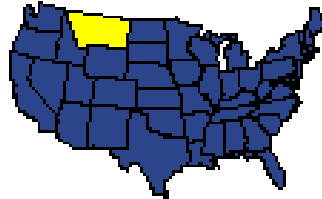


# Montana Land Information Plan

Effective January 15, 2009 to January 14, 2010



Produced by the Montana Department of  
Administration, Information Technology Services  
Division 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.

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## 1. PURPOSE

The objective of this plan is to establish achievable goals and objectives that will further the purposes of the Montana Land Information Act (MLIA). The stated purpose of the MLIA (MCA-90-401) is:

To collect, maintain, and disseminate information (in digital format) about the natural and artificial land characteristics of Montana.

To ensure that digital land information is:

- 1) Collected consistently – in accordance with standards
- 2) Maintained accurately - in accordance with standards, and
- 3) Made available in common ways for all potential uses and users, both private and public.

## 2. ORGANIZATIONAL APPROACH AND IMPLEMENTATION

To fulfill the purpose of the MLIA, the Montana Department of Administration (the Department) has the following fiscal, administrative and coordination duties:

- 1) Serving as administrator of the MLIA account
- 2) Working with federal, state, local, private, and tribal entities to develop and maintain land information
- 3) Preparing an annual Montana Land Information Plan (MLIP) that includes a proposed budget organized by annual goals and objectives, and that describes land information and prioritizes land information:
  - Collection needs
  - Maintenance needs
  - Dissemination needs
- 4) Establishing (by administrative rule) the application and granting processes required to distribute MLIA funds
- 5) Reviewing grant applications for implementation of the MLIP and giving preference to intergovernmental partnerships that meet requirements of the MLIP
- 6) Monitoring the use of MLIA grant funds to ensure compliance with the MLIA
- 7) Coordinating the development of technological standards for land information data creation
- 8) Serving as the primary point of contact (POC) for national, regional, state, and other GIS coordination groups to:
  - Channel issues
  - Channel projects
- 9) Providing administrative support to the MLIAC and paying MLIAC expenses
- 10) Preparing an annual budget corresponding to duties performed
- 11) Reporting to the governor and legislature on the progress made to collect, maintain, standardize and disseminate land information.

To fulfill these responsibilities the department or any recipient of MLIA funds may contract with a public or private entity. Where appropriate, the products of the grants shall be in compliance with general State information technology (IT) and geospatial data standards and/or policies as defined by the Montana Information Technology Act (MITA) and the Federal Geographic Data Committee (FGDC).

The MLIA also created the Montana Land Information Act Council (MLIAC) and assigned it the responsibility to advise the Department regarding:

- 1) GIS issues and land information
- 2) Priority land information and data layer development
- 3) The content of the MLIP
- 4) The MLIA grant development and grant management process
- 5) The management and distribution of MLIA funds
- 6) Identifying, evaluating and prioritizing requests to develop, maintain GIS and land information services

The Council also has the duty to:

- 7) Promote coordination to minimize duplication of effort, facilitate documentation and facilitate data distribution and exchange
- 8) Advocate for the development of consistent policies, standards and guidelines for land information

At mid-year (June) and at the end of plan year (December), the Department will report to the MLIAC the status of the plan's priority tasks and measures of success. The objectives of this plan will be implemented in accordance with the duties and responsibilities outlined in the MLIA and administrative rules.

One purpose for this plan is to give direction for stakeholder groups within Montana wishing to collaborate and apply for MLIA grants that target goals and objectives contained within the plan.

The Department and the Council do not have the authority to mandate the actions of other stakeholders and recognize that accomplishing the purpose of the MLIA, and the goals and objectives of the 2009/2010 MLIP will require the unified cooperation of current and future users of digital land information, both public and private. To that end the Department has created the Montana Base Map Service Center (BMSC) and appointed the State of Montana Geographic Information Officer (GIO) as its head for, among other responsibilities, the purpose of being the State's focal point for internal and external coordination of geospatial activities.

This plan will be in effect from January 15, 2009 to January 14, 2010.

The annual Montana Land Information Plan should minimally provide goals that:

- Support standardized and sustainable methodologies to collect, maintain, and disseminate land information,
- Improve and encourage partnerships and collaboration,

- Encourage and support appropriate integration of geographic information systems technology and geospatial data into business processes and public policy, and
- Foster professional development in land information systems, and assess workforce needs and opportunities.

### 3. PROGRAM GOALS - STATE FISCAL YEARS 2009/2010

Goals from last years plan involving funding and organizational structure have been updated to reflect the progress that the GIO and MLIAC have made with these goals.

#### **GOAL 1: A statewide set of MSDI framework layers that are consistently collected, accurately maintained, and made commonly available**

***Objective 1.1 – Funding and administrative support for local, tribal, state and federal data collection efforts that will help develop and maintain multi-jurisdictional MSDI framework layers.***

Section 5 summarizes funding recommendations and priorities identified by the Department, and by theme stewards in the MSDI annual reports. MSDI framework layer annual plans are available at <http://giscoordination.mt.gov/MiniPlans.asp> . This information is provided to assist the Department and the Council in prioritizing work for the coming year, as well as assisting theme stewards and stakeholders in synchronizing needs and opportunities for MLIA grant applications.

Milestone 1.1.1– Funding available from the MLIA account for MSDI framework layers will be prioritized and provided to grant applicants through the MLIA granting process

Milestone 1.1.2 – Improve and implement the theme review process proposed by the GIO and endorsed by the Council and described in the MSDI Stewardship Review Process document.

#### **GOAL 2 - A physical and organizational infrastructure that will support the long-term collection, maintenance, availability and use of digital land information.**

***Objective 2.1 – 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.***

Milestone 2.1.1 – A proposal from the GIO is presented to the Council that identifies viable alternatives for an organizational framework and infrastructure that will provide the human and technological resources necessary to provide efficient use of GIS and digital land information in the critical business processes of stakeholders throughout the State.

Milestone 2.1.2 – A recommendation from the Council is prepared regarding an efficient and cost effective organizational structure for long-term support of MSDI framework layers and their integrated use by stakeholders.

Milestone 2.1.3 – Refine and implement the recommendations put forth in the Base Map Service Center and Federated Technology Environment white papers.

**Goal 3 – Permanent and secure funding for the consistent collection, accurate maintenance and common availability of MSDI framework layers.**

***Objective 3.1 – Identify, develop, and propose secure funding mechanisms for the consistent collection, accurate maintenance, and common availability of all MSDI framework layers***

Milestone 3.1.1 – A presentation to the Council of a clearly stated proposal for long-term funding for each of the MSDI framework layers. This proposal will include alternatives that compare the use of MLIA funds to support framework layers with other funding options.

Milestone 3.1.2 – A recommendation from the Council of actions necessary to provide long-term secure funding for the long-term support for each of the MSDI framework layers.

Milestone 3.1.3 - Develop the ideas brought forth in the MAGIP/GIO sponsored funding session and documented in the GIO funding white paper.

***Objective 3.2 – Fulfill the administrative and fiscal responsibilities assigned to the Department in the MLIA while supporting other GIS coordination needs.***

Milestone 3.2.1: The Department will prepare and present to the Council a summarized annual funding report for overall MLIA administration costs and a proposed multi-year funding model for Statewide GIS coordination costs, including but not limited to the coordination of MLIA duties.

Milestone 3.2.2 – With advice from the Council, the GIO and the Department will develop and propose to the Governor, and with the Governor's approval to the 2011 Legislature, a funding model that will fairly distribute geospatial coordination costs between administration of the MLIA and other statewide GIS coordination activities.

Milestone 3.2.3 – With advice from the Council, the GIO and the Department will review and if necessary, revise the MLIA administrative rules to address the land information plan schedule as it relates to the State fiscal calendar.

**GOAL 4: Improved quality and efficiency in the business processes of stakeholders through leveraged partnerships, consistent availability of relevant critical land information and the use of GIS technology.**

***Objective 4.1 – Integrated uses of geospatial data in the business and decision-making processes of state policy makers.***

Milestone 4.1.1 – The completion of one or more projects demonstrating how MSDI framework layers, GIS tools and technology, and other digital land information can be used to support priority core business processes and efficiently answer critical land information questions.

Milestone 4.1.2: A presentation of the results of one or more demonstration project complete with maps, tabular reports, and other appropriate analytical results to the Council, the Department and the Governor.

Milestone 4.1.3: The development of communication outreach materials to support funding requests and other efforts to promote the collection, standardization, maintenance and distribution of digital land information.

***Objective 4.2 – Encourage partnerships that bridge the technological divide through inter-sector collaboration.***

Milestone 4.2.1: The implementation of at least one regional GIS center that promotes a federated approach to Montana GIS by providing technical and policy approaches that expand GIS opportunities. A regional GIS center must include local and/or tribal partners.

Milestone 4.2.2: The implementation of at least one partnership project between tribal jurisdiction and a state or local agency.

Milestone 4.2.3: At least three partnerships between data producers and the Montana GIS Portal at the Montana State Library are established and standardized metadata records are registered at the portal. All grants with a data component shall be required to register that data with the Montana GIS Portal.

Milestone 4.2.4: The federal/state partnership effort to create a two-way data exchange of geographic name information continues to move forward.

**4. ANNUAL PROGRAM COST AND BUDGET**

The attached budget projects the Department's estimated allocation and expenditure of 2010 MLIA funds. It is organized to display expenditures by: 1) The Department's coordination and administrative responsibilities and; 2) MLIA grant allocations.

|  | FY 2010 Budgeted Sources |             |                |            |       |         |
|--|--------------------------|-------------|----------------|------------|-------|---------|
|  | MLIA                     | BMSC Grants | Gov. Challenge | ITSD Rates | Other | Total   |
| <b>Est. 2010 MLIA Acct. Bal. (March 09 projection)</b> | 800,000                  |             |                |            |       |         |
| <b>Est. 2008/2009 MLIA Grant Under-spending</b>        |                          |             |                |            |       |         |
| - Flathead Addressing (from 2008)                      | 80,000                   |             |                |            |       |         |
| - Hydrography  | 10,000                   |             |                |            |       |         |
| - Critical Structures (USGS supplement)                | 10,400                   |             |                |            |       |         |
| - DNRC (from 2008)                                     | 20,000                   |             |                |            |       |         |
| <b>TOTAL Available Funds</b>                           | 920,400                  |             |                |            |       |         |
| <b>Expenditures</b>                                    |                          |             |                |            |       |         |
| <b>General Coordination - 66413 &amp; 66415 **</b>     |                          |             |                |            |       |         |
| Personal Services                                      | 162,000                  | 0           |                |            |       | 162,000 |
| Operating  | 78,000                   |             |                |            |       | 78,000  |
| Sub-total  | 240,000                  | 0           |                | 0          | 0     | 240,000 |
| <b>Estimated Cadastral - 66414</b>                     |                          |             |                |            |       |         |
| Personal Services                                      | 77,639                   |             |                |            |       | 77,639  |
| Operating  | 19,200                   | 200,000     |                |            |       | 219,200 |
| Sub-total  | 96,839                   | 200,000     |                | 0          | 0     | 296,839 |
| <b>Estimated Transportation - 66410</b>                |                          |             |                |            |       |         |
| Personal Services                                      | 74,263                   |             |                |            |       | 74,263  |
| Operating  | 19,200                   |             |                |            |       | 19,200  |
| Sub-total  | 93,463                   | 0           |                | 0          | 0     | 93,463  |
| <b>Estimated Critical Structures/Addressing- 66416</b> |                          |             |                |            |       |         |
| Personal Services                                      | 68,229                   | 4,366       |                |            |       | 72,595  |
| Operating  | 19,200                   |             |                |            |       | 19,200  |
| Sub-total  | 87,429                   | 4,366       |                | 0          | 0     | 91,795  |
| <b>Estimated Boundaries - 66441</b>                    |                          |             |                |            |       |         |
| Personal Services                                      | 55,026                   | 13,848      |                |            |       | 68,874  |
| Operating  | 19,200                   |             |                |            |       | 19,200  |
| Sub-total  | 74,226                   | 13,848      |                | 0          | 0     | 88,074  |



Fiscal Years 2009/2010 Montana Land Information Plan

|                                  |         |         |           |         |         |           |
|----------------------------------|---------|---------|-----------|---------|---------|-----------|
| <b>Estimated MLIA Council</b>    |         |         |           |         |         |           |
| Personal Services                | 200     |         |           |         |         | 200       |
| Operating                        | 2,900   |         |           |         |         | 2,900     |
| Sub-total                        | 3,100   | 0       |           | 0       | 0       | 3,100     |
| <b>GIO **</b>                    |         |         |           |         |         |           |
| Personal Services                | 0       |         |           | 115,360 |         | 115,360   |
| Operating                        | 0       |         |           | 35,000  |         | 35,000    |
| Sub-total                        | 0       | 0       |           | 150,360 | 0       | 150,360   |
| <b>NAIP *</b>                    | 0       |         |           |         | 300,000 | 300,000   |
| <b>MLIA Funds Available for:</b> | 325,343 |         |           |         |         | 325,343   |
| MSDI - Non BMSC Steward Funding  |         |         |           |         |         |           |
| MSDI - Local/Other               |         |         |           |         |         |           |
| Governor's Challenge             |         |         | 1,000,000 |         |         | 1,000,000 |
| Metadata                         |         |         |           |         |         |           |
| Regional GIS                     |         |         |           |         |         |           |
| Other                            |         |         |           |         |         |           |
| <b>TOTAL</b>                     | 920,400 | 218,214 | 1,000,000 | 150,360 | 300,000 | 2,588,974 |

2008 and 2009 NAIP MLIA Holdover  
 Pass Thru Funds  
 Governor's Challenge if funded

## 5. ANALYSIS AND RECOMMENDATIONS

### Goal 1 - Analysis and Recommendations

Based on information provided by MSDI theme stewards, four of the thirteen MSDI framework layers – Elevation/Hypsography, Hydrologic Units, Soils and Orthoimagery are primarily funded in FY 2009/2010 by federal agency budgets. The Elevation theme expressed a need for \$50,000 for the completion of statewide 10-meter elevation and an additional \$1,000 for education and outreach regarding LIDAR. The Soils theme requires no state support for completion however training to properly use this important data set could be funded using state money. Hydrologic Units expressed no direct state funding needs.

Assuming partnerships can be put in place, the USDA-APFO National Aerial Imagery Program (NAIP) plans to acquire new statewide 1-meter photography during the summer of 2009. The bulk of the funding for this project will be picked up by our federal partners including the NRCS, USGS, and Forest Service. The total partnership cost to the state for a 4-band product that results in both natural color and color infrared is estimated to be \$553,857 and can be made up of contributions from state, local, tribal and private sector parcels. Present commitments, including \$300,000 of previous MLIA holdbacks, total \$401,500 leaving Montana \$151,857 short at this time. We anticipate being able to collect the remaining shortfall from partners and don't anticipate another MLIA holdback being necessary in 2009.

Of the nine remaining MSDI framework layers, the Geodetic Control theme impacts the geographic accuracy and integrity of all other layers. Initial public release of the Montana Control Point Database (MCPD) is expected during the 2008 fiscal year, additional data collected to enhance the MCPD for Montana must be provided by registered surveyors. Continued enhancement of GCDB control points throughout the state will continue to be important for the geospatial stability of the MSDI. Assuming an extension of the existing Assistance Agreement with BLM, the Department has federal funds in excess of \$300,000 that could be used to leverage MLIA and applicant provided funding. Therefore, the Department recommends continued support for GCDB enhancement projects. The theme could benefit from a quarter time surveyor (.25 FTE or contracted assistance) to administer the MCPD.

The DOA/ITSD Base Map Service Center (BMSC) requested changes in its funding base from the Governor's Budget Office that, if approved there, would have to be approved in the 2009 legislature. These changes were not included in the Governor's 2010/2011 budget. These funding changes were intended to fund the maintenance and enhancement of minimally the Cadastral, Transportation and Critical Infrastructure/Structures, Government Units and

Addressing efforts. Given their importance in the business processes of GIS stakeholders, the Department expects that these themes will file for 2009/2010 MLIA assistance.

The Government Units theme has partial federal funding for FY 2009 through USGS and SBA Assistance Agreements however that funding will terminate in September 2009. Depending on the fiscal note attached to the proposed HB 49, and the eventual outcome of that bill, some state funding may be available as well to continue to fund this position. It is clear that in order to accomplish collection of even a small portion of this theme's sub-themes, additional funding is required.

The primary goal of the Hydrography theme steward, the NRIS program, is a completed High Resolution National Hydrography Dataset. They estimate this will happen in 2009 however some additional funds may be needed to complete an accuracy assessment. Past MLIA requests have ranged in the \$30,000 range although not all of those funds were expended.

Under the stewardship of the Montana Natural Heritage Program, and an initial 2008 MLIA grant of approximately \$122,000, progress on reviewing and correcting the ReGAP landcover classification. In order to improve map accuracy, incorporate higher resolution data, and refine theme delivery it is likely that a 2009 MLIA grant request will be submitted. Heritage's Landcover Program obtained other funding sources this year and if an extension is available for the 2008 grant the 2009 grant request may be in the neighborhood of \$30,000.

The Wetlands theme has estimated that 30% of the state is completed or under contract for completion to the National Wetland Inventory standards. Wetlands theme steward DEQ has leveraged multiple funding sources, including MLIA, to fund mapping projects in Southwest Montana and along the Yellowstone River Corridor. The Confederated Salish Kootenia tribe also used 2007 MLIA funding to support wetlands mapping on the reservation. While no specific project was singled out in their theme report, it appears that work is progressing on bringing together a coalition of funding partners in Northwest Montana. Another 2009 wetlands grant application should be expected.

The Geology theme report did not submit a report.

In Fiscal 2009 the BMSC was granted approximately \$288,000 for support of the cadastral, transportation/addressing, critical infrastructure themes in FY2008/2009 although that figure will be somewhat less due to some USGS grant funds that became available after the grants were approved. The Government Units theme report for 2009/2010 also indicates a potential need for MLIA funding due to a loss of federal funding. With no other funding sources presently available for FY 2010 the BMSC estimates their budget need associated with MSDI at \$351,957.

Additional MSDI theme needs identified or estimated from the theme reports may total approximately \$206,000.

|                              |                  |
|------------------------------|------------------|
| Elevation                    | \$ 51,000        |
| Geodetic Control (estimated) | \$ 20,000        |
| Hydrography (estimated)      | \$ 25,000        |
| Landcover (estimated)        | \$ 30,000        |
| Wetlands (estimated)         | \$ 75,000        |
| Soils education (estimated)  | \$ 5,000         |
| <b>TOTAL</b>                 | <b>\$206,000</b> |

**Recommendation 1.1 - The Department recommends MSDI theme stewards submit grant requests according to their stated needs. Because the MLIA funds come from recordation fees based on land records, the Department recommends that the Cadastral and Government Units themes be prioritized. Further prioritization must come from GIO priorities and the review of grant applications by the MLIAC Grant Subcommittee.**

**Recommendation 1.2 - The Department recommends recognized theme sub-stewards and other groups doing work relevant to MSDI themes to submit grant requests for those projects.**

## **Goal 2 Analysis and Recommendations**

The intent of goal 2 is to encourage partnerships to assist in exploring and proposing alternatives for a viable organizational framework to support GIS throughout the State. This includes developing information and identifying the advantages, disadvantages, and potential funding and organizational support for strategically located regional GIS centers. These centers should supply assistance through product and application development for those typically described as GIS "have-nots" and must include local and/or tribal government. Assuming a viable MLIA grant application is forthcoming; the Department recommends that at least one regional center be provided seed money through MLIA.

Since long term benefits and be derived from short term associations, the Department believes that Tribal GIS could benefit if partnerships, even if they are only for a specific application or project, could be established. These partnerships may not initially go as far as the regional center concept but may lead in that direction if allowed to take hold.

**Recommendation 2 - The Department recommends that FY 2010 MLIA Grant requests for regional partnership projects be solicited.**

In September 2008, Governor Brian Schweitzer issued a challenge to the GIS community to attempt to apply the technology to seven issues important to

environmental and economic development issues in Montana. The issues can be broadly categorized as relating to the following:

1. Abandon mines
2. Forest health and insect infestation (red & dead)
3. Carbon sequestration zones
4. Energy Maps/Atlas
5. Drought
6. Organic matter
7. Mineral rights ownership

The Department encourages partnerships that could take on these issues and supply solutions using GIS technology.

**Recommendation 3 - The Department recommends FY 2010 MLIA Grant requests for funding projects that address the Governor's Challenge issues be solicited.**

With the escalating development of digital information by all sectors, timely access to digital land information requires adequate support for a comprehensive digital records cataloging system. The 2007 State Legislature provided MSL with stable staff funding for GIS Portal development, cataloging existing MSL metadata records, and metadata coordination. However, additional support at the data creation level will be needed to assist in developing and cataloging new metadata records across the spectrum of data producers that have geospatial and tabular records that relate to land information in Montana. The Department encourages activities that develop metadata records and catalogue those records through submittal to the State Metadata Portal.

**Recommendation 4 - The Department recommends FY 2010 MLIA Grant requests for metadata projects that provide standardized metadata to the Portal be solicited.**

Joint research has been conducted by the National Center for Landscape Fire Analysis and USGS on the feasibility of developing a Montana geographic names database. Whether or not geographic names should be a part of the MSDI is still up for debate, however research prioritized three areas where additional work could be conducted. These would be in the areas of federal/state database replication, crosswalking other MSDI framework databases with a geographic names database and developing a web interface to maintain a table of geographic names. The USGS has provided approximately \$40,000 to assist the BMSC to conduct additional research on the feasibility of replicating the federal Geographic Names Information System (GNIS) to a Montana geographic names database and providing value added information that could be passed back to the federal source.

**Recommendation 5 - The Department recommends FY 2010 MLIA Grant requests for a project that continues the work on a Montana Geographic**

**Names Database be solicited providing it is matched with equal federal funds.**