



State of Montana

Department of Agriculture

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Information Technology Strategic Plan  
2016



**Contents**

- 1. Executive Summary ..... 3
- 2. Environment, Success, and Capabilities..... 4
- 3. IT Contributions and Strategies..... 5
- 4. IT Principles ..... 5
- 5. IT Governance ..... 6
- 6. IT Financial Management ..... 7
- 7. IT Services and Processes ..... 7
- 8. IT Infrastructure, Staffing, and Resources ..... 7
- 9. Risks and Issues..... 8
- 10. IT Goals and Objectives ..... 8
- 11. IT Projects ..... 9
- 12. Security and Business Continuity Programs ..... 11
- 13. Planned IT Expenditures ..... 12
- 14. Administrative Information..... 13

## 1. Executive Summary

Agriculture is one of Montana's most important and economically significant industries. The benefits of Montana's agriculture industry are substantial, from forming the economic base for our rural communities to high quality food products for local, national and international markets. The stated mission of the Montana Department of Agriculture (MDA) is "to protect producers and consumers, and to enhance and develop agriculture and allied industries."

It is necessary for MDA to work with family farmers and ranchers, entrepreneurs, businesses, and agriculture-related industries to take advantage of the technological opportunities available to improve the way they do business. We intend to continue to develop forward-thinking, innovative ways to deliver efficient and effective services to our Montana producers and consumers.

This IT Strategic Plan represents the department's efforts to forecast our information technology needs for the coming biennium as required by the Montana Information Technology Act (MITA) of 2001.

Recent employee turnover and retirement in MDA's Office of information Technology (OIT) has presented an opportunity to closely evaluate the state of IT in the department and identify areas of improvement. MDA is reviewing all aspects of IT – from simple desktop administration and management, to overhauling the department website, to examining the various data management applications it relies on – intending to make continual improvements to mature our information technology infrastructure and enhance the effectiveness of delivering IT services to our staff and the agricultural community while simultaneously promoting the security, integrity, stability, and recoverability of our IT systems and data.

MDA continues our initiative to update our licensing, registration, and enforcement system which will make more of our services available online – something the agricultural community increasingly expects.

MDA will continue to expand our successful IT partnerships and collaborations to maximize effective use of agency funds in supporting the agricultural community. We will investigate, implement and apply appropriate mobile technology to improve citizen and employee access to agricultural information. We will continue to expand our use of Geographical Information Systems (GIS) to provide location based agricultural information for promoting agricultural industries and practices. In addition, we will look for ways to capitalize and expand on our successful electronic grant management system.

Lastly, MDA is actively examining the backup and disaster recovery (DR) needs of the agency and will be making plans to address these needs in the new biennium.

Agriculture is integrating technology at an incredible pace, allowing farmers and ranchers to incorporate more efficient and effective practices. MDA will continue to meet the challenges of implementing these technology initiatives which will allow us to better serve the agricultural community and the citizens of Montana.

## 2. Environment, Success, and Capabilities

Montana Department of Agriculture's business is to support, promote, market, protect, educate and regulate the state's agricultural industry. The department operates more than 30 programs, many funded entirely through user fees. These include regulatory programs that protect producers, consumers and the environment, as well as development and marketing programs to foster growth in Montana agriculture.

The stakeholders for the department's activities include not only the agricultural community of Montana, but also consumers of Montana agricultural products worldwide. The department regularly hosts grain trade teams from Korea, Columbia, Taiwan, Mexico, Japan and the Philippines and has participated in marketing livestock genetics to Russia and South Africa.

The majority of the department's revenue comes from the agricultural community in the form of license, registration and certification fees or producer check-off programs.

MDA is composed of three major divisions:

- The Central Services Division (CSD) provides accounting, budgeting, computer programming, fiscal management, human resources, payroll and benefits, public information, purchasing, property control, records management, systems analysis, training, website administration and legal support to all programs within the department. The CSD's Office of Information Technology (OIT) is responsible for managing the IT needs and services for the department.

Division Goal: Assist management and staff of the Montana Department of Agriculture in meeting the department's mission by providing efficient, knowledgeable, and cost-effective customer service.

- The Agricultural Development Division (ADD) is responsible for administering programs that promote and enhance Montana agriculture. Within the division are three bureaus: the Wheat and Barley Bureau, the Agricultural Development and Marketing Bureau, and the Montana State Grain Laboratory Bureau.

Division Goal: To enhance, expand and diversify Montana's agricultural economy, thereby improving the general economy of the state of Montana by providing services which include market and agri-business development, Growth Through Agriculture grants and loans, wheat and barley research and marketing, agriculture loans, beginning farmer/rancher loans, hail insurance, grain grading and inspection, agriculture literacy and outreach, and administration of agricultural commodity research and market development programs.

- The Agricultural Sciences Division (ASD) provides agricultural, public and environmental services and protection. There are three bureaus within the division: the Commodity Services Bureau, the Laboratory Bureau and the Agricultural Services Bureau.

Division Goal: To provide agricultural producers and consumers, commodity and environmental protection through the administration of the Montana laws and rules in the areas of pesticides, groundwater monitoring, noxious weeds, feeds, fertilizers, seed, anhydrous ammonia, grain commodity dealers, commodity warehousemen, nurseries, produce, honey bees, alfalfa leafcutting bees and other services including organic certification, pest management consulting, laboratory analysis, pest surveys, export certification and quarantines.

In addition, the department receives advice from, and has attached to it, the following boards, councils, and committees:

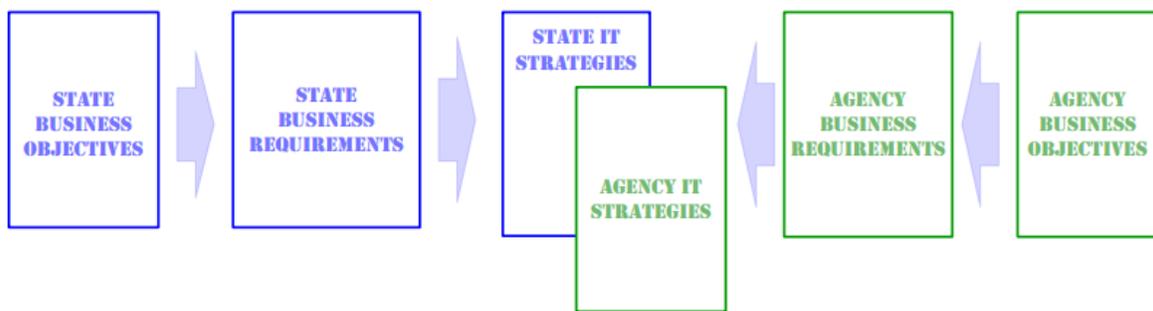
- Agriculture Development Council
- Alfalfa Seed Committee
- Cherry Advisory Committee
- Hail Insurance Board
- Noxious Weed Management Advisory Council
- Noxious Weed Seed Free Forage Advisory Council
- Organic Commodity Advisory Council
- Potato Advisory Committee
- Pulse Crop Advisory Committee
- Wheat & Barley Committee

### 3. IT Contributions and Strategies

The Office of Information Technology (OIT) works to support the state’s agricultural community with services that provide efficient and effective access to governmental services. OIT strives to provide high-quality service and support to all of MDA’s operation in support of the agency mission.

OIT is presently undertaking an effort to bring the department’s state of IT up to modern standards. To this end, we are partnering with the State CIO and SITSD to implement technologies that contribute directly to the core of systems management and administration, utilizing SITSD services to reduce our systems administration burden, and capitalizing on vendor partnerships to streamline IT operations, allowing us to focus on meeting the business needs of the department and the agricultural community it serves most effectively.

MDA will align our 2016 IT Strategic Plan with the 2016 State Strategic Plan for Information Technology to support the common goals of each.



### 4. IT Principles

IT principles govern the decisions and operations of the state’s IT community. They provide touch-points and guidelines to ensure the correct decisions are being made – decisions that will provide the greatest value to Montana’s citizens.

The Montana Department of Agriculture subscribes to the general IT principles as stated in the State of Montana 2016 Strategic Plan for Information Technology.

The majority of Montana’s IT principles have their roots in Montana’s Information Technology Act (MITA).

**BE ACCOUNTABLE**

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

**MINIMIZE DUPLICATION**

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

**SHARE RESOURCES**

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

**IMPROVE BUSINESS**

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.

**USE RESOURCES WISELY**

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

**DELIVER SERVICES**

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

**PROTECT PRIVACY, DATA, AND SYSTEMS**

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

## **5. IT Governance**

The state has established in law, by Executive order and by Agency Executive Order, governance structures such as the Information Technology Board, the Statewide Interoperability Governance Board, the Electronic Government Advisory Council and the Information Technology Managers Council. The purpose of these governance structures is to ensure that the state’s IT investments supporting the business needs of the agencies are done in a cost effective manner.

An agency the size of MDA necessitates direct involvement in the decision making process. IT initiatives are commonly driven by agency programs in cooperation with OIT staff. OIT staff ensures compliance with state standards and provides or coordinates resources for completion of the work requirements. MDA's CIO meets regularly with management to discuss IT initiatives under consideration and projects are authorized by the respective Division Administrator. The Director has the final say on which projects are approved, and what resources can be allocated to the project. The needs and desires of the agricultural community are always balanced against available funding in any IT project decision.

## **6. IT Financial Management**

The Montana Department of Agriculture's Office of Information Technology is located in the Central Services Division. Funding for personnel and operations is from a mixture of state special revenue, general fund, federal, and proprietary funds in HB2. Specific technology initiatives are a direct cost to the program for which they are procured.

## **7. IT Services and Processes**

OIT provides operational and strategic support for all information technology services in the department, including:

- Network services and support
- Desktop/Laptop Services and support
- Helpdesk services
- Application development, maintenance, and support
- Web site and web application development, maintenance, and support
- IT Contract Management
- Data quality and control
- Project management
- GIS system development and support
- IT Purchasing
- Graphics Design

## **8. IT Infrastructure, Staffing, and Resources**

The Montana Department of Agriculture's Office of Information Technology (OIT) consists of the agency CIO, one Network Administrator, and two Systems Analysts. Because of its small size, it is necessary for every member of the team to have a broad skillset in addition to their individual disciplines. All team members are expected to chip in whenever needed and wherever their skillsets allow.

## 9. Risks and Issues

Primary Risk	Probability	Impact	Mitigation Strategy
Recruitment and selection of qualified personnel	High	High	Work with less qualified but motivated and interested employees to help them develop the skills necessary to fill positions within the agency. Provide a challenging and interesting work environment which attracts qualified technical staff.
Critical application failure	Low	High	Develop and implement robust strategies for infrastructure reliability, data protection, and disaster recovery.
Security breach, malware, ransomware	Med	High	Follow security best practices regarding antivirus software, data protection, permissions management. Continue to develop a strong security program involving user education, data encryption, and security policies.
Growing IT service demands with a static, and small IT workforce	High	Medium	The agency will continue to seek out efficiencies and develop partnerships with SITSD, other agencies, and outside vendors to provide IT services where practical.

## 10. IT Goals and Objectives

### 1. Modernize and optimize Information Technology infrastructure

For years, because of budget constraints and staff limitations, the department has relied on stable, but aging technologies to deliver its IT services. In the last year, the department has made great strides in replacing several of these technologies and we intend to continue these efforts to standardize, consolidate and share resources, promote the use of modern technologies and practices, and improve IT and business efficiency.

### 2. Standardize on common systems and platforms

Supporting a wide range of disparate systems, each with their own system requirements, drivers, training needs, support resources, etc., is to be expected in the IT realm. However, any effort to reduce that level by standardizing on a few select systems or technologies can reap huge rewards, especially when confronted with such budgetary and staff limitations as the department has. To that end, we will be evaluating all aspects of our IT infrastructure to identify those areas that are good candidates for standardization.

- Evaluate our choice of workstation brands/models and develop a plan to encourage consistency to reduce support and maintenance needs.

- Review application development and delivery platforms and attempt to consolidate to a single development model if possible.
- Review database standards with a goal of standardizing on a single department platform.

**3. Implement workstation management best practices**

We recently selected Microsoft System Center Configuration Manager (SCCM) to manage workstations. We intend to expand the use of this tool more completely to include workstation imaging, remote assistance, application deployment and management, and software inventory tracking.

**4. Support and enhance department communications.**

The department relies on a variety of methods to communicate with the public and the agricultural industry and community. These include the department website, email, contact lists, promotional publications, social media, etc. Opportunities to improve these methods and incorporate new methods will be actively sought out.

- Completely revise and update the department website, <http://agr.mt.gov>
- Expand the department’s use of social media for information dissemination, promotion programs, and notifications.
- Evaluate options for managing customer and contact relationships.

**5. Secure department data and IT resources**

Implement security best practices and procedures following the National Institute of Standards and Technology (NIST) recommendations to ensure the confidentiality, integrity and availability of the data required by the department to provide services to Montana citizens.

**6. Improve data and information collection efficiency.**

Several department processes involve gathering information manually, on paper, in the mail. We will be evaluating our options to improve the efficiency of these operations through:

- electronically fillable forms
- mobile, offline data collection tools
- online form and application submission processes.

**7. Reduce the use of legacy desktop database systems in favor of enterprise database systems.**

Several database applications have been developed using desktop applications such as Microsoft Access, which provide poor security controls and data quality assurance. Moving these systems to enterprise database systems will provide greater security, access control, data protection, and help ensure data integrity.

**11. IT Projects**

Item	Description
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Project name	Agricultural Licensing System
Project/program purpose and objectives	Upgrade existing Licensing and Registration system to allow web based licensing, registrations, inspections and enforcement activities, including e-commerce and mobile access.
Estimated start date	In progress
Estimated cost	\$580,000
Funding source - 1	State Special Revenue
Annual Costs upon completion	\$26,450

<b>Item</b>	<b>Description</b>
Project name	Online e-Government Montana State Crop Hail Insurance
Project/program purpose and objectives	Supports Montana State Crop Hail Insurance program allowing public to apply, file claims, adjust claims and pay for Hail insurance policies online. Producers will be able to make insurance applications, file claims and make electronic payments with credit, debit or e-Check payments. Insurance adjusters will be able to utilize mobile devices to enter adjusted claim and loss information utilizing both connected and disconnect mobile applications. The Montana State Crop Hail Insurance program is a program unique to Montana. This will be mostly a custom built system with possibly some COTS or open source product integration.
Estimated start date	June 30, 2016
Estimated cost	Resource AGR Labor: \$250,000
Funding source - 1	Proprietary
Annual Costs upon completion	Negligible

## 12. Security and Business Continuity Programs

### Security Program Description

The Montana Department of Agriculture continues to implement a department-wide (agency) information security management program compliant with §2-15-114, MCA and State Information Technology Services Division *Information Security Programs* policy with adoption of the National Institute of Standards and Technology (NIST) Special Publication 800 series as guides for establishing 19 appropriate security procedures. This is in alignment with the State's 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, MDA has developed and adopted the Information Risk Management Strategy to guide the agency through information security lifecycle architecture with application of risk management. The NIST 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 §2-15-114, MCA.

The agency's program has 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?”

The agency's information security management program is challenged with limited resources, notably manpower and funding. While alternatives are reviewed and mitigation efforts are implemented, the level of acceptable risk is constantly challenged by the ever changing technology and associated risks from growing attacks and social structure changes.

MDA intends to concentrate specifically on these items in the coming months:

- Implementation of workstation least user rights
- Mobile device security and management
- Disaster Recovery (DR) plans
- Annual security training for all employees

## Continuity of Operations (COOP) Capability Program Description

Please refer to the State of Montana Continuity Community website at:

<http://continuity.mine.mt.gov/content/MainPageDocs/AgencyBCPPProgress>

## Public Records - Agency Records Management Duties

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.

## 13. Planned IT Expenditures

The Montana Department of Agriculture's Office of Information Technology is located in the Central Services Division. Funding for personnel and operations is from a mixture of state special revenue, general fund, federal, and proprietary funds in HB2. Specific technology initiatives (software purchase, implementation, and maintenance; development; hardware) are a direct cost to the program for which they are procured.

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019
IT personal services	313,840	333,404	343,406	353,708	364,320	375,249
IT operating expenses	60,298	61,106	62,939	64,827	66,772	68,775
IT initiatives			25,000			
Other						
Total	374,138	394,510	431,345	418,536	431,092	444,024

## 14. Administrative Information

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