



Department of Transportation

**Agency Information Technology Performance Report
2017 Biennial Report**

Section 1: An evaluation of the Agency’s performance relating to IT (MCA [2-17-524\(3\)\(a\)](#)).

- Referencing the goals and objectives noted in Section 10 of your 2014 Agency IT plan, please fill in the table below with the information for each goal and objective.
- Please provide an update on the efforts to implement your Agency 2014 IT goals and objectives. Your update may include how a goal/objective has advanced the Agency mission.

GOAL	OBJECTIVES	UPDATE
Implement IT solutions to meet customer needs.	Implement IT systems identified and approved by the MDT Executive.	A variety of new and updated systems have been implemented to help advance the mission of MDT.
	Continue to implement Business Continuity Plans for MDT.	MDT continues to devote resources towards this effort and the continuity plans are being steadily developed.
	Analyze and plan system improvements for the Engineering Division.	A variety of system improvements have been fulfilled in the Engineering Division including the implementation of a new bridge management system and safety management system.
	Support system improvements for MAP21 compliance.	MDT Planning staff are continuing process change implementation.
	Continue the Maintenance Management System project.	This project is in the implementation phase and is expected to be completed in 2017.
	Continue the ePART project.	This project was successfully completed in 2016.
	Continue the Safety Information Management System project.	This project was successfully completed in 2016.
Implement IT Service Improvements.	Implement an electronic records management solution for MDT.	This project has been placed on hold until we have the necessary resources available to assess the enterprise solution to meet our business needs.
	Develop and implement a GIS strategic plan.	This objective was cancelled.
	Develop and implement a web strategy.	This effort was initiated but had to be suspended from a lack of available resources due to the DOA ITSD Convergence project.
	Implement an ISD service portal.	This effort was initiated but had to be suspended from a lack of available resources due to the DOA ITSD Convergence project.
	Develop data management practices and develop a strategy.	This effort was initiated but had to be suspended from a lack of available resources due to the DOA ITSD Convergence project.
	Assess IT Training needs.	IT training needs were successfully assessed and appropriate IT training opportunities were initiated.
	Assess and upgrade existing	MDT engaged in several

	technologies.	technology upgrades. One example is a state-of-the-art Storage Area Network (SAN).
Improve ISD Processes.	Develop and implement a portfolio management process.	This effort was initiated but had to be suspended from a lack of available resources due to the DOA ITSD Convergence project.
	Develop and implement a disaster recovery strategy.	This will be included as part of SITSD's convergence project.
	Develop and implement change management processes.	Change management processes have been successfully developed and implemented.
	Develop and implement decision and communication processes.	Decision and communication processes have been successfully implemented.
	Assess and manage IT risks.	A project was initiated to assess and manage IT risks within MDT. The project has been suspended from a lack of available resources due to the DOA ITSD Convergence project.
	Define the information architecture and technology strategy.	MDT successfully engaged a contractor to help us develop an information architecture and technology strategy.
	Implement project management processes.	A variety of IT project management processes have been successfully implemented within MDT.
	Assess and implement new application development methodologies.	A variety of new application development methodologies have been implemented within MDT.
	Develop a strategy for assessing and migrating old technologies.	This effort has been abandoned because of the DOA ITSD Convergence project.
	Implement a security program.	MDT continues to implement and mature an IT security program.
Research and Develop New Technologies and Services.	Assess and develop mobile computing solutions.	MDT has successfully assessed a variety of mobile computing solutions.
	Assess unified communication technologies.	SITSD has initiated this analysis.
	Assess desktop computing alternatives.	This effort was initiated but had to be suspended from a lack of available resources due to the DOA ITSD Convergence project.
	Assess and implement new endpoint management tools.	MDT has assessed and implemented new endpoint management tools.
	Develop a Software-as-a-Service (SaaS) strategy.	This effort has been cancelled.
	Investigate cloud storage strategies.	MDT has abandoned this objective because of the DOA ITSD Convergence project.

	Investigate file sharing and collaboration tools.	This effort was initiated but has been suspended due to a lack of available resources as a result of the DOA ITSD Convergence project.
	Develop a business intelligence technology strategy for MDT.	MDT has developed and implemented a business intelligence strategy.
Develop the IT workforce.	Provide team collaboration opportunities.	MDT ISD has developed and implemented processes to improve the team collaboration within ISD
	Assess future human resource needs and develop staffing strategies	This effort has begun, but with the DOA ITSD Convergence project, MDT is unsure what direction IT may take in State government, so this has been placed on hold.
	Assess and implement technical and soft-skill training, and provide cross-training opportunities	MDT ISD has assessed training needs and implemented various training opportunities to help promote the growth of our employees.
	Investigate recruitment strategies.	This objective has not been started and won't until we see what impact the DOA ITSD Convergence project has on our workforce.
	Improve and expand career ladder opportunities.	MDT ISD has implemented several improvements to existing career ladders. Additionally, a new career ladder is in development.
	Explore employee incentives and recognition strategies.	MDT ISD implemented several strategies to recognize and incentivize our employees.

Section 2: An assessment of progress made toward implementing the Agency IT Plan (MCA [2-17-524\(3\)\(b\)](#)).

- Please detail progress made toward completing IT projects identified under section 11 of your 2014 Agency IT Plan.
 - Your Agency plan can be found in your Agency folder located at <https://ent-sp1.mt.gov/sites/bienrpt/layouts/15/start.aspx#/Agency%20Information/Forms/AllItems.aspx>.
- Please include project cost, schedule and completion information.

ITEM	DESCRIPTION		ACTUAL AS OF JUNE 30, 2016
Project Name	Program & Project management System (PPMS) Upgrade		
Agency / Division	Department of Transportation / Planning Division, Engineering Division, and Administration Division		
Project / Program purpose and objectives	<p>The Program & Project Management System (PPMS) is MDT's primary tool for managing federal-aid programs and projects. The current PPMS application serves three distinct functions - program management, project management and federal fund management. At present, it is estimated that MDT allocates approximately \$400 million in federal funding (annually) via PPMS.</p> <p>Over time, the PPMS application has lost its ability to adequately meet MDT's business needs - as a result of aging and inflexible architecture with limited capabilities for alteration or adaptation. The system requires dedicated ISD resources in order to maintain basic operations. The current PPMS architecture will likely be unable to integrate with other MDT information systems moving forward (without significant upgrade or replacement).</p> <p>At present, PPMS struggles to produce the Statewide Transportation Improvement Program (STIP) - a federally required fiscal constraint document. Further, PPMS struggles to produce MDT's Tentative Construction Plan (TCP) - which formalizes Montana's five-year federal-aid investment plan.</p> <p>Given the magnitude of the federal funds involved (\$2 billion over five years), it is essential that MDT have the tools to adequately manage these investment decisions. It is reasonable to assume that many hundreds of thousands of dollars can be saved via improved efficiencies and decision-making capabilities. In combination with improved workplace efficiencies (less data entry, less database maintenance, etc.)</p> <p>The alternative (no upgrade or replacement) would put MDT at risk for non-compliance with federal requirements, and will continue to result in increasing staff related costs and STIP/TCP production errors/delay which jeopardize program or project delivery.</p>		
Estimated start date	The project scoping has already begun.	The requirements gathering phase is underway.	
Estimated cost	\$750,000	\$750,000	
Funding source – 1	Agency budget	EPP	
Funding source – 2			
Funding source – 3			
Annual costs upon completion	Unknown	Unknown	

Status of the project as of June 30, 2016. Indicate % completed and status of funds expended.	The requirements gathering phase is underway with the three MDT Division's participating in this project. We anticipate the RFP phase to get underway in 2017.
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ITEM	DESCRIPTION	ACTUAL AS OF JUNE 30, 2016
Project Name	Risk-based Asset Management System Implementation	
Agency / Division	Transportation / Planning Division	
Project / Program purpose and objectives	<p>As a result of MAP-21 legislation, state DOT's must develop and implement risk based asset management plans as a requirement to receive federal participation at the existing rate on National Highway System Projects. MDT has initiated the first phase of the process, which involves developing a risk based Transportation Asset Management Plan. The following step is to implement the results of the plan, which will require upgrades numerous elements of MDT's existing management systems and asset management process (Performance Programming Process - P3) in order to remain compliant with federal regulations. System upgrades needed range from existing management system modifications to accommodate new performance metrics to enhancing the P3 process to accommodate risk based analysis of management system outputs in an integrated interface. Management systems that will need investment or integration include pavement management, bridge management, congestion management, and the linear referencing system.</p> <p>If risk based asset management is not implemented, federal participation in National Highway System projects, under MAP-21's National Highway Performance Program (NHPP), will decline from between 91.24 and 86.58 percent to 65 percent.</p> <p>As an example of the scale of impact if MDT isn't compliant, federal participation would drop by \$2,158, 000 on a \$10 million project, if the federal share is reduced from 86.58 to 65 percent. The NHPP apportionment was \$217.5 million in FFY 2014.</p>	
Estimated start date	<p>The gap analysis for the risk based asset management plan development is underway and scheduled for completion in June of 2014. Plan development and completion is expected in 2015, so implementation would be in FY 2016. Title 23 requires states to have risk based asset management plans in place during the 2nd federal fiscal year following federal rule making processes, which are underway now and slated for completion in summer of 2015.</p>	
Estimated cost	\$750,000	
Funding source – 1	<p>EPP -(Costs associated with risk based asset management plan development and implementation are eligible for federal funding under the National Highway Performance Program and the Surface Transportation Program. Federal program funds require non-federal match.)</p>	

Funding source – 2		
Funding source – 3		
Annual costs upon completion	Unknown	
Status of the project as of June 30, 2016. Indicate % completed and status of funds expended.	Initial development of MDT's Transportation Asset Management Plan was completed in December 2015 identifying the needed asset management program enhancements including upgrades to the bridge management system, pavement management system, and performance programming system. Business requirements gathering for the performance programming system are underway with approximately 5% of overall HB 10 authority for risk based asset management expended to date and 5% completion.	

ITEM	DESCRIPTION	ACTUAL AS OF JUNE 30, 2016
Project Name	New Linear Reference System (LRS) and Transportation Information System (TIS)	
Agency / Division	Transportation / Planning Division	
Project / Program purpose and objectives	<p>MDT manages and maintains a broad spectrum of information about Montana's roadways. This information is distributed throughout the agency in multiple, disparate data systems. A linear referencing system (LRS) is the key to integrating and aligning data between the different systems for analysis, visualization, reporting and decision making.</p> <p>The legacy LRS currently resides in the Transportation Information System (TIS), which was implemented in 1998 and had no GIS or spatial capabilities built-in. MDT has created a spatial LRS outside of the TIS system for mapping, independent GIS analyses and required federal reporting, but the two are updated and maintained using separate, mostly manual efforts. Also, there is no automated integration with outside data systems so changes to the LRS must be propagated to the other systems using disparate efforts as well.</p> <p>The new LRS/TIS shall facilitate easy collection and location of features in the field, integrate data using multiple referencing methods, and simplify the data maintenance and access within all divisions of MDT. The department would like to improve accuracy of the features referenced to the road network, minimize redundancy in agency database systems, and minimize data maintenance needs due to changes in the transportation network. If achieved, this new system will greatly reduce staff time within the agency.</p> <p>A new LRS system implementation and integration with all pertinent MDT data systems will cost an estimated \$500,000 as well as an estimated annual system maintenance fee of \$50,000.</p>	
Estimated start date	Unknown	Underway
Estimated cost	\$500,000	\$1,000,000 to \$1,500,000
Funding source – 1	Agency budgets	EPP
Funding source – 2		
Funding source – 3		
Annual costs upon completion	\$50,000	To be determined
Status of the project as of June 30, 2016. Indicate % completed and status of funds expended.	The requirements gathering phase is underway and nearing completion. MDT hopes to have the resources available to release an RFP in 2017.	

ITEM	DESCRIPTION	ACTUAL AS OF JUNE 30, 2016
Project Name	Bridge Information Management System (BIMS)	
Agency / Division	Transportation / Engineering Division	
Project / Program purpose and objectives	<p>The goal for this project is to identify and implement a systemic long-term solution that supports the Montana Department of Transportation (MDT) bridge inspection, bridge data management and bridge asset management goals of the Montana Department of Transportation (MDT), the Federal Highway Administration (FHWA) and the State of Montana. Accurate and complete bridge inspection data that meets or exceeds the FHWA bridge inspection data requirements is the foundation for three overall initiatives:</p> <ul style="list-style-type: none"> A. Achieve National Bridge Inventory (NBI) standards B. Improve MDT Bridge Bureau data management business processes C. Achieve MDT bridge asset management goals 	
Estimated start date	MDT Business case currently being finalized. RFP phase will start upon approval by MDT Investment Selection Committee.	
Estimated cost	\$500,000	
Funding source – 1	87% Federal Aid Highway funding	
Funding source – 2	13% MDT Budget (state funds)	
Funding source – 3		
Annual costs upon completion	Unknown	
Status of the project as of June 30, 2016. Indicate % completed and status of funds expended.	Complete.	

ITEM	DESCRIPTION	ACTUAL AS OF JUNE 30, 2016
Project Name	Financial Management Suite	
Agency / Division	Transportation / Administration Division	
Project / Program purpose and objectives	Over the years, MDT has implemented and supported various stand-alone software solutions that provide essential information to managers for the critical functions of budget development, personal services projections, personal services allocation, and project cost scheduling. The systems that support these financial processes are becoming obsolete or are no longer sustainable in the current state. Because of decreased usability, technological changes, and functionality issues, the efficient utilization of the software solutions has declined and, as a result, many of the processes are supplemented with manual work-arounds to achieve the desired end result. The purpose of this project is to implement an integrated financial system with the appropriate interfaces to other applicable systems. The solution will replace BDS, PSBM, PSA, and numerous manual spreadsheets. This will increase MDTs efficiency of operations, reduce costs, and improve transparency while providing accurate, timely, and complete financial information to users at all levels.	
Estimated start date	Unknown	Underway
Estimated cost	\$3,000,000	\$3,000,000
Funding source – 1	EPP	EPP
Funding source – 2		
Funding source – 3		
Annual costs upon completion	Unknown	Unknown
Status of the project as of June 30, 2016. Indicate % completed and status of funds expended.	The requirements gathering phase is underway and should be completed in 2017. The next phase will be RFP development and release.	

ITEM	DESCRIPTION	ACTUAL AS OF JUNE 30, 2016
Project Name	Document Management System (DMS)	
Agency / Division	Transportation / Engineering Division	
Project / Program purpose and objectives	<p>The goal for this project is to identify and implement a systemic long-term solution that supports the Montana Department of Transportation (MDT) document management goals for the Highways & Engineering Division</p> <p>Accurate and complete document management that meets or exceeds the CADD file and highway construction project is the foundation for these overall initiatives:</p> <ul style="list-style-type: none"> A. Replace the current technology stack the current Document Management System is built on with a robust and non-brittle B. Integrate appropriate GIS technology within a updated document management solution Improve MDT Bridge Bureau data management business processes, and C. Maintain the current technology functions that support the unique needs of MDT's CADD document management requirement <p>Provide opportunity to integration of upgraded DMS application with other critical agency applications.</p>	
Estimated start date	January 2015	Underway
Estimated cost	\$750,000	\$750,000
Funding source – 1	MDT Budget	
Funding source – 2		
Funding source – 3		
Annual costs upon completion	Unknown	Unknown
Status of the project as of June 30, 2016. Indicate % completed and status of funds expended.	The requirements gathering phase is underway.	

ITEM	DESCRIPTION	ACTUAL AS OF JUNE 30, 2016
Project Name	Americans with Disabilities Act (ADA) Curb Ramps Application	
Agency / Division	Transportation / Professional Services Division	
Project / Program purpose and objectives	This application would be used to capture and maintain an intersection/curb ramp inventory for approximately 15,000 intersections. The application is part of MDT/Civil Rights' ADA Transition Plan to remediate pedestrian physical barriers at intersections on State owned, operated, and maintained roads by the construction of curb ramps. The data in this application will be used to keep track of compliance and noncompliance, assist in planning and prioritizing remediation, and meeting reporting requirements.	
Estimated start date	Developing Business case	
Estimated cost	Unknown	
Funding source – 1	Agency budget	
Funding source – 2		
Funding source – 3		
Annual costs upon completion	Unknown	
Status of the project as of June 30, 2016. Indicate % completed and status of funds expended.	Complete.	

ITEM	DESCRIPTION	ACTUAL AS OF JUNE 30, 2016
Project Name	Contract Tracking and Monitoring (CTMS)	
Agency / Division	Transportation / Administration and Engineering Divisions	
Project / Program purpose and objectives	<p>MDT does not currently have an agency wide tracking system that allows the various divisions and districts to manage contracts. MDT needs a robust solution to maintain information in one consolidated location.</p> <p>As a result of the current system limitations, district offices and agency divisions have adopted alternative tracking methods, which include manual spreadsheets, manual logs, or other systems. These various methods result in duplication of efforts and increase the risk of introducing errors in the data.</p> <p>The purpose of this project is to recommend a solution that will meet MDT's business requirements for Contract Lifecycle Management.</p> <p>A goal of this project is to sunset two MDT in-house developed contract management systems, namely our Purchasing Section's Contract Management System (CTS) and our Consultant Design Bureau's Consultant Information System (CIS).</p>	
Estimated start date	Unknown	Underway
Estimated cost	\$2,000,000	
Funding source – 1	MDT Budget	
Funding source – 2		
Funding source – 3		
Annual costs upon completion	Unknown	
Status of the project as of June 30, 2016. Indicate % completed and status of funds expended.	The requirement gathering phase is underway. MDT intends to assess the new contract tracking system initiated by DOA to determine if the system will meet our business needs.	

Section 3: An inventory of agency information services, equipment and proprietary software (MCA [2-17-524\(3\)\(c\)](#)).

To collect data on “information services” and “proprietary software”, we are leveraging LDRPS (L10). Our goal is to utilize and maintain LDRPS as the authoritative source for this information.

- Please verify the information in the LDRPS Spreadsheet, making any necessary updates or additions.
- Please email your updated spreadsheet to Dawn Pizzini, subject matter expert, at dpizzini@mt.gov.
 - The LDRPS spreadsheet can be found in your Agency folder located at <https://ent-sp1.mt.gov/sites/bienrpt/layouts/15/start.aspx#/Agency%20Information/Forms/AllItems.aspx>.
 - We will pull a final LDRPS Spreadsheet for submission as part of the Biennial Report based on your Agency’s input.

For “equipment”, we are utilizing the standard Agency Inventory Template Spreadsheet we have used for past biennial reporting and that we are currently using to gather information for the IT Convergence project. The spreadsheet can be found in your Agency folder located at <https://ent-sp1.mt.gov/sites/bienrpt/layouts/15/start.aspx#/Agency%20Information/Forms/AllItems.aspx>.

- If you **have** already provided your inventory for the IT Convergence project, please fill out the last tab labeled **DEVICES**.
 - Please review the entire workbook for accuracy and make any necessary changes.
- If you **have not** provided this inventory, please fill out the entire workbook.