



State of Montana

Fish, Wildlife & Parks IT Strategic Plan
2016



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1. Executive Summary

Montana Fish, Wildlife & Parks (FWP) mission is to provide for the management and preservation of the state's fish, wildlife, and state parks resources. In Montana, these resources hold a special place in the lives of our citizens and FWP is constantly striving to improve our stewardship of these resources. To that end, the agency has recently re-examined its vision and charted a new course for the future through the Director's 15 & Forward Initiative.

FWP's 2016 IT plan endeavors to support the agency core values and mission through a number of new initiatives designed to improve the alignment of the FWP Technology Program and the rest of the agency. The IT plan focuses on implementation of value based technology investments, improved governance, and continued modernization of technology products and processes. The result is a technology program tailored to the unique needs of natural resource management while fitting within the overall State of Montana IT Enterprise.

Continued investments in our technology staff will allow FWP to hire and retain quality professionals that are invested in the FWP mission and support the vision of the agency going forward. The focus of the FWP Technology Program is innovative, efficient solutions to natural resource management problems, through the application of technology.

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

“Montana is a place where people have abundant opportunities to connect with the world-renowned fish, wildlife, and state parks resources that define our state. And where a responsive and relevant FWP has the resiliency and public support it needs to lead the way in making sure these resources remain an essential part of Montana's culture, economy, and high quality of life.” - FWP Vision

These eight values guide all of FWP in how it does business every day – with the public it serves, with the resources it manages, and in the capacity for effective management it builds together.

Serve the PUBLIC

We strive to meet public expectations for fish, wildlife, and state parks resource conservation, access, opportunity, services, fiscal responsibility, and involvement in transparent decision-making processes.

Embrace the PUBLIC TRUST

We recognize that Montana’s fish and wildlife are the public’s resources and are held in trust by the state to be managed for the benefit of present and future generations. The opportunity to enjoy and harvest these resources is allocated equitably.

Honor TRADITION and HERITAGE

We value the continued importance of hunting, fishing, trapping, and other outdoor recreation to Montana’s culture and conservation ethic. We honor the cultures of native peoples and value Montana’s vibrant history.

Work with LANDOWNERS

We respect property rights and work collaboratively with landowners to manage fish, wildlife, and state parks resources and the public’s opportunity to enjoy them.

Use SCIENCE

We use the best biological and social sciences to inform and make management decisions.

Provide LEADERSHIP

We provide expertise and direction in fish, wildlife, and state parks outdoor recreation, resource management, and conservation to enhance Montana’s outdoor heritage, economic future, and quality of life.

Provide STEWARDSHIP

We manage for healthy and abundant fish and wildlife populations, improve and protect habitat, and protect and restore cultural and historical resources.

Value Our WORKFORCE

We are all Montana Fish, Wildlife & Parks. We operate as *one* agency, which values and supports all employees. All employees work as a team; value, respect, and support each other; and exemplify high standards of ethics, professionalism, objectivity, accountability, and integrity.

3. IT Contributions and Strategies

The Technology Services Division endeavors to be a strategic partner with core FWP programs to enhance the management of Montana’s Fish, Wildlife and State Parks resources through the development and application of technology. TSD employs the following approach to achieve that objective.

- 1.) **Agency Consultation and Alignment**– TSD works with agency programs to understand their objectives and needs in order to develop opportunities for enhancing program effectiveness through technology.
- 2.) **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.

- 3.) **Thoughtful Application** – TSD strives to execute its mission 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. FWP’s technology program is designed with the state’s enterprise principles, sustainable and achievable service levels, and the department’s mission in mind.

Application of this approach allows FWP to construct and implement a comprehensive technology program that is tailored to the mission of the department while staying consistent with state technology principles and industry best practices.

4. IT Principles

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

- Resources and funding will be allocated to the IT projects that contribute the greatest net value and benefit to FWP staff and constituents.
- Technology decisions will be guided by shared principles derived from the agency’s mission, vision, and goals.
- Unwarranted duplication will be minimized by sharing data, IT infrastructure, systems, applications and IT services.
- FWP will use shared inter-state systems where possible 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 confidential information.
- IT resources will be used in an organized, deliberative and cost-effective manner.
- IT systems will provide delivery channels that allow the public to determine when, where, and how they interact with FWP.
- Mitigation of risks is a priority for protecting individual privacy, confidential data and IT systems.
- Whenever practical, FWP 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.
- Providing public access to FWP data will be considered in all technology decisions.
- Department systems will be designed and developed to allow for Geospatial Information Systems (GIS) functionality by the incorporation of GIS requirements into applications, databases and projects.

5. IT Governance

FWP employs a tiered governance model to ensure that technology decisions are in alignment with agency business goals and objectives and to provide maximum value to the department. Utilizing this governance model, the process allows program executives to set agency priorities for major technology investments using the following process:

1. Intra-division review and prioritization of technology requests.
2. Project concept approval by the Technology Steering Committee (TSC). The TSC, comprised of program executives and the CIO, meets quarterly to review the project status, new technology proposals, and resource capacity; and recommend priorities to the Director's Office for the quarterly Technology Work Plan.
3. Business analysis, feasibility evaluation, and scoping by the submitting program and TSD staff.
4. Evaluation of technology proposals in accordance with the agency/state strategic goals and initiatives by the TSC.
5. Review of the TSC's recommendations and final approval of the technology work plan is provided by the Director's Office

TSD is currently working on refining and maturing the governance process with members of the TSC. The Projects Bureau is collaborating with program executives to refine criteria for establishing priorities for major technology requests using a value-based approach. Additionally, the Projects Bureau and Application Development Bureau are working together to refine and mature the portfolio management process.

While smaller technology requests (i.e., service tickets) do not use the tiered governance model, a review, prioritization, and scheduling process is performed by each of the programs with the assistance of the Projects Bureau. These prioritization decisions are made in accordance with criteria derived from those used to evaluate major technology requests.

6. IT Financial Management

Fish, Wildlife, and Parks is funded almost entirely with state special revenue funds generated from the sale of hunting and fishing licenses, recreational fees, motor vehicle registrations 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. TSD employs some limited staff augmentation funded with federal grant monies.

Technology budgets at FWP have been centralized for over 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. After reductions in the technology budget during the FY15/16 biennium, the outlook for the FWP technology budget is stable with the possibility of rising fixed costs from the Enterprise.

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, desktop deployment/setup, management, 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.
- **Geospatial Tool and Application Development** – provide agency staff with GIS tools and applications specific to FWP programs.
- **Consulting Services** – provide technical expertise and guidance to FWP programs and management in the areas of data management, GIS, data collection, security, records management, continuity planning, etc.

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 to 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 38 FTE organized into four (4) bureau's and two sections. They are: Network Services Bureau, Application Development Bureau, Projects Bureau, Geographic Information Services Bureau, Technology Coordination/Security Section, and the 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 11 FTE in FWP Regional Offices and Department Headquarters. These positions 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 Helena. 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 5 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 **Geographic Information Services Bureau** consists of 8 FTE located in Helena that provide geospatial data acquisition, management, analysis, dissemination and education for the department and the public. Staff is also responsible for the development and maintenance of web mapping applications used by staff and the public.

The **Database Services 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.

The **Technology Coordination Section** consists of 1 FTE located in Helena that provides administration of the FWP IT Security Program, Records Management Program, and servers as the agency Continuity of Operations Program Coordinator.

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	Low	High	Implementation of IT governance process to maximize consistency with agency strategic goals i.e. TOP initiative.

Technical/Business Obsolescence	High	High	Continued examination of agency systems and technology for technology or business obsolescence issues.
Technology Service demand exceeds capacity	High	High	Implementations of recommendations from independent assessment of FWP Technology Program resulting in increased efficiency and business alignment.
Rising Fixed Costs	Medium	High	Ensure only essential services are procured from outside sources.
Disjointed Policy/Standards	High	High	Foster collaborative solutions to ensure policy consistency across the agency.

10. IT Goals and Objectives

FWP is entering both a challenging and exciting time. Increased interest in 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:

- **Technology Optimization Project** – An initiative to revamp the technology program through resource re-organization and alignment, business process development and implementation. This will result in improved business alignment through Enterprise principles, increased transparency and communication, and a value based approach to technology investment decisions.
- **Automated Licensing System Review** – Undertake an independent analysis of the Automated Licensing System capabilities and status in light of the agency business goals as they relate to the delivery of licensing products, services, and information.
- **Mobile Computing Solutions** – Identify and develop solutions to facilitate mobile computing for FWP employees to increase efficiency, decrease data entry efforts, and provide for more holistic view of agency data. These solutions need to provide specifically identified business value to the department.
- **Data governance and Security**
 - **Spatial Data Storage Standards** – Design department systems with geo-spatial needs and data as core considerations.
 - **PII Protection** – Develop clear policies to guide the collection, storage, use, and dissemination of personal information.
 - **Eliminate individual data silos** – Data has value beyond the purpose of its initial collection; provide central repositories for data collected by individuals for use by the entire agency and the public. Leverage business intelligence to facilitate utilization of agency data for decision making.
 - **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 more informed decisions.
- **Develop strategies and tools for mobile license delivery** – Provide mobile solutions for purchase, delivery, and proof of licensure for FWP hunting, fishing, and recreational licenses

- **Eliminate Legacy Technologies** – Develop and implement a plan to convert Oracle Forms and .Net developed applications in the FWP technology portfolio to JAVA applications by FY 18.

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 is funded primarily with federal grant monies with FWP Technology Services staff time being the match in-kind.
Estimated start date	July 2015
Estimated cost	\$650,000
Funding source - 1	Federal Pittman-Robertson Grant Funds
Funding source - 2	
Funding source - 3	
Annual Costs upon completion	\$30,000 (existing staff costs for maintenance/ongoing enhancement)

Item	Description
Project name	FWP Smartcop Expansion
Project/program purpose and objectives	After successfully implementing the SmartCop (DOJ administered) program for FWP game wardens and sergeant’s, the utility provided by this system has become so valuable it is necessary to provide FWP investigator’s and Warden Captain’s this functionality. The project will provide standards SmartCop hardware, software, licensing, and DOJ services to these additional fourteen (14) officers.
Estimated start date	July 2017
Estimated cost	\$94,621
Funding source - 1	General License Funds
Funding source - 2	
Funding source - 3	

Annual Costs upon completion	\$33,000 (DOJ maintenance costs)
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12. Security and Business Continuity Programs

Security Program

Montana Fish, Wildlife & Parks (FWP) is continuing the implementation of a new department-wide (agency) information security management program that will ensure compliance with §2-15-114, MCA and State Information Technology Systems Division *Information Security Programs* policies, and the adoption of the National Institute of Standards and Technology (NIST) Special Publication 800 series serving as guides for establishing appropriate the State’s security policies and 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 the program’s refinement and complete the implementation, the effort is managed by the agency’s Security Officer with the support and assistance of Application/Development, Network, and Project bureau staff.

As the security program matures, the agency will formalize the new program’s strategies through policies and procedures to ensure all staff understand IT resource security requirements and the agency’s expectations of adherence to those standards. By formalization, the agency will ensure its statutory and State policy responsibilities are met for Data Protection, Individual Privacy Protection, and Disaster Planning.

Security Program Goals

- Complete the refinement of the new security standards, including user access protocols, and implementation of related policies and procedures
- Develop and finalize an Information Risk Management Strategy

As part of the information security management plan, the agency is continuing to develop an 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 strategy will provide 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 risk strategy will have four components, which interact with each other in a continuous improvement cycle; framework, assessment, response, and monitoring.

Continuity of Operations (COOP) Capability Program

This program involves two Blocks of focus; the first is to complete the Business Continuity Plans (BCP) involving two phases; and the second Block works on the specific business processes or activity plans such as Emergency Action Plans (EAP), Information System Contingency Plan (ISCP), Disaster

Recovery Plans, Incident Management Plans, and more. Elements of this program can and often does incorporate components of the Records Management Program and Information Security Program requirements.

For a number of years, Montana Fish, Wildlife & Parks has been working, in cooperation with the Department of Administration’s *Continuity Services*, on the development of our agency’s Continuity of Business Operations Plans. The Continuity Business Plan Coordinator has made progress in moving this effort forward by providing training and technical assistance to divisional planners and working with the Department of Administration’s Continuity and Emergency Management Office staff.

The Coordinator also works with other agency staff to prepare, implement, and review action or contingency plans; such is the case with EAPs which are managed through the department’s Human Resources Bureau.

COOP Program Goals

- Complete the regional business continuity plans for the Helena regional office
- Initiate the preparation of the regional continuity of business plans
- Develop an educate program for staff on COOP concepts

Public Records – Agency Records Management Duties Program

Currently Montana Fish, Wildlife & Parks is meeting its records management responsibilities through direct management of documents at the divisional level. In order to elevate oversight of these efforts, the department has recently assigned a single staff person to provide a single point of contact for agency staff for guidance and to facilitate communication with the Montana Secretary of State’s office.

The Records Management Coordinator is responsible for ensuring all records, electronic and paper, are retained and disposed of in accordance with Title 2, Chapter 6 MCA, the State’s general records retention schedules, agency records retention schedules, and if applicable, federal records retention schedules.

Records Management Program Goals

- Complete an audit of the department’s adherence to existing records retention schedules
- Develop a training program for staff on the basics of records management
- Develop new data and records retention policies and procedures as needed to improve accessibility and reduce storage space and costs

In Summary

Integration of these three programs is critical to the security, integrity, and availability of information for both the department’s staff and where applicable, the public.

13. Planned IT Expenditures

	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
IT personal services	3,266,085.00	3,386,638.00	3,488,237.00	3,571,446.00	3,592,884.00	3,700,670.00
IT operating expenses	2,352,013.00	2,256,743.00	2,324,445.00	2,394,179.00	2,466,004.00	2,539,129.00

IT initiatives	650,000.00	650,000.00	650,000	650,000		
Other						
Total	6,268,098	6,293,381	6,462,682	6,615,625	6,058,888	6,239,799

14. Administrative Information

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

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

Alternate IT contact: Name: Jerri Lake
 Phone: 444-4558
 Email: jplunkett@mt.gov

Information Security Manager: Name: Rebecca Cooper
 Phone: 444-4756
 Email: rcoper@mt.gov