

The Montana Land Information Act FY 2012-2013



**A REPORT TO THE 63rd MONTANA LEGISLATIVE SESSION AS PROVIDED
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Compiled by the Montana State Library

Table of Contents

Contents

Executive Summary	3
Introduction	4
Montana Land Information Act.....	4
MLIA Administrative Changes.....	5
MLIA Funding	7
Montana Land Information Advisory Council	9
Montana Spatial Data Infrastructure	10
MLIA Grants.....	12
MLIA's impact for Montanans	14
Conclusion	16

Executive Summary

Responsibility for the Montana Land Information Act (MLIA) has undergone significant changes in the past biennium. Based on a recommendation from a task force of state agency representatives that was approved the Governor's office and working under an Interagency Agreement, staff and administration of the MLIA are now under the management of the Montana State Library rather than the Department of Administration.

The State Library works diligently to meet the purpose of the act by continuing to develop the Montana Spatial Data Infrastructure (MSDI) and by awarding grants to local and tribal governments. MLIA is funded through a dollar per page recordation fee. These funds have remained relatively stable through changing economic conditions. Collections, which average \$850,000 annually, are increasing following a low in FY10.

Members of the Montana Land Information Advisory Council (MLIAC) meet regularly, representing the multi-sector geospatial business needs of the state. They monitor emerging trends in the geographic information environment and seek opportunities to provide more effective and efficient use of GIS data and tools for all Montanans. Their advice and priorities are documented in an annual Land Plan that is produced by the State Library and through an accompanying Work Plan that documents the management priorities for MSDI.

The Land Plan also documents priorities for awarding grant funds to local and tribal governments. In FY13, the State Library awarded \$252,000 to entities throughout Montana. These grant funds leveraged an additional \$321,500 to support the development of land information at the local level.

People are becoming much more aware of the benefits of using geospatial data. At both the local level and from a statewide perspective, Montanans rely on accurate, statewide land information to make informed decisions on numerous issues impacting daily quality of life. The Montana Land Information Act and the funding it provides ensure that all users, in counties large and small, have the ability to access and use the best possible Montana land information.

Introduction

It is an exciting time to work with geographic information and geographic information systems (GIS) both within Montana and around the world. Hardly a question is posed or a problem addressed that does not have a geographic component.

- Where is the fire located and how large has it grown?
- Who owns that parcel of land where I want to hunt?
- What critical structures must be preserved if there is a disaster in this area?
- Where are the best areas in the state for energy development?
- What can we learn about the spread of disease by looking at it geographically?
- What areas of the state utilize State Library services?

It's not enough just to provide answers to these questions; people want the information mapped and accessible on their iPhones, iPads, laptops, and more. Recognizing the value that geospatial data brings to the efficient planning, implementation and delivery of state services, many federal, state, and local agencies along with tribal governments, now make use of geographic information to enhance delivery of information to the public

Montana Land Information Act

As use of geospatial information increased, the 2005 Montana Legislature passed the Montana Land Information Act (MLIA). The Act reads, in part:

"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."

This act was codified in Montana Code Annotated 90-1-404 thru 90-1-413.

Adoption of the MLIA empowered the State to 1) create standardized base geospatial data known as the Montana Spatial Data Infrastructure (MSDI) (see below) and 2), through the provision of grants to state, local, and tribal governments, to help all sectors of Montana government more fully develop local capacity to utilize geospatial information.

MLIA Administrative Changes

As a result of the proliferation of the creation and use of geospatial data at the state level, it became apparent that Montana needed to develop a better understanding of the true costs of managing geospatial data. To that end, in 2010, Governor Brian Schweitzer directed a task force of state agency representatives to find ways to more efficiently manage and deliver geospatial data at the state level.

In the spring of 2011, this task force recommended the following (source: Memo from then Budget Director David Ewer, May 23, 2011):

- *Align GIS functions in Montana with the center of excellence model outlined in the Governor's State Strategic Plan for IT. This GIS center of excellence would reside within the Montana State Library (MSL).*
- *Move the oversight of the MSDI to the MSL. This will centralize the GIS data services and resolve a longstanding challenge of having this function being served by two organization units.*
- *Move the staff and funding currently assigned to support the Base Map Service Center (BMSC) organizationally to the MSL, continue to fund through the Montana Land Information Advisory Council (MLIAC) grant funding and continue to provide support for BMSC. This will help centralize the GIS services in one organization unit. This would be accomplished with an Administrative Appropriation Budget Change Document and an MOU in the 2013 biennium with permanent statutory changes to follow in the 2013 session.*
- *MSL would assume duties currently assigned to the Department of Administration related to cadastral data in 76-6-212(3), MCA.*
- *Utilize the existing statutory flexibility to share in the oversight of the MLIAC. The MLIAC is currently chaired by the Geographic Information Officer (GIO) and the statute allows for the chair of that group to be another member of the committee. The committee members are appointed by the governor and the requirements for those appointees are also in statute. The GIO would still be part of the committee; the chairperson could be a MSL staff member designated by the Director of D of A, or another member of the committee. Staffing to support the MLIAC would come from MSL. Leadership of the Advisory Council would be provided by the Chair of the council with support from all committee members.*

- *Future statute changes to 90-1-401 and 76-6-212(3), MCA, to remove references to the Department of Administration and insert references to the Montana State Library.*
- *The technical administration of MSDI in Montana would be the responsibility of MSL. The State Information Technology Services Division (SITSD) would assume a traditional information technology application hosting role for use by MSDI and state agencies' business GIS. SITSD and MSL would develop an MOU to ensure these two entities work closely together to move GIS forward. The MOU must address how these two functions work together to better serve the GIS customers across the state. These customers include State agency staff, Local, Tribal, and Federal government entities and the general public.*
- *MSL would manage the Enterprise License Agreement with Esri contract.*
- *MSL is encouraged to complete a comprehensive plan that includes a date by which they will move to the SMDC (State of Montana Data Center) (likely co-locate).*

The task force concluded that the benefits of this change would:

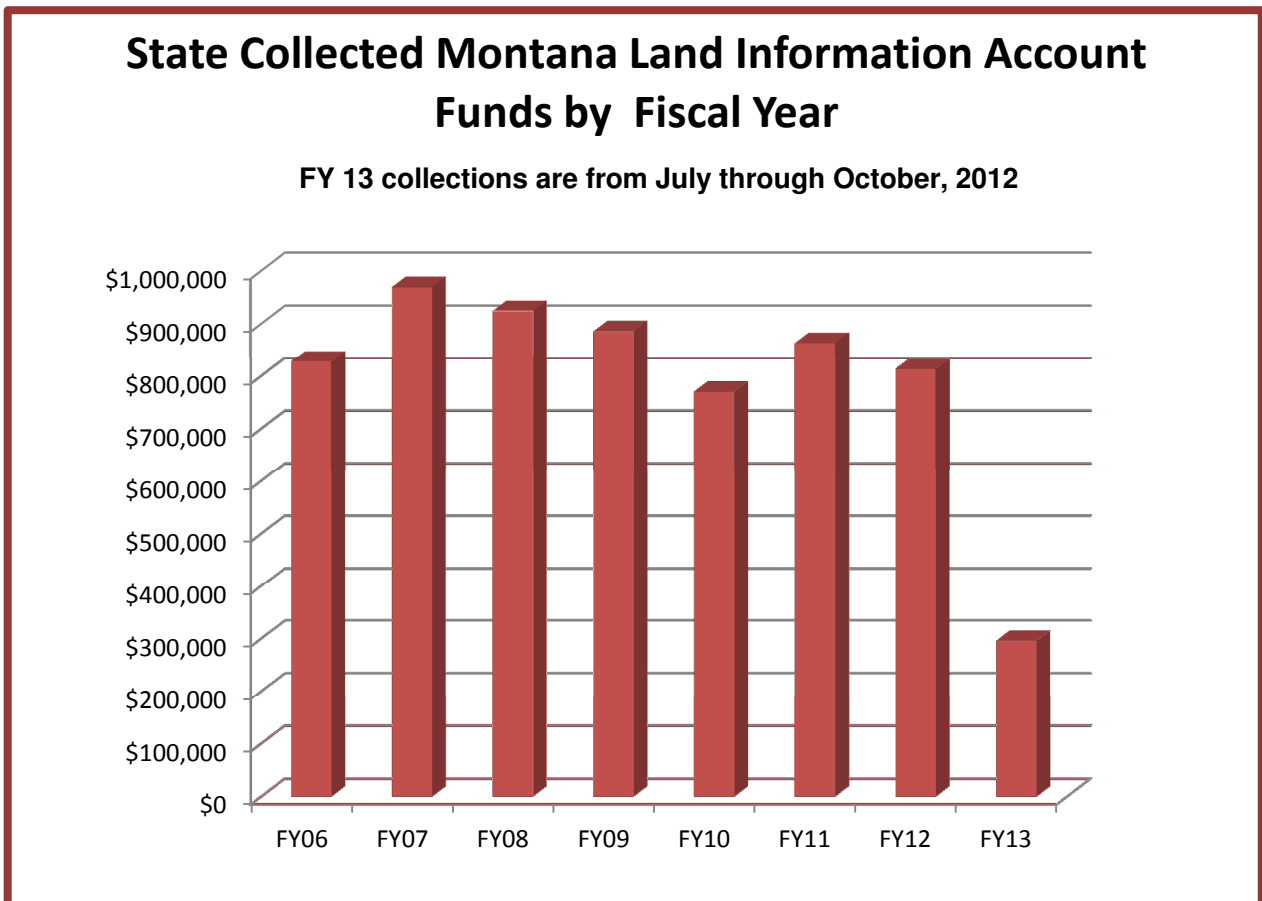
- *Centralize the GIS service in one organization unit. The core service provided by the MSL is a logical unit to deliver GIS information and provide the long-term vision for the information needed to better service customers. SITSD primarily focuses, in regard to GIS, from a technical perspective. This recommendation continues to involve SITSD from a technical perspective, but allows the MSL to be the primary organization unit to deliver the GIS content.*

The Governor's Office approved these recommendations in May 2011 and they were endorsed by the State Library Commission in June 2011.

The recommendations above, including the transfer of the BMSC to MSL, were enacted through an interagency agreement between the Department of Administration and the State Library that was signed in September 2011; it remains in effect until June 30, 2013. DOA and MSL have drafted legislation (House Bill 38) that will be brought before the 2013 Legislature to codify these changes as recommended by the task force and Governor's Office. The proposed changes are housekeeping in nature and will replace any reference to the Department of Administration with the State Library.

MLIA Funding

The Montana Land Information Account is funded through document recording fees as described in MCA 7-4-2637. For each dollar per page MLIA recordation fee, 25 cents is retained by the county and 75 cents is deposited in the state MLIA account. The state account, while impacted by economic conditions, has remained relatively stable since inception. Since 2006 the account has collected on average \$850,000 annually. For the four month period from July 2012 through October 2012, collections are approximately 17% above those of FY12.



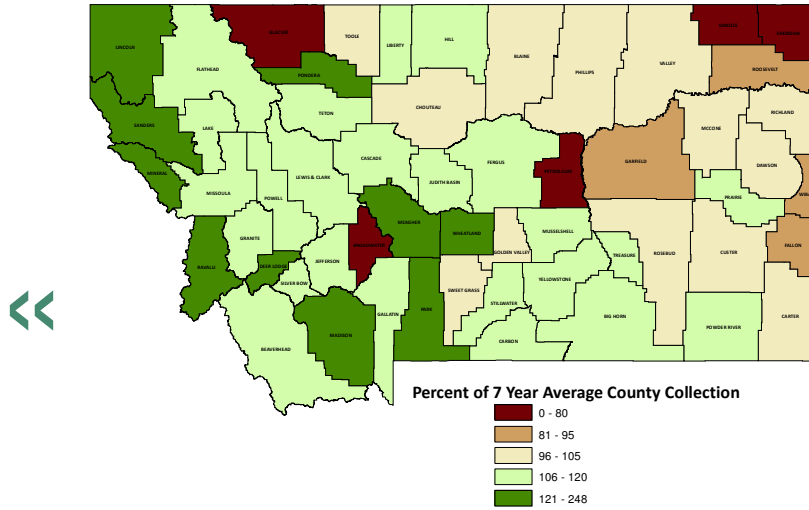
Geographic analysis of funds collected over time shows an increase in the eastern part of the state due to the increase in oil and gas leases in that area. However, the economies in the western counties, which were formally buoyed by development and therefore recordation of subdivision plats and related

documents, have suffered. Note the differences in average annual MLIA collections by county between FY2007 and FY2012.

Montana Land Information Account Collections - FY2006 through FY2012

Annual county MLIA collection shown as a percentage of the six year average county collection

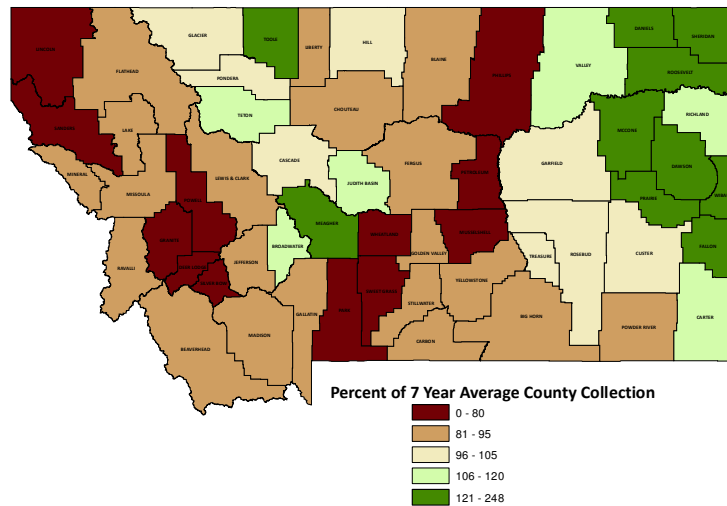
Current Data Frame Time: 2007



Montana Land Information Account Collections - FY2006 through FY2012

Annual county MLIA collection shown as a percentage of the six year average county collection

Current Data Frame Time: 2012



Montana Land Information Advisory Council

The MLIA established the Montana Land Information Advisory Council (MLIAC) as a replacement for the Montana Geographic Information Council originally created under a 1997 Governor's Executive Order. The Council's statutory duties are:

90-1-406. Land information advisory council -- duties -- advisory only. (1) *The council shall:*

(a) advise the department with regard to issues relating to the geographic information system and land information;

(b) advise the department 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 department on any element of the plan;

(d) advise the department on the development and management of the granting process described in [90-1-404\(1\)\(e\)](#);

(e) advise the department 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.

(2) The council functions in an advisory capacity, as defined in [2-15-102](#).

The Council meets regularly, representing the multi-sector geospatial business needs of the state. They monitor emerging trends in the geographic information environment and seek opportunities to provide more effective and efficient use of GIS data and tools for all Montanans. Their advice and priorities are documented in an annual Land Plan that is produced by the State Library and through an accompanying Work Plan that documents the management priorities for MSDI. More information about the Council, including membership and meeting materials, is available online:

http://msl.mt.gov/About_MSL/Montana_Land_Information_Advisory_Council/default.asp.

Montana Spatial Data Infrastructure

Development of the Montana Spatial Data Infrastructure (MSDI) is consistent with the core MLIA purpose *"to develop a standardized, sustainable method to collect, maintain, and disseminate information in digital formats about the natural and artificial land characteristics of Montana"* (MCA 90-1-402). The MLIAC has identified fourteen geospatial "framework" themes that serve, usually in some combination, as base geographic data onto which other land information can be overlaid and analyzed. More than just data alone, a spatial data infrastructure is often defined as the standards, institutional arrangements and policies that enable discovery and use of geospatial information.

The fourteen MSDI themes with an accompanying short summary description are contained in the table below. The first seven are recognized by the Federal Government as part of a National Spatial Data Infrastructure (NSDI) while the remaining seven have been prioritized by the MLIAC with input from the Montana GIS community.

THEME	DESCRIPTION
Administrative Boundaries	Boundaries of legal entities such as cities, counties, states or tribal nations, school districts, legislative districts etc.
Cadastral	Data representing rights and interests on the land. In Montana it is presently defined by the taxable parcel
Elevation	Land information related to elevation above or below a surface such as contours or digital elevation models
Geodetic Control	A set of known positions with precisely determined locations from which other locations can be referenced
Hydrography	Surface water streams and water bodies
Orthoimagery	Serial photographs and/or satellite imagery
Transportation	Public ground transportation routes including roads, trails, railroads, bridges, ramps etc.
Geographic Names	Names and locations of any object whose name can appear on a map, road, stream, valley, mountain peak etc.
Geology	Geologic formations and features
Hydrologic Units	Watersheds and drainages at basin and sub-basin levels
Land Cover	All natural vegetation, land cover and land use
Soils	Digital representation of certified soil mapping and associated attributes
Structures and Addresses	a statewide database of structures and address points
Wetlands	All wetland and riparian areas as defined by the National Wetland Inventory and the Western U.S. riparian mapping system

MSDI data may come from a variety of sources including information collected by local governments and tribal nations. Working under the well-documented premise that data is of higher quality when produced closer to the source, staff of

the State Library dedicate hundreds of hours each year to providing training, technical support and additional outreach to local governments around the state. Without this support, many local governments would not have the resources and expertise needed to contribute to or make use of this invaluable information resource. For example, in the past year, MSL staff visited over 20 rural counties to discuss common needs for address data. Working in partnership with the State Broadband Program, MSL distributed over \$100,000 in small grants to boost local address programs and, in return, received long-term data sharing agreements. Similarly staff visited the more urban counties, with established GIS programs, to assist county staff in adjusting their cadastral data to a higher accuracy base helping their data to better correlate with existing state data, such as aerial photography. Because MSDI data is integrated using standardized methodologies, when it is made available at the statewide level, users of this data do not have to be concerned about data gaps when they reach a county border.

In addition to serving the needs of Montanans, the Montana Spatial Data Infrastructure is sometimes used by large commercial companies like Google and Bing Maps. These companies provide common reference base maps for a variety of PC, tablet and smart phone applications. Although a valuable tool for reference purposes, these publicly available data sets should not be considered a replacement for MSDI data, particularly for government purposes when the most current, validated data is required. Imagine yourself in trouble at the end of Elk Creek Road in Lewis and Clark County; to rescue you, emergency providers need dependable data. In the maps below, the commercial provider actually routes a user along Hay Coulee Road. Unfortunately, Hay Coulee Road has been washed out for years in the area where it once connected with Elk Creek Road. The MSDI Transportation framework, because it uses the most reliable data source and Lewis and Clark County GIS data, clearly shows that the roads no longer connect.

Common Commercial Data Source



MSDI Transportation



The MSDI data layers are in various states of development. The MLIAC has identified the completion, dissemination, and ongoing maintenance of the MSDI as a top priority as stated in the annual Montana Land Plan:

http://msl.mt.gov/About_MSL/Montana_Land_Information_Advisory_Council/pub_Land_Plan_FY13_14_final.pdf.

Annual priorities for MSDI management are documented in the MSDI Work Plan:

http://giscoordination.mt.gov/Documents/MSDI_FY13_workplan/MSDI_workplan_FY13_Final.pdf.

MLIA Grants

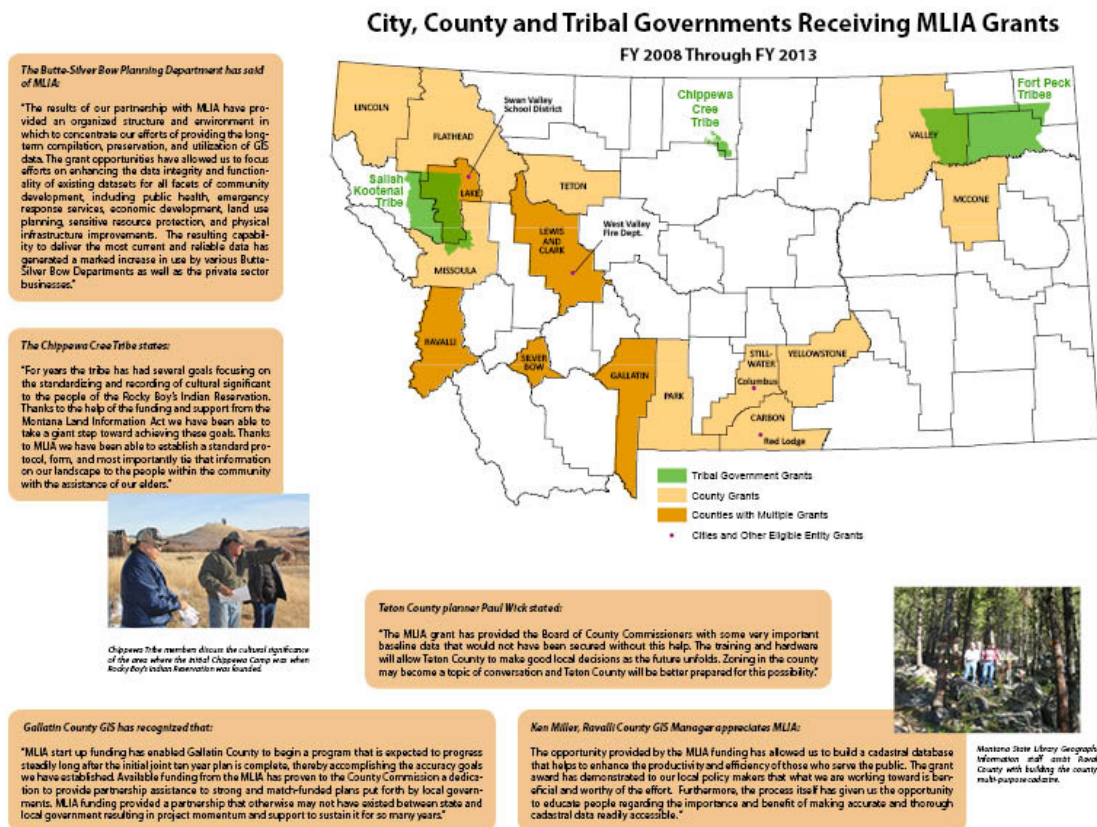
In addition to planning for administration and the ongoing development of the Montana Spatial Data Infrastructure, the Montana Land Plan provides criteria used to award dedicated MLIA grant funds to local and tribal governments. The FY13 funding awarded to local communities and tribes:

- contributes to and/or advances MSDI;
- supports multi-jurisdictional geographic information consortiums to approach problem solving that can demonstrate value to policy makers;
- uses GIS to solve local issues to improve quality of life;
- promotes the sharing of land information through the Montana GIS Portal; and
- develops methodologies to better preserve land information.

For FY 2013 the following local entities shared more than \$252,000 in grants, the highest amount awarded at the local level since the creation of the act.

Grant Name/Type	MLIA Share	Leverage Amt.	Leverage %
B1 MSDI Partner Grants			
GCDB Gallatin Co	\$10,000	\$15,346	153%
GCDB Park Co	\$20,000	\$10,000	50%
B1 MSDI Local, Regional, Tribal Support			
Certificates of survey Lewis & Clark Co	\$60,000	\$25,000	42%
GIS in Rural Communities Swan Valley School	\$37,207	\$33,893	91%
Public Infrastructure Town of Columbus	\$31,369	\$149,720	477%
Public Lands Infrastructure Lake Co	\$20,700	\$30,082	145%
Rights of Ways McCone Co	\$10,103	\$3,132	31%
Traffic Control Data Stillwater Co	\$26,813	\$34,919	130%
Rural Planning Web Map Missoula Co	\$20,000	\$8,287	41%
Total B1 and B2 Grants	\$236,192	\$310,379	131%
B3 - Metadata			
Metadata Lincoln Co	\$16,150	\$11,205	69%
Total B3 Grants	\$16,150	\$11,205	69%
Totals for All Grant Applications	\$252,342	\$321,584	127%

These grant funds leveraged an additional \$321,500 to support the development of land information at the local level. In FY12, local and tribal grants in the amount of \$174,326 were approved (no local or tribal grant applications were denied), leveraging an amount of \$170,912.



MLIA's impact for Montanans

People are becoming much more aware of the benefits of using geospatial data. Lewis and Clark County's GIS department maintains over 200 data layers that are accessed by local government workers via their desktops or their GIS web site. The data is used for everything from emergency services to planning new streets to monitoring storm sewers.

The general public also makes excellent use of all of the data that the Lewis and Clark County GIS department develops and maintains. Instead of having to actually go to the clerk and recorder's office in person, citizens can access all the information they need on their property – from how close the nearest fire hydrant is for home insurance purposes to where they go to vote.

Thanks to the Montana Land Information Act grant, all users of the data can feel confident in its accuracy since the grants Lewis and Clark County received through MLIA helped the County to improve the available GIS data which, in turn, improves the accuracy of the cadastral and the parcel base map.

“Having good base level data for government to work off of is a benefit to the whole community,” said Eric Spangenberg, GIS Coordinator for the City of Helena and for Lewis and Clark County. “Decisions are based on this data and by making the best possible data available, GIS ensures that better decisions can be made.”

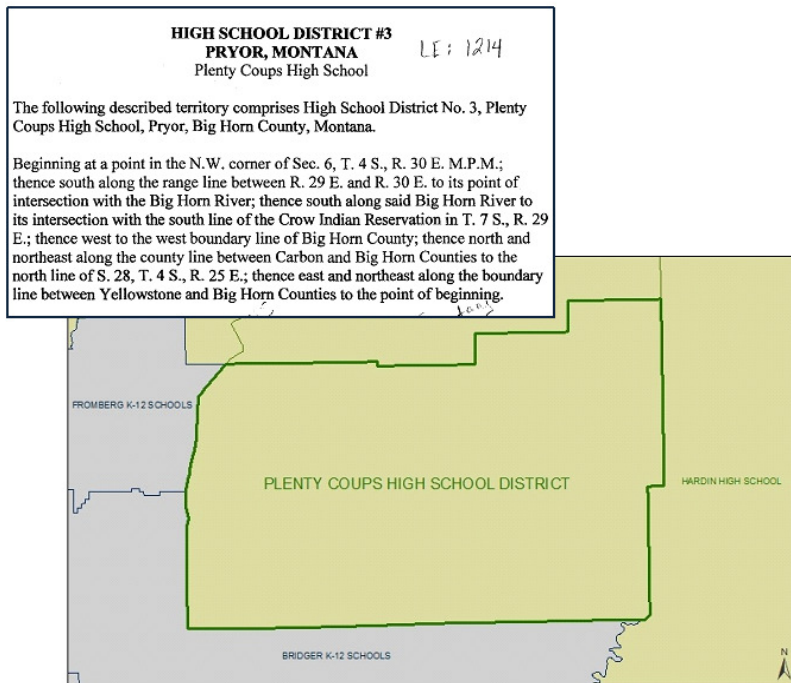
Spangenberg believes that the passage of the Montana Land Information Act was positive for the state of Montana and for local governments because it provides a level of funding for GIS work and coordination that would otherwise likely not exist. For example, Lewis and Clark County used the funds they collect through MLIA recordation fees to set up an account they leverage for grant-related projects. They recently took \$25,000 from the account and used it as a match for a \$60,000 MLIA grant.

Spangenberg also believes that MLIA helps bring geospatial data to the forefront by making people aware of its existence and helping them to understand the benefits of using this kind of data. People are now accustomed to accessing information when they want it – even in the middle of the night – and from where they are, at home, work, or in the field. Because of the long-term funding commitment provided by Lewis and Clark County and the City of Helena, the GIS program has always provided quality data to its citizens. The supplemental grant funding from MLIA has allowed Lewis and Clark County to leverage existing fund sources to further increase the quality and availability of this critical data to the community.

“Thanks, in part, to the Montana Land Information Act, we are providing high quality information to people when and where they want it,” said Spangenberg. “We are meeting our users' needs and expectations because this data is made readily available.”

Erin Fashway, the Montana State Library's administrative boundaries framework lead, is the person responsible for managing the information about all of Montana's intangible lines. How we divvy up responsibility for our world is based on the intangible lines we draw. In what county do I live? Where do I vote? How am I taxed? Where does my child go to school? Who is my Montana Senator? What emergency services do I receive? These questions are all linked to some geographic boundary drawn and managed in a GIS.

For example, because legal land descriptions are textual, they are much more meaningful when mapped. Below is an example of a school district boundary map created from the legal land description (text box at the top) of Plenty Coups High School District – Pryor, Montana; the map data is made available through the MSDI Administrative Boundary Framework.



The Montana Land Information Act allows for the development of statewide datasets, like these school district boundaries found in the Administrative Boundaries Framework, which represent these legal boundaries as map data layers developed and compiled in a consistent manner. Because of Erin's work, Montanans – whether they're GIS analysts, developers, or an interested citizen – can access information on the many ways that Montana is divided by boundaries. Erin and other framework leads at the State Library all work in cooperation with the private sector, Montana's tribes, and with local, state, and federal governments – to build the MSDI. However, the largest benefit to citizens is not just that the data is available, but that the data is accurate, up to date, and is produced consistently statewide.

Conclusion

Thanks to the Montana Land Information Act and the leadership of the State Library and the MLIAC, Montana is meeting its goals to provide standardized, statewide geospatial data that can be readily used by our fellow citizens.

One of the State Library's long range goals is to promote partnerships and encourage collaboration. We often say that collaboration is the tide that raises the communities we serve. It is this collaborative spirit, and an emphasis on open access to shared information, something that is at the heart of the Library's mission, that sets Montana apart in our ability to manage and provide access to land information. Because of our statewide approach to develop, integrate, preserve, and provide public access to this information, much of which is supplied by our partners at the local level, users of this data do not have to worry about whether the information resources will end when they hit the county border. The broad use of this data and the economic value it provides is evidence that the tide is rising and that is something of which we can all be proud.