The Montana Land Information Act

FY 2014-2015

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."

A REPORT TO THE 64th MONTANA LEGISLATIVE SESSION AS PROVIDED FOR BY MCA 90-1-404(L) AND MCA 5 -11-210

Compiled by the Montana State Library

November 1, 2014

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Executive Summary

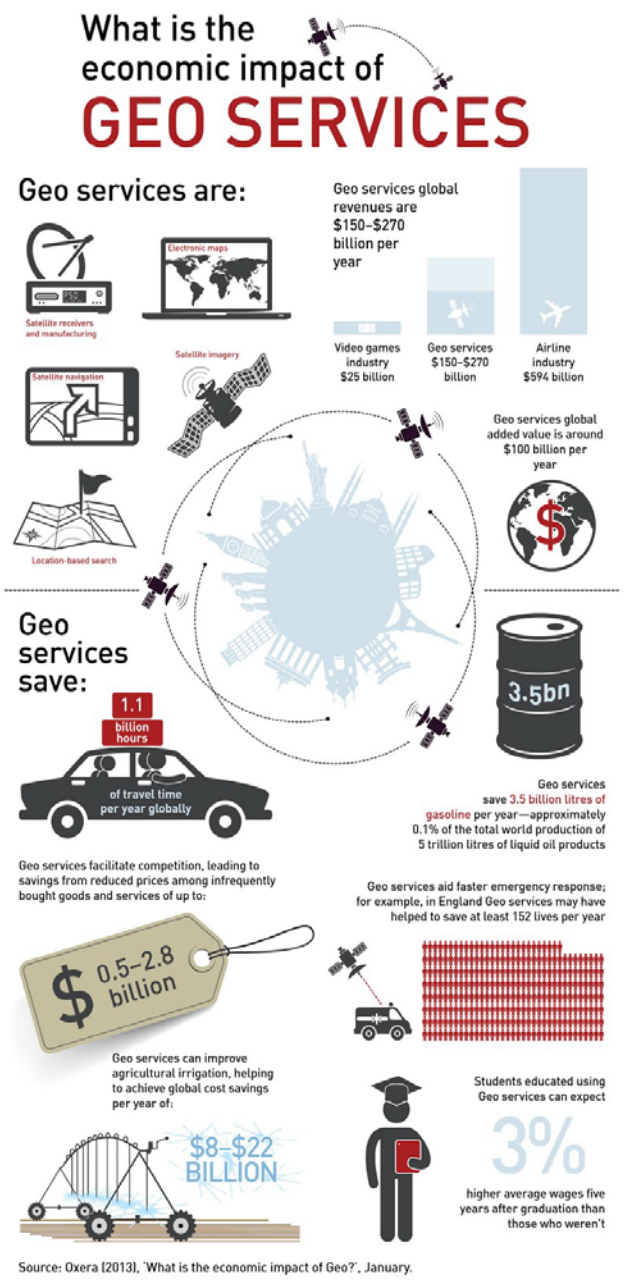
As amended during the 2013 Legislative Session, theMontana Land Information Act (MLIA) (90-1-404 MCA) grants authority to the Montana State Library (Library) to coordinate the development of geographic information system standards for creating land information. As envisioned by the 63rd Montana Legislature, the amendment (HB38) has brought an orderly transition of the authority and associated duties of the department to the Library. The Montana Land Information Account (Account), created under 90-1-409 MCA, provides the Library, along with our data partners and grant recipients, critical financial resources needed to create, integrate, maintain and distribute the core locational data required to meet the state's business needs.

In today's connected world the map, and the data behind the map, is a common language that allows diverse interests to communicate. Success breeds success and the demand for the data and applications created by efficient use of MLIA funds is almost insatiable. Yet significant challenges loom on the horizon. Post recessionary economic forces have reduced MLIA collections at a time when demand for use of the funds is increasing. Inflationary triggers were not built in to the funding mechanism of the Account causing stagnate and even declining funding thereby limiting the ability of the Library to meet data demands. The Montana State Library respectfully submits this report to the 63rd Legislature as both a celebration of the good that is being accomplished through effective administration of the act and as a caution that without increased support for the creation and use of geographic data, Montana will find itself at a disadvantage whether competing with other states for new economic opportunities, providing for the health, welfare and safety of our citizens or protecting our precious natural resources

MLIA and Geo-Services

In 2014 geography isn't about memorizing state capitols or names of major rivers. Montana realtors, bankers, farmers and citizens seeking location based information use digital maps every day. The data we expect to be on our phones and tablets instantly is creating jobs and economic growth globally and here in Montana. Directions Magazine, using a 2013 study by Oxera entitled "What is the economic impact of Geo?" estimated ***"the global geo services industry is valued at up to $270 billion per year and pays out $90 billion in wages. In the U.S., it employs more than 500,000 people and is worth $73 billion."***

A 2009 analysis conducted by the Montana Department of Administration concluded the following about the Montana Cadastral Database ***"Financial benefits to the private sector, state agencies, and private citizens far exceed the cost of the investment. At a minimum, the cadastral infrastructure has returned $46,000,000 in value over the last 10 years, with the real benefit total being probably far greater."***



The Montana Land Information Act (MLIA), and the associated account, has been an unprecedented success as documented through the success stories associated with the Montana Spatial Data Infrastructure (MSDI) and the MLIA grant program provided in this report. Unfortunately, it is becoming increasingly evident that the current State MLIA business model that funds much of the creation, maintenance, integration, standardization and dissemination of core geographic data and services is both volatile and cannot keep pace with the demand. A review of the Account is provided on page xx. This review demonstrates to the Governor, Legislature and other state and local policy makes the need to consider additional and/or alternative funding sources in order for the State to continue to meet the demand for geographic data and services.

Montana Spatial Data Infrastructure (MSDI) and the MLIA

The MSDI is a collection of fifteen core data themes that individually, or in concert, provide the base map data critical for geo-services to operate. While not all work on MSDI themes is funded by the MLIA, the coordination the MLIA supports could be described as the glue that holds it all together. The fifteen themes are listed below.

Administrative Boundaries
Cadastral
Climate (new in 2013)
Elevation
Geodetic (Mapping) Control
Geographic Names
Geology
Hydrography
Hydrologic Units
Land Cover
Orthoimagery
Soils
Structures and Addresses
Transportation
Wetlands

Rather than immediately examining individual accomplishments we first take a holistic look. The following table suggests MSDI usage, based on consumption of web services, is generally rising. Not surprisingly the two largest consumptive services are those based on land records, the base map services associated with the cadastral web site, and the multi-year imagery service.

Table 1

Month	Service Usage in MBs(MSDI and Base Map Services)	Distinct Users
2013 July	352815.25	31703
2013 August	357701.07	34512
2013 September	456467.95	34627
2013 October	383668.43	36220
2013 November	366985.90	37470
2013 December	372273.58	29165
2014 January	375229.47	32837
2014 February	342123.51	32668
2014 March	398680.89	39837
2014 April	491606.95	37775
2014 May	398218.04	39661
2014 June	436674.48	38570
TOTAL:	**4732445.52**	**425045**

These usage statistics reflect overall societal demand for data and maps wrapped inside web applications. Advice at the recent National States Geographic Information Council's annual convention was "Don't fight the web – you will lose". Citizens expect geographic data in map form when they want to solve problems whether it is to find a restaurant or

a hunting spot. Policy makers expect geographic data in map form when attempting to equitably assess the value of property or equitably distribute funds for education.

MLIA statute requires that MSL annually develop a land information plan that describes the priority needs to collect, maintain and disseminate land information. One way of looking at accomplishments is to examine progress on identified FY14 land plan challenges. Accomplishments can be demonstrated in the following areas and many of those accomplishments are directly related to MLIA funding:

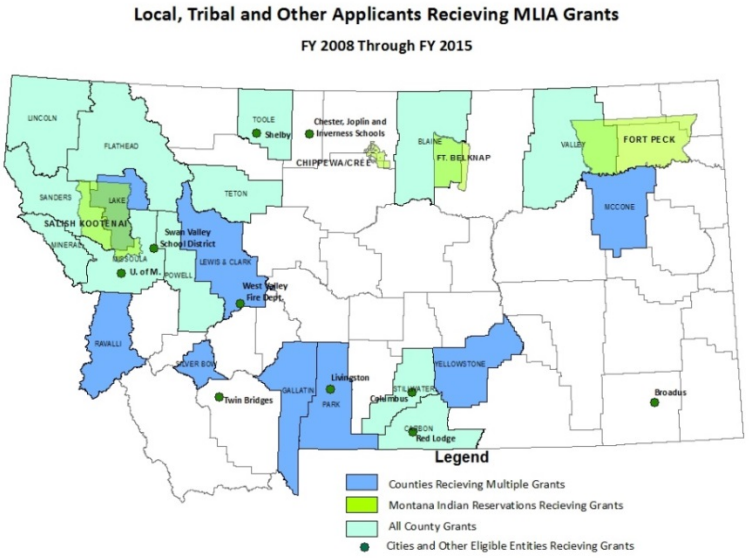
1. The transition of custodianship of the PLSS from the BLM has been completed with the first release of CadNSDI Montana Vintage 7/1/2014 released as an export from the Esri Parcel Fabric. MSL will begin our first adjustments to the parcel fabric based on GPS and photo interpreted control in October thus meeting citizen demand for higher accuracy parcel data that better aligns with aerial photography.
2. The Geographic Names framework was updated in July, 2014 with the June 1, 2014 release of the federal Geographic Names Information System. At this time MSL became aware that the US Geological Survey (USGS) also maintains a list of the unofficial alternate names that are known for all the features and a file with historical information and other notes about some of the features. MSL extracted the data for Montana from these files and added them as related tables to the framework zip files on our web site. Users of the Library's Topofinder web application can now find features whose alternate or historical names match the search criteria.
3. The Montana Hydrography Working Group has been reinvigorated and meets quarterly to discuss hydrography data needs. Each of the core water-related State agencies (DEQ, DNRC, FWP), as well as the USGS, Forest Service, National Park Service, and the Montana Climate Office participate in the working group. Efforts over the past year have primarily focused on improved transparency to the hydrography stewardship process with the overall goal of making demonstrable progress improving the quality of the hydrography dataset. Notable accomplishments include publication of a stewardship and edit submission guide, ongoing development of workflows to leverage existing hydro-related datasets to systematically find and fix data issues throughout a sub-basin, and development of a web application that allows users to submit and track hydrography revisions online.
4. In an effort to provide improved GIS collaboration to support public safety communications MSL has met several times with the Department of Administrations Public Safety Communications Bureau. Because Next Generation 9-1-1 relies so heavily on GIS data and tools, implementation, especially in areas in rural Montana will bring substantial data challenges related to addresses and boundaries.

5. The Montana Climate Office has developed MSDI and Montana Association of Geographic Information Professionals (MAGIP)- compliant procedures to publish statewide seamless datasets of daily, monthly, and yearly minimum temperature, maximum temperature, mean temperature, precipitation, greenness (NDVI), enhanced greenness (EVI), evapotranspiration, and potential evapotranspiration. This collection of over 150,000 statewide datasets is hosted on the Montana Climate Office FTP site with complete ISO compliant metadata. Publishing of this collection is nearing completion.
6. While federal funding support of MSDI continues to trend downward, the MT Natural Heritage Program (MTNHP) was able to negotiate a $250,000 grant to complete wetland and riparian mapping on Bureau of Land Management lands.
7. A new two year enterprise license agreement with Esri has been successfully negotiated for agencies of the State of Montana to be in effect for the FY16/17 biennium.
8. The expired Montana geospatial strategic plan was replaced by a shorter term strategic vision for FY 14/15. The strategic vision has been endorsed by MLIAC and the Montana Association of Geographic Information Professionals (MAGIP).
9. The Montana Site Selector application http://svc.mt.gov/gov/siteselector was created for the Governor's Office of Economic Development by the State Information Technology Services Division (SITSD). The site integrates many MSDI GIS Services in an effort to spur business development in Montana.

The MLIA Grant Program

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 FY14 and FY 15 MLIA grant program provided funding to counties, local communities and tribes for projects that contributed to and/or advanced the MSDI; supported multi-jurisdictional geographic information consortiums; used GIS to solve local issues to improve quality of life and promoted the sharing of land information through the Montana GIS Portal. Two Montana school districts have also received grants to train the next generation of GIS analysts, cartographers and problem solvers.

The Montana Land Information Advisory Council had the foresight to give the kids a chance. This is what OUR student leadership team has done: Set up classroom activities for teachers and students from grades k-12; updated the cemetery maps using Computer Aided Design; assisted with the design and installation of the base station antenna mount; provided technical support to the teachers; they are currently gathering data for the water mains and city infrastructure through the GIS independent study; gathered data points on for the cemetery; met with county, city, and school officials; presented their project to the Montana Association of Geographic Information Professionals; and they continue make their way with GIS and create maps. Future development includes the implementation of GIS with in the newly updated Outdoor Classroom. – ***Gail Shatkus, Liberty County Community Partnerships Program Manager***



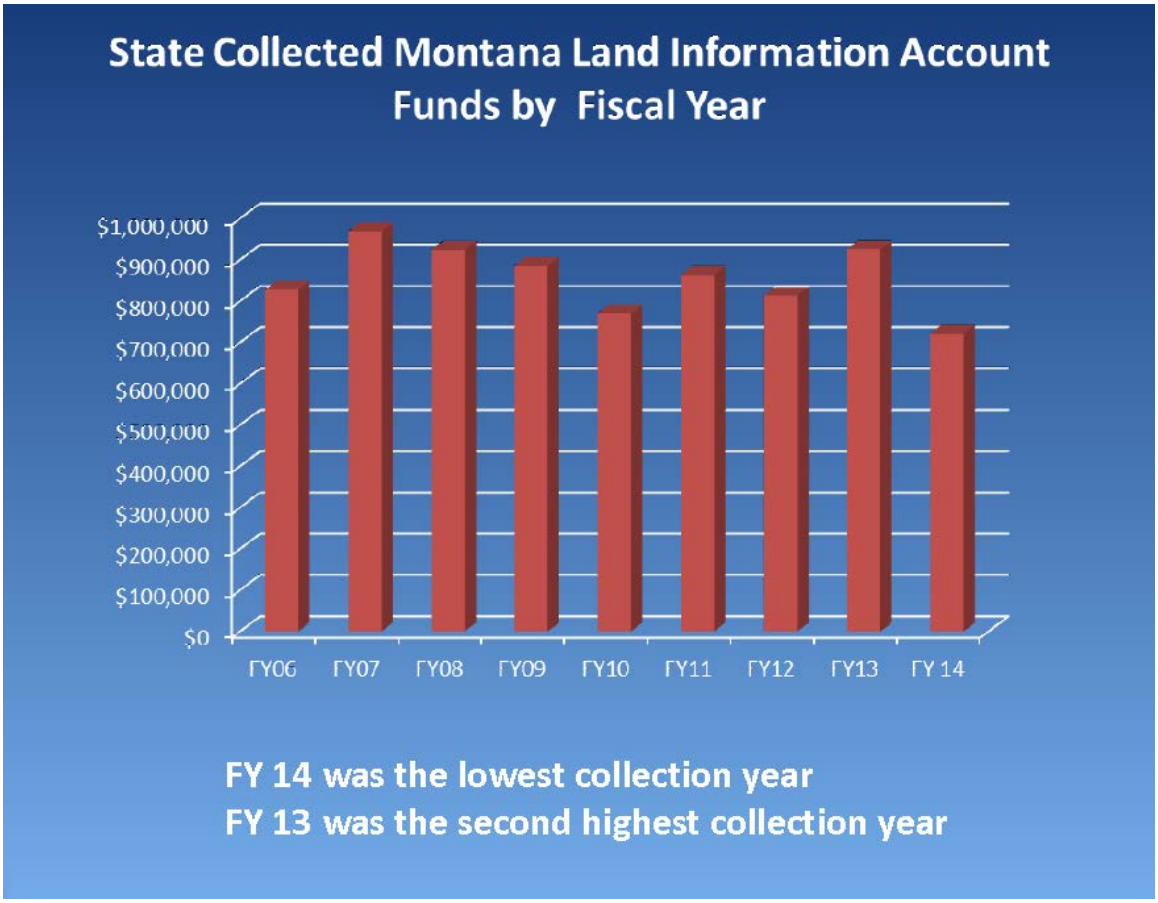
In FY 2015 the following local entities shared more than $300,000 in grants, the highest amount awarded at the local level since the creation of the act.

MLIA FY15 Applicant	MLIA Share	Leverage Amount
CarbonCo_PLSS	$33,000	$31,050
ParkCo_PLSS	$20,000	$10,000
Twin Bridges_PLSS	$20,850	$4,979
McConeCo_Road Asset Inventory	$12,966	$3,442
Shelby_Water Utility	$36,050	$40,379
SandersCo_Web GIS	$15,152	$2,440
MineralCo_Cemetary Mapping	$14,723	$4,801
Livingston - GIS Development	$18,900	$5,176
UM_Fire Atlas	$18,973	$6,776
PowellCo_ Land Use Inventory	$15,870	$28,238
Ft. Belknap_FTBGIS	$23,365	$64,703
TetonCo_Web GIS	$14,852	$1,500
BlaineCo_GIS Program	$19,552	$19,980
Broadus_Metadata	$20,000	$30,500
LincolnCo_Web GIS	$18,740	$28,470
Land Plan Estimate of Available Funds ($300,000)	$302,993	$282,434

These grant funds leveraged an additional $282,434 to support the development of land information at the local and tribal . 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.

Montana Land Information Account

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 portion of the account has averaged approximately $850,000 annually yet encounters rather volatile swings. FY 13 had the second highest year of collections at $926,068 while FY 14 had the lowest collection ever at $721,748. These types of swings make it extremely difficult to plan for and administer MSL's Geographic Information Program and makes the MLIA grant funding unpredictable.



Investigations into why the collections have dropped have been inconclusive. Rising interest rates have slowed home refinancing and increased home sales have not materialized to compensate. Much of the land in northeast Montana has already been leased for oil and gas production slowing those document recordations. An analysis of FY15 first quarter collections does not show any signs of improvement. The FY16 budget as proposed in this plan is $752,000, approximately $200,000 less than the FY15 budget. Whatever the reasons behind the volatility, the impact has debilitating consequences.

While MSL believes that the current distribution of MLIA funding for GIS coordination, MSDI maintenance and development and local/regional grants has been efficient, ultimately over time the funding simply cannot meet growing demand. Other funding sources must be found to bridge the gap. If those sources cannot be found the end result is instability in the foundation of the programs that the MLIA has traditionally

supported; State GIS coordination, MSDI development, and a grant program that has become increasingly popular. As proposed the grant program will receive half of the reduction. At a time when these grants seem to finally be building local GIS capacity these cuts will slow that growth. MSL will need to make hard choices as the portion of the MLIA account flowing to their programs is reduced by $100,000 as well. Starting immediately MSL will need to identify areas of budget savings, identify potential sources of additional income and identify MSDI activities that will not be funded if new income sources do not materialize. If those sources do not materialize consequences such as the following may be unavoidable:

- Lack of the ability to fully meet the FY 16 Land Plan priorities in the areas of land records, water and addressing
- The Montana Natural Heritage Program's ability to revise the current Land Cover, including their ability to solicit field data from partner agencies; coordinate data collection efforts, standardize and/or update the mapping units to newly developed National Vegetation Classification standards. They also risk losing their .8 FTE ecologist/image analyst whose position is half-funded by MSDI with the result of corporate loss of memory and extensive ecological knowledge
- Lack of the ability to provide match for funding opportunities that support projects, especially in the Landcover and Wetlands themes.
- Outreach, education, requests for information and general MSDI coordination efforts may be impacted.

Conclusion

Thanks to the Montana Land Information Act and the leadership of the State Library and the Montana Land Information Advisory Council, 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. If this statement is to be true in the future then we must work together to ensure that the State continues to have the resources and capacity to continue this work