
Effective:

July 1, 2018 to

June 30, 2019

***(State Fiscal Year
2019)***

Montana Land Information Plan

Last Updated: 9/26/2017



Photo courtesy of the Montana State Library – MSDI – Cadastral GIS Steward

Produced by the Montana State Library in coordination with the Land Information Plan Subcommittee of the Montana Land Information Advisory Council

Pursuant to Section 4 (c) of the Montana Land Information Act (Senate Bill 98) and Administrative Rule IV of the Montana Land Information Act

Executive Summary

The Fiscal Year 2019 Montana Land Information Plan has been prepared by the Montana State Library (MSL) with input from the Montana Land Information Advisory Council (MLIAC). Section 90-1-404 (c) of the Montana Code Annotated calls for an annual land information plan that “describes the priority needs to collect, maintain, and disseminate land information. The land information plan must have as a component a proposed budget designed to accomplish the goals and objectives of the plan. “

Land information is collected and managed using computer-based technology, known as Geographic Information Systems or GIS and is used by federal, state, local entities to provide critical services. Geographic information is required for disaster and emergency response; the development and maintenance of transportation, sewer and water infrastructure; resource conservation and development; and overall land use planning.

The priorities set forth in this plan help to

- Guide the work of the MLIAC,
- Identify the areas of focus for the Montana Land Information Act Grant Program,
- Guide the development and maintenance of the Montana Spatial Data Infrastructure (MSDI)
- Provide the basis for overall coordination of GIS in Montana.

Given the budgetary and human resource limitations that the State of Montana is facing in the foreseeable future, these priorities become particularly important as the MSL tries to fulfill its mission. Working with state agencies, universities, local and tribal governments, the MSDI theme stewards and the Montana Association of Geographic Information Professionals (MAGIP), the MSL will strive to support efforts to address land information in support of:

- Safety and Emergency Response,
- Local Government Capacity Building,
- Land Record Information,
- MSDI Theme Development,
- Water and Natural Resource Information, and
- The Overall Maintenance, Development and Promotion of GIS.

Contents

- Executive Summary 1
- The Montana Land Information Plan..... 3
- The Montana Land Information Act 3
- Introduction and Overview..... 4
- The Montana Spatial Data Infrastructure and the Federated Approach 4
- Funding, Timeline and Grant Process 5
 - Funding 5
 - Timeline 6
 - Grants Process 6
- FY 2019 Land Plan Priorities 7
 - Priorities for the Montana Land Information Advisory Council 7
 - Priorities for Grants 7
 - Priorities for the Montana Spatial Data Infrastructure 8
 - General MSDI Priorities 8
 - MSDI Theme Specific Priorities– Stewarded by the Montana State Library 8
 - Theme Specific - Non MSL Stewarded 9
 - GIS Coordination Priorities 10
- FY 2019 Land Plan Budget..... 11

The Montana Land Information Plan

The Montana Land Information Act

The Montana Land Plan (the Plan) is prepared annually by the Montana State Library, in accordance with the Montana Land Information Act (MLIA), Section 90-1-401, et. Seq. of the Montana Code Annotated (MCA). The passage of the Act in 2005 recognized the important role that geographic information plays, as stated in the purpose section of the Act:

“The purpose of this part is to develop a standardized, sustainable method to collect, maintain, and disseminate information in digital formats about the natural and artificial land characteristics of Montana. Land information changes continuously and is needed by businesses, citizens, governmental entities, and others in digital formats to be most effective and productive. This part will ensure that digital land information is collected consistently, maintained accurately in accordance with standards, and made available in common ways for all potential uses and users, both private and public. This part prioritizes consistent collection, accurate maintenance, and common availability of land information to provide needed, standardized, and uniform land information in digital formats.”
(Section 90-1-402 Montana Code Annotated (MCA))

The preparation of the Plan is guided by the Montana Land Information Advisory Council (MLIAC), a 22-member body. The Council includes representatives from federal, state and local government entities, private businesses and the Montana Legislature. The Council is authorized in Section 90-1-406 MCA and has the following *advisory* duties:

- (a) advise the state library with regard to issues relating to the geographic information system and land information;
- (b) advise the state library on the priority of land information, including data layers, to be developed;
- (c) review the land information plan described in [90-1-404](#) and advise the state library on any element of the plan;
- (d) advise the state library on the development and management of the granting process described in [90-1-404](#)(1)(e);
- (e) advise the state library on the management of and the distribution of funds in the account;
- (f) assist in identifying, evaluating, and prioritizing requests received from state agencies, local governments, and Indian tribal government entities to provide development of and maintenance of services relating to the GIS and land information;
- (g) promote coordination of programs, policies, technologies, and resources to maximize opportunities, minimize duplication of effort, and facilitate the documentation, distribution, and exchange of land information; and

(h) advocate for the development of consistent policies, standards, and guidelines for land information.

Introduction and Overview

The Montana Land Information Act (MLIA) establishes a Land Information Account which provides funding to the Montana State Library (MSL), to support Montana’s Spatial Data “infrastructure” or MSDI – the personnel, data, software and hardware that is used to guide the collection and maintenance of information related to the state’s geography.

The Land Information Account is funded from a portion of the recordation fees, collected by each county. For each fee collected, 25 cents are deposited in the county’s land information fund and 75 cents is transmitted to the State Department of Revenue to be placed in the state’s Land Information Account (Section 7-4-2637 MCA).

The management of Montana’s land information and the disbursement of the Land Information Account funds are guided by the over-arching goals and priorities set forth in this Plan. Setting priorities is particularly important in light of budget and personnel constraints at both the state and local levels. The 2019 Land Plan over-arching goals are as follows:

Goal #1 – A state-wide of 15 MSDI data “layers” that are consistently collected, accurately maintained and made commonly available.

Goal #2 - An organizational framework and stable infrastructure that efficiently provides the human and technological resources needed to support the use and integration of digital land information into the critical business processes of local, tribal, state, federal, and other stakeholders.

Goal #3 - Improved quality and efficiency in the operations of stakeholders through consistent availability to critical land information and the use of GIS technology.

Goal #4 – The promotion of GIS across the state through coordination, education, and outreach.

The 2019 Land Plan sets priorities in the pursuit of these goals for MLIAC, the MSDI, the Montana Land Information Grant Program and for the overall well-being of GIS in the state of Montana. These priorities are specifically described, beginning on page 7.

The Montana Spatial Data Infrastructure and the Federated Approach

Montana’s Spatial Data Infrastructure or MSDI is composed of 15 layers of geospatial data that provide information about our physical landscape. The layers provide service providers, policy makers, natural resource managers, businesses and the general public with critical information. For example, road center line information and addresses assist first responders in providing emergency assistance. Cadastral information, which shows the extent, value, and ownership of

land, is critical property transfer and taxation. It also helps in the collection of Census information, which in turn provides the basis for state and federal assistance to local communities. The layers enable the preparation of maps and associated reports that are critical to the operations of local and tribal governments, the State of Montana, healthcare providers, engineers and land surveyors, utilities, land managers and so many others.

The 15 data layers are as follows.

- Administrative
- Cadastral
- Climate
- Elevation
- Geographic Names
- Geology
- Hydrography
- Hydrologic Units
- Land Use/Land Cover
- Mapping Controls
- Orthoimagery
- Soils
- Structures and Addresses
- Transportation
- Wetlands

Information required to develop, maintain and update each of these layers is collected by a variety of entities at local, regional, state and federal levels. Each of these efforts contributes to the state's overall spatial data infrastructure. As such, the approach to maintaining geospatial data is "federated". The MSDI depends on a variety of entities and efforts. Therefore, the data must be carefully collected and recorded using best practices including:

- Consistency in data formats,
- The presence of supporting information and references (referred to as metadata).

Funding, Timeline and Grant Process

Funding

Section 90-1-404 MCA requires the MSL to administer the MLIA. As noted above, this work is funded primarily through MLIA. When possible, these MLIA funds may be supplemented by general fund or other funding sources. Funds for the state land information account are generated through collection of county recordation fees as described in §7-4-2637 ((3) iii) MCA. This account represents a significant funding source to accomplish the priorities of the Land Plan.

Since it was established in 2005, the state land information account has proven to be a volatile and difficult to predict funding source. The highest recorded annual collections came in at just

over \$1 Million in the second year of the account (FY 2007). Currently collections are slowly increasing from an all-time low (\$722,000) in FY 2014. Recent fluctuations in collections leave us with some uncertainty about what we should expect to be collected from one year to the next. For this reason, we are proceeding cautiously and the budget for this year's Land Plan shows only a modest increase over last year. The budget remains below budgets from the early years of MLIA and overall funding does not substantially support overall needs for MSDI.

Timeline

The Montana State Library makes use of MLIA funding for MSDI and GIS Coordination priorities specified in this plan. To document specific work objectives to address the priority goals for data development and GIS Coordination, the MSL, in conjunction with the other MSDI Stewards will submit a work plan by May 1, 2018 for Council review. Some MSDI tasks may be undertaken by entities other than MSL. Nonetheless, MSL will assume ultimate accountability for meeting the plan's objectives. These objectives documented in the work plan will be met over the course of state fiscal year 2019 (July 1, 2018 through June 30, 2019).

Grants Process

Publication of the Land Plan in January informs the MLIA grant application process. MLIAC seeks grant applications from local, regional and tribal jurisdictions that address the Land Plan grant priorities through one-year MLIA grants. In accordance with Montana Administrative Rule 10.102.9105, the grant application process will be announced by January 15, 2018. Announcements will be made through the Montana Association of GIS Professionals (MAGIP), the Montana Association of Counties (MACo), the MLIAC distribution list and other communication channels. Grant applications must be received by MSL by February 15, 2018. Review and ranking of grant applications is conducted by a subcommittee of MLIAC. Final grant awards are approved by the MSL Commission in June 2018. Grants are administered by MSL and are awarded for the period beginning July 1, 2018. Grant work should be completed by June 30, 2019.

FY 2019 Land Plan Priorities

This section of the Land Plan sets forth priorities for the 2018-2019 fiscal year. Given the uncertainty of future funding for GIS in Montana, we have to be realistic in setting goals and priorities for the next year that reflect the current funding situation. These priorities are overarching, in that they provide general guidance for land information-related activities for each of the following:

- The Montana Land Information Advisory Council (MLIAC),
- The Montana Land Information Act (MLIA) Grant Program,
- Development and maintenance of Montana’s Spatial Data Infrastructure (MSDI),
- GIS Coordination.

Priorities for the Montana Land Information Advisory Council

1. Review MSDI Layers to determine sustainability under current funding restraints:
 - a. Review what it means to be designated as an MSDI theme
 - i. Support provided
 - ii. Best practices
 - b. Prepare a recommending document
2. Create measureables to determine success of the grant program.
3. Create measureables to determine success of MSDI layer.
4. Match data layers to Montana Statutes (e.g. Growth Policy and Call Before You Dig statutes). Use the Hydrography case study as an example.
5. Conduct analysis of stakeholders, other statutory boards and councils, and create a plan for outreach.

Priorities for Grants

1. Safety and Emergency Response:
 - a. Next Generation 911
 - i. Boundaries – Development of the Public Safety Answering Point boundary. Accurate Cadastral data and PLSS digital representation will support the creation of boundaries.
 - ii. Addresses – Development of address data that are National Emergency Number Association (NENA) Standard Compliant and to be integrated into the MSDI Structures & Addresses theme.
 - iii. Road Centerlines – Development of road centerline data that are National Emergency Number Association (NENA) Standard Compliant and to be integrated into the MSDI Transportation theme.
 - b. Development of GIS to support Disaster and Emergency Operations and Planning: Local, Regional, and MSDI layers are used to help plan and mitigate in disaster and emergency response including, but not limited to:
 - i. Wildfires
 - ii. Earthquakes
 - iii. Drought

- iv. Floods
- v. Invasive Species
- 2. Building a GIS to Improve Local & Tribal Government Workflows, Business Processes, and Operations –
 - a. Land Use Planning
 - b. Infrastructure Management
 - c. GIS Data & Program Development – Development of base geographic data layers that federate into the MSDI and support other programs
 - d. GIS data development to support the U.S. Census Bureau’s Geographical and Statistical Boundary Programs
- 3. General Land Records –
 - a. Improvements to digital representation of Public Land Survey System (PLSS) for the purpose of improving accuracy of the MSDI Cadastral and Administrative Boundaries Themes.
 - i. Collecting new survey control data
 - ii. Digitization and dissemination of documents related to PLSS and nonPLSS corners
 - b. Development and enhancement of administrative boundaries, including but not limited to data layers recognized by the MSDI Administrative Boundaries Theme.

Priorities for the Montana Spatial Data Infrastructure

General MSDI Priorities

1. Coordinate with stakeholders on the development and maintenance of Themes: local, tribal, regional, federal, university, private, and international partners.
2. Regular maintenance of MSDI Theme data layers, schedules vary depending on Themes.
3. Publish all MSDI data, in compliance with standards, to the Montana GIS Data List –
 - a. https://mslservices.mt.gov/Geographic_Information/Data/DataList/default.aspx.
4. Continue to develop the Montana spatial data archive collection, including annual MSDI entries.
5. Develop an annual MSDI work plan, to be incorporated into the MSL work plan that prioritizes actions, supports data partners and identifies funding needs.

MSDI Theme Specific Priorities– Stewarded by the Montana State Library

1. Administrative Boundaries
 1. Perform annual update of existing layers,
 2. Participate in the US Census Bureau’s annual Boundary Annexation Program,
 3. Research and development of County Commissioner district boundaries*,
 4. Research and development of boundaries to support NextGen 9-1-1*.
2. Cadastral
 1. Annual update of the CadNSDI,
 2. Monthly Cadastral updates, including parcels and conservation easements,
 3. Monthly updates of Public Lands*,
 4. Cadastral web application rewrite*.

3. Geographic Names*
 1. Total Theme Review: Research incorporation of the Geographic Names Advisory duties underneath the auspices of the Montana Land Information Advisory Council.
 2. Review Geographic Names Advisor MOU with the Dept. of Natural Resources & Conservation.
4. Hydrography
 1. Annual updates to the National Hydrography Database (NHD),
 2. Promoting the editing of the NHD by stakeholders,
 3. Integrating Wetlands waterbody polygons into the NHD.
5. Imagery
 1. Disseminate and host statewide imagery data and services, including 2017 NAIP.
6. Mapping Control
 1. Work with stakeholders, specifically Montana State Agencies, to obtain existing survey control,
 2. Coordinate best practice development with stakeholders, including county governments and MARLS.
7. Structures & Addresses
 1. Regular update of data layers*,
 2. Coordinate with local governments to promote the standardization of NENA compliant address data,
 3. Review the Montana Next Gen 9-1-1 GIS Data Assessment,
 4. Work with SITSD to promote MSDI within their granting process.
8. Transportation*
 1. Framework Status: Complete and maintained annually.
 2. FY2019 Goals
 1. Develop a statewide NENA compliant road centerline dataset*,
 2. Define new update schedule.

****Considered at risk and difficult to achieve given recent budget cuts, including the loss of staff.***

*****Recommended for use of supplemental MLIA Funding -AND- considered at risk and difficult to achieve given recent budget cuts, including the loss of staff.***

Theme Specific - Non MSL Stewarded

9. Climate, University of Montana
 1. Gridded meteorological dataset evaluation: Currently evaluating gridded temperature and precipitation datasets for Montana for goodness of fit. This will drive what datasets we focus on for specific applications like drought or products like the Montana Climate Atlas.
 2. Montana Climate Atlas updates: Update and enhance the online Montana Climate Atlas and associated map and raster services.

3. Climate Station Data updates: Update the online access to climate station datasets and Montana Mesonet datasets using standards adopted by NOAA.
10. Elevation, No Steward
 1. The Montana State Library will participate in national discussions, i.e. USGS 3DEP program
 2. The Montana State Library will coordinate with stakeholders in the state on elevation data related issues and topics
11. Geology, Montana Bureau of Mines and Geology
12. Hydrologic Units, U.S. Dept. of Agriculture
13. Land Cover, University of Montana – Montana Natural Heritage Program
 1. Obtain and incorporate new data:
 1. Fire polygons from the Montana Dept. of Natural Resources and Conservation
 2. Crop information from Montana Dept. of Revenue
 2. Replace current wetlands with aggregated NWI wetlands where size allows
14. Soils, U.S. Dept. of Agriculture
15. Wetlands, Montana Dept. of Environmental Quality & University of Montana – Montana Natural Heritage Program
 1. Tribal & Remaining Areas of wetland mapping
 2. Incorporate all new value added attributes plus metadata

GIS Coordination Priorities

1. Promote the use of GIS in Montana
 - a. Advocate for the use of MSDI data in state and local business processes, programs, and workflows,
 - b. Attend appropriate meetings and conferences including the Montana Association of Counties, Montana Association of Planners, Montana State IT Conference, Montana Association of Geographic Information Professionals, the National States Geographic Information Council (NSGIC) and other meetings of subject matter experts,
 - c. Preserve and improve relationships with MSDI data providers through support and local visits that foster knowledge transfer,
 - d. Promote the use of GIS within mobile technology:
 - i. Improving field data collection efforts by integrating the use of GIS,
 - ii. Creation of new mapping applications that are mobile friendly,
 - iii. Exploring the use of citizen science through mobile technology.
2. Promote best practices and standards
 - a. Engage stakeholder work groups to seek input on the priorities and best practices for data development,
 - b. Support local data providers as they adopt appropriate data standards and data collection methodologies,
 - c. Advocate for the use of MSDI data as a best practice.

3. Promote dissemination of GIS data
 - a. Identify data that does not currently exist or is not accessible within the Montana Data List,
 - b. Conduct ongoing maintenance data discovery through the Montana Data List
 - c. Deliver data via download and web services,
 - d. Support the use of the GIS Data List, through training and outreach, for registering Montana related GIS datasets.
4. Partner with the Montana Association of Geographic Information Professionals (MAGIP) and other relevant professional associations for purposes of:
 - a. Education,
 - b. Promotion of GIS in Montana,
 - c. Promotion of the Montana Spatial Data Infrastructure, and
 - d. Promotion of Best Practices and Standards.

FY 2019 Land Plan Budget

The FY 2019 Land Plan Budget represents an increase of \$65,000 over FY 2018. This increase is reasonable given the current slight increase in revenues in the MLIA account. A final determination for the amount of available grant funds will be made at the end of March 2018, in accordance with administrative rule. If additional funds are available, there may be an opportunity to further increase grant funding.

Digital Library	General Fund**	MLIA Funds	NRIS State Core	Coal Tax	Anticipated Contracts/Grants	Total
PERSONAL SERVICES	tbd	495,000			tbd	tbd
OPERATIONS						
Fixed Costs, General Operations	tbd	100,000*		53,184		tbd
Council		10,000				10,000
UM Heritage Contract	52,688	10,000	tbd			tbd
SUB-TOTAL	tbd	615,000	tbd	53,184	tbd	tbd
MLIA GRANTS - FY 18 Budgeted		250,000				250,000
TOTAL DIGITAL LIBRARY	tbd	865,000	tbd	53,184	tbd	tbd

GIS Personal Services FTE	General Fund	MLIA funds
User Services Staff (incl. Coordinator)	0 FTE	1 FTE

Information Management	1 FTE	3 FTE
Information Products	1 FTE	1 FTE
Total FTE	2 FTE	5 FTE

**** Includes funding for a potential cadastral rewrite**

MLIA Account Balance at Beginning of FY2018	1,030,438.17
FY2017 Obligated MLIA Grant Funds	98,145.00
FY2018 Obligated MLIA Grant Funds	249,449.00

DRAFT

Call for Public Comment on the FY2019 Montana Land Information Plan –

The Montana Land Information Plan has been prepared by the Montana State Library (MSL) with contribution from the Montana Land Information Advisory Council (MLIAC). The Plan sets priorities for land information and mapping in Montana, including: Montana Land Information Act Grants, Montana Spatial Data Infrastructure Themes, the MLIAC, and GIS Coordination.

- Read or download the document here: http://geoinfo.msl.mt.gov/GIS_Community/GIS_Coordination/Land_Information_Plans.
- Provide written comment here: <https://www.surveymonkey.com/r/FY2019MontanaLandPlan>

The public comment period will be open for 30 days, closing October 26, 2017 – close of state business.

Comments will be reviewed and taken into possible consideration for the final version. The finalized version of the Land Information Plan will be an action item at the next Council meeting Thursday, November 9, 2017.

Thank you for your time and feedback,

Erin Fashoway
State GIS Coordinator | Montana State Library
406-444-9013 | efashoway@mt.gov

Research Montana Land Information – gis.mt.gov