems information.
- Whenever practical, IT will use solutions that provide independence from a single vendor, utilize open source or open standards.
- IT projects must contribute to user empowerment and efficiency.
- Systems must provide a high-quality of service while retaining enough flexibility to adapt to changing business needs without complete replacement.
- IT resources must be deployed in a cost-effective manner with emphasis placed on projects with a potential for re-usability.

5. IT Governance

FWP employs a tiered governance model to ensure that technology decisions for web, GIS, or application development, projects requiring new or significantly expanded technology infrastructure, development, or service offering are consistently in alignment with agency business goals and objectives and provide maximum value to the department. This process consists of:

- 1.) Intra-division review and prioritization
- 2.) Technology Services Projects Bureau – provides business case development assistance, scoping and cost estimates to FWP Divisions and the Technology Steering Committee.
- 3.) Technology Steering Committee – comprised of program executives and the FWP CIO; charged with evaluation of technology proposals in accordance with the agency strategic

- goals and initiatives. This group meets quarterly to review progress and make continued recommendations to the Director's Office regarding the technology work plan.
- 4.) Director's Office – Reviews Technology Steering Committee recommendations and provides final approval to the technology work plan..

Governance for strategic technology direction and the service delivery functions are the responsibility of the FWP CIO and Technology Services Bureau Chiefs. Decisions in these areas are made via collaborative process between the bureau chiefs and the FWP CIO. Briefing documents outlining the issue and suggested course of action are submitted to the team and a recommendation made to the CIO.

FWP uses two distinct committees to provide in-depth evaluation of technology proposals and make recommendation to the CIO or the Technology Steering Committee.

The Data Standards Committee analyzes agency wide needs and requirements regarding agency collected and managed data. Recommendations are made to the CIO to ensure consistency in collection, formatting, and storage to ensure data can be used for purposes beyond its initial collection wherever possible.

The Public Mobile Application Proposal Committee analyzes proposals for public mobile applications. Recommendations are made to the Technology Steering Committee whether to move forward with a proposal project or not.

6. IT Financial Management

Fish, Wildlife, and Parks is funded almost entirely with proprietary funds generated from the sale of hunting and fishing licenses or from federal funds apportioned to the state based on license sales. TSD is funded through a combination of general license revenue and overhead charged to federally funded projects.

Technology budgets at FWP have been centralized for nearly ten (10) years with TSD managing the budgets for capital expenditure, operations, and personal services costs specific to technology. This contributes to an agency centric approach to technology acquisition, maintenance and replacement, as opposed to each individual program implementing its own strategies and methods to accomplish these tasks. With the primary FWP revenue stream (license sales) in question, the agency's technology budgets have been reduced during the FY14/15 bi-ennium. Further reductions are possible in the FY16/17 bi-ennim.

7. IT Services and Processes

TSD provides a wide variety of technological and administrative services and support to the department to further the goals and objectives of all programs with FWP.

- Network and Infrastructure Support – servers, storage, backup and recovery solutions, security
- Procurement Support – assist the agency in procuring efficient, cost-effective technology solutions that accomplish agency goals; ensure compliance with MITA and state and department procurement policies and technical standards

- Software Development – in-house development and/or contract development oversight for applications specific to the natural resource management needs of FWP
- Database Operations and Consulting – management and tuning, design and development support, operational security, data integrity, audit tracking and compliance
- Project Management – business case development assistance, project management, process and policy development, standards compliance, AGILE methodology assistance
- GIS Infrastructure Support – server and desktop GIS infrastructure design, implementation, and support.

8. IT Infrastructure, Staffing and Resources

Infrastructure

FWP houses all of its central system computer equipment in the State of Montana Data Center (SMDC) in Helena. This equipment supports all of FWP’s core systems, providing service to both FWP employees and the public at large. FWP employs a high-density blade center and has extensively virtualized its server environment, thereby reducing equipment costs while providing a flexible and efficient infrastructure to deliver services to the department and its stakeholders.

FWP also maintains equipment in each regional office, and some area offices provide file/print and desktop management services to offices that are connected to the SummitNet network. Wherever practical, FWP has collapsed outlying infrastructure into the SMDC to reduce equipment and management costs and issues.

Staffing

TSD consists of 30 FTE organized into three (3) bureau’s and one section. They are: Network Services, Application Development, Projects, and Database Operations Section. Organizational changes were recently made to adapt to changes in organizational needs and changing workload demands.

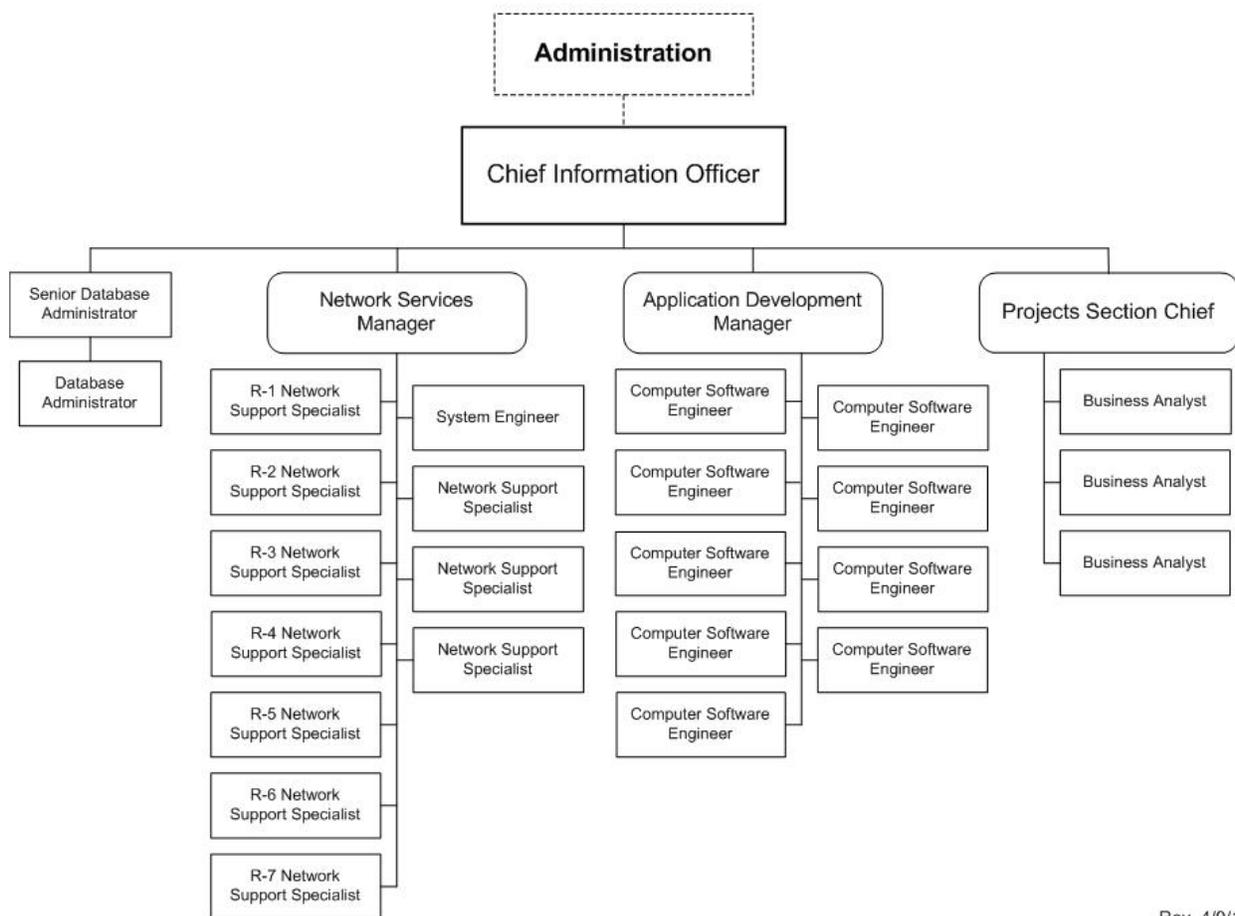
The **Network Services Bureau** consists of 12 FTE in FWP Regional Offices and HQ. These FTE provide desktop and applications support, server and infrastructure management, and handle operational security for FWP’s technology program. Additionally, these FTE support the 350+ license agents that provide hunting and fishing licenses to FWP customers around the state.

The **Application Development Bureau** consists of 10 FTE located in the FWP HQ facility. These FTE provide in-house development of software specific to the natural resource management mission of the department. These FTE also support the ongoing enhancement and maintenance of all FWP developed systems with particular emphasis on the agency’s mission critical Automated Licensing System (ALS).

The **Projects Bureau** consists of 4 FTE located in Helena and provide project management, business analysis, and development support (i.e., testing/deployment coordination) services to FWP’s technology program and its stakeholders. Process and policy development and customer outreach and relations are an important part of this group’s mission, as well.

The **Database Operations Section** consists of 2 FTE located in Helena that provide database management, design, and consulting service to the technology program and the rest of the department. Data integrity, security, and ensuring efficient database design and secure implementations are a critical function of this section.

TECHNOLOGY SERVICES



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9. Risks and Issues

Primary Risk	Probability	Impact	Mitigation Strategy
Staff Turnover	Medium	Medium	The agency will identify technology positions something is missing here for critical impact to the department and ensure a cross-training program is implemented to eliminate critical knowledge being limited to a single position.
Security breach	Medium	High	Our agency has an active security program including, but not limited to, staff training and awareness, data encryption, security and architectural review, and security policies.
Difficulty of hiring qualified technical staff	High	High	Increase pay for positions most affected by this issue.
Misalignment of technology priorities with business objectives	Medium	High	Implementation of IT governance process to maximize consistency with agency strategic goals

Funding Reductions	Medium	High	Continued examination of budgets and processes for additional efficiencies. Capitalize on opportunities that have broad impact or can be utilized to accomplish multiple objectives.
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10. IT Goals and Objectives

FWP is entering both a challenging and exciting time. Increased interest in and scrutiny of the agency’s business make it critical that a sound basis exists for executing the agency’s mission. At the same time, changes in the technological environment have opened up potential opportunities to enhance public involvement with the department, provide more convenient access to the department’s products and services, and provide greater efficiencies through the use of technology. TSD has identified the following goals and objectives important to facilitating the department’s mission:

- **Facilitate data based decision making** – organize and provide access to agency data in a way that allows decision makers to leverage the considerable amount of data the agency holds to make decisions.
- **Eliminate individual data silos** – data has value beyond its initial collection; provide central repositories for data collected by individuals for use by the entire agency
- **Establish control over mission critical systems** – Ensure FWP has sufficient influence over technology used to fulfill the agency’s mission
- **Provide for mobile data collection** – Develop solutions to allow FWP field staff to enter data as it’s collected in the field, eliminating secondary data entry errors and costs.
- **Develop strategies and tools for electronic license delivery** – Provide mobile access for purchase, delivery, and proof of licensure for FWP hunting, fishing, and recreational licenses
- **Enhance officer and public safety through the application of technology to Law Enforcement** – Development and implementation of state-wide radio communications program and integration with the DOJ SmartCop system
- **Facilitate public access to agency data** – Ensure public access to information is a consideration when developing solutions.

11. IT Projects

Item	Description
Project name	FWP Wildlife Information System
Project/program purpose and objectives	This project is to engage additional development resources via the Master Contract for IT services to assist in-house development staff with the addition of core functionality to the Wildlife Information System. This considers functions such as an online harvest survey module, the migration of outdated wildlife contract management systems into current technology stacks, modules to collect and manage wildlife collector permit data, and incorporation of functionality that further enables Wildlife’s ability to perform their strategic goals and objectives. This project will be funded primarily with excess federal grant monies with FWP Technology Services staff time being the match.
Estimated start date	July 2015

Estimated cost	\$400,000
Funding source - 1	EPP Request for one-time-only funding
Funding source - 2	
Funding source - 3	
Annual Costs upon completion	\$30,000 (existing staff costs for maintenance/ongoing enhancement)

Item	Description
Project name	FWP Enforcement Technology
Project/program purpose and objectives	<p>The FWP Enforcement SmartCop Program is a cooperative effort between the Law Enforcement and Technology Services division's of FWP as well as the Montana Department of Justice. FWP's participation in this program with DOJ allows FWP Game Wardens to access a wide variety of law enforcement systems in a mobile fashion while also applying automation to the specific business of natural resource law enforcement.</p> <p>The FWP Enforcement Radio Program is a cooperative effort between the Law Enforcement and Technology Services division's of FWP. As the need for reliable, secure radio communication has increased, the technology has responded by becoming more complex and difficult to implement and support. This initiative is intended to provide an adequate, sustainable radio communications program for the department that provides for efficiency, officer and public safety, and compatibility with state and local law enforcement agencies across the state.</p>
Estimated start date	July 2014
Estimated cost	\$280,690/year
Funding source - 1	Re-direction of existing agency budget
Funding source - 2	EPP Request for long-term funding
Funding source - 3	
Annual Costs upon completion	\$280,690/year

12. Security and Business Continuity Programs

Montana Fish, Wildlife & Parks is in the process of refining a department-wide (agency) information security management program compliant with §2-15-114, MCA and State Information Technology Systems Division *Information Security Programs* policy, and the adoption of the National Institute of Standards and Technology (NIST) Special Publication 800 series serving as guides for establishing appropriate security procedures. The FWP data security program focuses on the employment of multiple layers of security to safeguard agency data and systems. No single measure is relied upon to provide the level of security required by any given system or dataset. The continued monitoring and securing of physical computing infrastructure, appropriate user privilege provisioning, perimeter security measures, risk assessment, and data encryption and obfuscation techniques represent the core tools being employed to provide secure, reliable systems for FWP employees and constituents. In order to facilitate program refinement and complete the implementation of the FWP information security management program, the department has assigned dedicated staff to focus on this critical business area.

As the security program's development progresses, the agency will document the use of specific measures and strategies to fully implement these principles along with the best practices outlined in SITSD's Information Security Policy and the NIST publications to ensure our core goals of Data Protection, Individual Privacy Protection, and robust Disaster Planning.

- Establish a timeline of completion for policy and structure implementation
- Design Information Security plan
- Implement Information Security Plan

As part of the information security management plan, the agency is developing and adopting the Information Risk Management Strategy, in accordance with NIST SP 800-39 to guide the agency through information security lifecycle architecture with the 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.

The agency's program will have four components, which interact with each other in a continuous improvement cycle. They are as follows:

- Risk Frame – Establishes the context for making risk-based decisions
- Risk Assessment – Addresses how the agency will assess risk within the context of the risk frame; identifying threats, harm, impact, vulnerabilities and likelihood of occurrence
- Risk Response – Addresses how the agency responds to risk once the level of risk is determined based on the results of the risk assessment; e.g., avoid, mitigate, accept risk, share or transfer
- Risk Monitoring – Addresses how the agency monitors risk over time; “Are we achieving desired outcomes?”

Continuity of Operations (COOP) Capability Program General Description

For a number of years, Montana Fish, Wildlife & Parks has been working in cooperation with the Department of Administration's *Continuity Services* for the development of our agency's Continuity of Operations Capabilities. Recently, in order to facilitate the accelerated development of the agency COOP program, a full time employee has been dedicated this effort. This program which will provide the plans and structure to facilitate response and recovery capabilities, as well as 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) involving two phases, the second Block works on the

specific business processes or activity plans such as Emergency Action Plans (EAP), Information System Contingency Plan (ISCP), Communications Plans, Incident Management Plans, and more. We are beginning to look at the requirements of these blocks and we are developing a schedule, taking into account, scope, resources, etc. This program is not a standalone process in that information which is identified and recorded under this structure can and often does exist in the Records Management Program and associates with Information Security Management Program requirements.

Integration of these three programs is critical to the confidentiality, integrity, and availability of information, which is associated with each program.

Future COOP Program Plans

- FWP's security officer and security back up officer will attend LDRP training in 2015
- FWP will develop a plan designed to educate program staff on COOP concepts
- Commitment by program staff will be essential for the COOP program to succeed within FWP

13. Planned IT Expenditures

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019
IT personal services	2,345,647.00	2,423,835.00	2,496,550.00	2,571,446.00	2,648,590.00	2,728,047.00
IT operating expenses	2,071,424.00	2,071,424.00	2,133,566.00	2,133,566.00	2,240,245.00	2,240,245.00
IT initiatives	75,670.00	93,150.00	691,150.00	691,150.00	291,150.00	291,150.00
Other						
Total	4,622,741	4,718,679	5,451,260	5,526,162	5,309,985	5,389,442

14. Administrative Information

IT strategy and plan owner: Name: Dustin Temple
 Phone: 444-0358
 Email: dtemple@mt.gov

IT contact: Name: Bobbi Rogrud
 Phone: 444-9073
 Email: brogrud@mt.gov

Alternate IT contact: Name: Jessica Plunkett
 Phone: 454-5863
 Email: jplunkett@mt.gov

Information Security Manager: Name: Dustin Temple
 Phone: 444-0358
 Email: dtemple@mt.gov