

Montana State Library

Geographic Information



FY 2014 Work Plan Status Report
May 13, 2014

The MSL Geographic Information program respectfully submits to the Library Commission the status of projects scheduled for completion in FY14. The work plan was built around the core goals contained in the [2012 through 2022 MSL Long Range Plan](#). In terms of geographic information and spatial technology we aspire to

1. Acquire and manage relevant quality geographic information that meets the needs of users
2. Provide our partners and patrons with convenient, high quality and cost effective access to geographic information
3. Provide consultation, leadership and training for the development and use of geographic information and spatial technologies
4. Promote partnerships and encourage collaboration both within and beyond the spatial technology community.
5. Insure sustainable success through efficient and effective management of both geographic data and staff resources.

A sixth goal, that MSL Geographic Information provides appropriate training and training resources is interspersed within the projects and tasks of the other five goals.

Geographic Information Content

Data classified as portions of the [Montana Spatial Data Infrastructure](#) make up a large portion of MSL's data collections and MSDI data management projects dominate a large portion of the content portion of this work plan. Tasks from the MSDI Work Plan approved by the Montana Land Information Advisory Council in November 2012 and the Library Commission in December 2012 were incorporated into this work plan. The status of the major MSDI research and development tasks under the program's purview is as follows:

Theme	FY13 Proposed Project	Status
Admin Boundaries		
	CENSUS PILOT/BOUNDARY ADJUST	* In Progress – see # 1 below
	PRECINCT MAPPING	Not Started
	WATER/SEWER DISTRICTS	Research Phase
Cadastral		
	ADJUST CADASTRAL & PUBLIC LANDS TO NEW GCDB	* In Progress – see #1 below
	STATE TRUST LAND COMMON OPERATING	In Progress
	FEDERAL LAND ATTRIBUTIOIN	* In Progress – see #2 below
Geographic Names		
	IMPROVE UPDATE, WEB SERVICES AND DISTRIBUTION	* Not Started – see #3 below

Hydrography		
	DATA QUALITY IMPROVEMENTS	*On going – see #4 below
	TRANSPARENT EDITING AND MAINTENANCE WORKFLOW	*Complete and ongoing – see #5 below
	FEATURE DELTA ANALYSIS	On going
Imagery		
	PROCESS 2013 NAIP FOR DOWNLOAD AND WEB SERVICES	95% complete – should be up May 2014
Structures		
	NEW DATA AND ETL ROUTINES TO FRAMEWORK	Complete

Supplemental Comments and Explanations:

1. Adjustment of administrative boundaries and the cadastral tax parcels could not happen until MSL received a clean copy of CadNSDI 2 from BLM. Staff spent an estimated 500 hours working with BLM's contractor Premier Data, doing QA/QC on CadNSDI 2 that BLM was not able to accomplish. We received a relatively clean version in March 2014 although we have discovered subsequent errors on the Canadian Boundary. Parcel adjustment has begun and we estimate it will be 50% complete by June 30, 2014. A draft version of county boundaries has been finished and is being inspected in house. Many of the FY14 hours estimated for adjustment have been spent developing the Montana CATSPAW project that will move CadNSDI to CadNSDI_MT and out of federal management.
2. While we still have little federal land attribution extensive work on the Public Lands Database was accomplished to make it as current as possible. This data is used as the base for many map applications and has been published as a map service.
3. The USGS has not completed the edits that were submitted by Montana. This has been rescheduled as a 2015 project
4. Data quality improvements are focused on 1. User-submitted requests, and 2. Systematic basin-by-basin (8-digit HUC) revisions.
 - a. As of April 2014, approximately 600 hydrography features have been revised based on user-submitted requests. Examples include feature type (FType) and feature code (Fcode) updates, name updates, aligning

feature geometry with NAIP, fixing disconnected streams, and digitizing new lakes, ponds, and flowlines. There are approximately another 300 revisions queued at this time.

- b. Systematic basin-by-basin revisions will begin in the Beaverhead and Mussellshell the end of FY14 and continue through FY15. The majority of FY14 time has been spent identifying, testing, and documenting how we will systematically cleanup basins throughout the State. The general approach is to leverage existing datasets, such as the Wetlands Framework and LIDAR-derived hydrography, by using them to identify where revisions are needed (feature delta analysis) and importing geometry and attributes where feasible.
5. The *Montana Hydrography Dataset Stewardship and Edit Submission Guide* has been drafted, reviewed by the Hydrography Working Group, and will be published to the web and put into practice by the end of FY14. The purpose of this document is to provide guidelines and a set of procedures for maintaining Montana's Hydrography Dataset. The document provides an overview of the stewardship process; describes working groups and guiding agencies; details options for submitting NHD revisions; discusses how users can track the status of submitted edits; describes sources of data and their update frequency; provides a form for submitting hydrography revisions; and lists best practices and FAQs. A simple ArcGIS online application, the *Montana Hydrography Dataset Edit Request Viewer*, has been developed and presented to the Hydrography Working Group and will be released by the end of FY14. Users can view "Pending," "In Progress," and "Completed" hydrography edit requests and click on a feature to see a description of the revision. Contributors may also consume the map service or obtain a copy of the geodatabase from MSL to review edit requests in desktop GIS software. Future projects include the exploration of web editing options, which could allow users to submit hydrography revisions through the online viewer.

Geographic Information Access

Three major tasks were listed in the work plan. They were to re-engineer the data bundler, the data portal and to implement a map gallery. These tasks have all been completed.

Data Bundler		
	Move from Map Objects technology to FME server. This project took longer than expected but was rolled into production April 1, 2014. http://databundler.msl.mt.gov/DataBundler/	Complete
Data Portal		
	This project actually took less time than was anticipated and was rolled out April 1, 2014. It combines the data discovery ability of the previously developed data list with the metadata input functionality of the old data portal. http://apps.msl.mt.gov/Geographic_Information/Data/DataList/Default.aspx	Complete
Map Gallery		
	The map gallery, and accompanying map inventory database which allows us the ability to enter new maps and search for old ones was completed in November, 2013 - http://apps.msl.mt.gov/Geographic_Information/Maps/Gallery/	Complete

Geographic Information Consultation and Leadership

In this section we describe the status of the program's ongoing consulting and leadership roles and tasks.

1. Conduct the "duties of the department" as defined in MCA 901-1-404 and administrative rule associated with the entire Montana Land Information Act (MLIA). This includes staff support to MLIAC, development of an annual Land Information Plan, and conducting the annual MLIA grant process as well as administering the MLIA grants. Even broader in scope MCA 901-1-404(b) requires MSL to "work with all federal, state, local, private, and tribal entities to develop and maintain land information". – *Four Land Information Advisory Council meetings were chaired by the Montana State Librarian and staffed by the program. The annual land plan was completed in November and accepted by the Library Commission in December. The MLIA grant program was successfully competed with a prioritized list of grants to be submitted to the Commission in June.*
2. Administer the State's Enterprise License Agreement (ELA) with Environmental Systems Research Institute. Complete and ongoing – Complete and ongoing. We are currently still administering the ELA however that may transition to the software asset management team within the Department of Administration. We are currently working with SITSD and the GIS Manager's Community of Interest to negotiate a new FY16/17 ELA.

3. Participate in state government leadership groups on water policy drought and continue our role as the State Geographic Names authority. – Complete and ongoing. Gerry Daumiller recently attended Council of Geographic Names Authorities (COGNA) conference in Austin, Texas.
4. Work closely with local governments every day and support local governments through participation in annual MACO and League of City and Town conferences. – Complete and ongoing. Erin Fashoway attended both the MACO and League's conferences last fall. The State Librarian Jennie Stapp, Digital Information Director and CIO Evan Hammer, and State GIS Coordinator Stu Kirkpatrick have set up biannual (minimally) meetings with MACO Executive Director Harold Blattie and met recently in April.
5. Participate and act as the State's representative in national and regional leadership groups such and the National State's Geographic Information Council and the Western Governors Geographic Information Council. – Complete and ongoing. Both Evan Hammer and Stu Kirkpatrick attended the NSGIC annual meeting in Kansas City.

Additional accomplishments mentioned in the work plan but not specifically defined as tasks:

6. We worked with SITSD and other state agencies to create a state map gallery off the State's Home page <http://mt.gov/mediagallery.aspx?activeTab=2> . We also lead the state's ArcGIS Online working group.
7. We worked with SITSD and the Governor's Office of Economic Development to develop the Montana Site Selector and provide the map services. The Site Selector will go into production July 1.

Geographic Information Collaboration

In this section we describe the status of the program's collaboration role and work plan tasks.

- In partnership with the U.S Census Bureau complete work on our addressing and boundary pilot projects before the end of the FY. – Data submitted and project complete. This project may be continued as we work with the Esri parcel fabric to continually update boundary data.
- By October 31, 2013 visit all the NRIS core funding agencies to discuss long-term ideas and solutions for broadening access to their data and metadata. – Project not completed because updating metadata wasn't possible until the old data portal was replaced. With the new data list providing that functionality this project can move forward.

- Work with the MAGIP Board, and various MAGIP committees to strengthen the Montana GIS community through professional development and mentoring and actively assist in the planning for the April 2014 Intermountain GIS Conference. – Project complete. MSL was active on the conference planning committee and provided our training labs as well as technical support. Staff did several presentations as well.
- In collaboration with the Bureau of Land Management, provide the quality control and quality assurance to correct the errors we have found in CADNSDI 2 (the newest version of the geographic coordinate database) and brought to the BLM's attention. Our goal is to have a usable CADNSDI 2 by October 2013.- In good faith, but with some frustration, we provided the BLM quality control and quality assurance for CadNSDI 2. A usable database was finally delivered to us in March which led to the task delays discussed under the Geographic Information Content section of this document. That frustration led us to form the Montana CATSPAW Project and taking over the maintenance of CadNSDI 2, now called CadNSDI Montana from BLM. That project, while unexpected and taking several hundred hours of work by five staff members will result in greater staff efficiencies through revised workflows and ultimately better data for our patrons.
- Partner with DNRC to have one agreed upon version of State Trust Land parcels by December 31, 2013. – Project started but not completed. We have had three meetings with DNRC however we have not made much progress. We understand that this has been elevated to the number two GIS priority at DNRC so hopefully we can make better progress next fiscal year.
- The Water Information System Manager will contact DNRC, FWP and DEQ by staff by September 2013 and reform the Montana Hydrography Working Group by December 31, 2013. – Project complete. Please refer to the discussion under the Geographic Information Content section.
- Support all MSL programs as they expand their profile by presenting their programs using a geographic component (see http://www.msl.mt.gov/For_Librarians/Maps/) – Project ongoing. We continue to provide mapping support to the general library staff. Additionally all our metadata is now "Discover It/EBSCO" harvestable.

Sustainable Success

In this section we describe the status of the program's sustainable success.

Sustainable success from a technical perspective requires that we persist in on schedule transition of our legacy systems like the data bundler, digital atlas, and GIS portal to

newer technology. Significant change to all three applications will be a measure of success of the FY 14 work plan. Additionally, the completion of an asset management system that allows us to inventory and track all our assets – data, metadata, applications and maps will be completed in FY 14. - As discussed in the Geographic Information Access section the data bundler and GIS data list/portal were rewritten. We have formed a team, which has input from other MSL programs as well as other agencies, which will provide alternatives for the Digital Atlas by September. The asset database is complete and being tested with the bulk of that work completed by MSL's IT staff with our input.

Long-term sustainable success will require on-going staff development to keep up with changes in technology. As per the FY13 Work Plan we have instituted an annual training plan with the goal that each employee takes part in at least 32 hours of annual training that is appropriate to their skill level and job duties. – The training plan was instituted and most staff has been able to attend the professional development opportunities they identified at the start of the fiscal year. The training plan will be revised for FY 15 in June.

Sustainable success requires adequate funding. MSL's budgetary success in the 2013 legislative session, especially in acquiring increased fixed costs for acquisition of GIS enterprise services and the restoration of the Water Information Manager position are certainly important to our ability to move forward in FY 14. The budgetary process never really slows down however and in FY 14 we will start documenting the need to not only keep the Water Information System Manager funded long term but the need for find more appropriate funding sources for other staff positions currently funded through the Montana Land Information Account. – Documentation of the Water Information Manager's success has been provided to the State Librarian. An EPP proposal for permanent support for the Water Information System Manager was submitted and is contained in MSL's first priority proposals. An EPP proposal for permanent funding for two staff working on cadastral related projects was submitted and is contained in MSL's second priority proposals

Finally, sustainable success is at least partially based on continued relevance. Consider this comment we received on July 25, 2013 from William Larson, an Economist with the Bureau of Economic Analysis in Washington, DC. "This is fantastic stuff. Montana is one of the tops in the country when it comes to publically available electronic parcel databases. It's basically you guys, Indiana and Florida, and then everyone else, and yours is much easier to work with than either of those two. Keep up the great work!" From this perspective our success in providing geographic data content and access, coupled with our recognized ability to provide vision, leadership and work in collaboration with others will insure sustainability.



– The Montana CATSPAW project is leading the nation forward regarding state maintenance of the digital representation of the Public Land Survey System. This effort has been recognized by the Federal Geographic Data Committee, as well as Esri. Esri has provided free consulting services to this project since November. The State GIS Coordinator has been asked by Esri to present twice on this project at the Esri annual User Conference in July. As part of this project the state's geodetic control database has been adopted by the BLM for field collection efforts this summer. Additionally the state boundary correction work we are doing with North Dakota is recognized as a model for intra-state cooperation. MSL's Geographic Information Program is alive, well, and maintaining it's national reputation as a leader among the states.