

Montana Land Information Plan

Effective January 16, 2015 to June 30, 2015 for planning purposes and from July 1, 2015 to June 30, 2016 for task completion and budget purposes



Missouri River as it leaves the Mountains - Photo Source: National Geographic

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

Table of Contents

Table of Contents.....	2
Introduction and Overview.....	3
Funding and Granting Process	4
FY 14/15 Accomplishments.....	4
Current Challenges.....	6
FY16 Data Priorities.....	10
Land Plan Priorities Proposed for Funding (A –Specified)	15
A1 – MLIA and MSDI administration is conducted using efficient an accountable methods.....	15
A2 –MSDI Framework layers are developed, integrated, maintained, disseminated and preserved in an efficient and standardized manner.....	15
A3 – Statewide GIS coordination, outreach and education is targeted to reach prioritized sectors of the GIS community.....	15
Land Plan Priorities Proposed for Funding (B – Grant Categories)	16
B1 - MSDI Land Records, Addressing or Water Information Partner Support.....	16
B2 – Local and Regional GIS Capacity Building	16
Action Plan and Budget.....	17
Appendix A – Department’s FY16 MLIA/MSDI Anticipated Budget.....	19

Introduction and Overview

The Montana Land Information Act (MLIA) requires that an annual land information plan be prepared that describes Montana's **priority needs** in regard to collection, maintenance, and dissemination of land information (MCA 90-1-404(c)). Those priority needs are used in part to allocate funds from the state land information account. In order to define the priority needs, the Montana State Library (MSL) has solicited advice from the Montana Land Information Advisory Council (MLIAC), the Montana Spatial Data Infrastructure (MSDI) Theme Stewards, and other stakeholders. Priorities must be consistent with the intent of the MLIA which recognizes the importance of digital land information for all sectors of Montana society. It also recognizes the need to ensure that digital land information is:

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

The purpose of the annual Land Plan is to announce, describe, and fund priorities for the coming year.

Through publication of this plan MSL, in cooperation with the MLIAC and other stakeholders announces to the GIS community the proposed priorities for expenditure of MLIA funds for the next fiscal year. Priorities are generally driven by the factors described in the section [FY14/15 Accomplishments](#) and the section [Current Challenges](#). The priorities contained in the section [Land Plan Priorities Proposed for Funding \(A –Specified\)](#) describe tasks that are deemed critical to the day to day operation of Montana GIS. Ability to accomplish these priorities is constrained primarily by staffing levels and funding available to the state library; although this isn't meant to imply that other agencies don't have the same constraints.

The priorities contained in the section [Land Plan Priorities Proposed for Funding \(B –Grant Categories\)](#) are broader categories that strengthen the overall Montana GIS infrastructure. Local, Regional and Tribal jurisdictions are encouraged to apply for funding for projects in these categories through a grant process. MLIA also requires that the annual plan contain a proposed budget that will address the priority needs and accomplish the objectives of the plan. The total estimated budget is compiled from the budget line items in the section [Action Plan and Budget](#) and listed as a total at the end of that section. Finally MLIA also requires that a budget be submitted to carry out the duties associated and assigned under 90-1-404 (previously called the GIS coordination budget). While not specifically required as part of the annual land plan MSL respectfully submits a budget estimate as [Appendix A](#) of this plan.

By defining annual priorities, the plan also provides a roadmap that is intended to guide the efforts of MSL, MLIAC, MSDI Theme Stewards, the Montana Association of Geographic Information Professionals (MAGIP) and others interested in furthering the interests of GIS in Montana.

Funding and Granting Process

To accomplish the priority goals in section A, MSL, in conjunction the other MSDI Stewards will submit a work plan by March 1, 2015 for Council review. This plan will include the tasks assigned to MSL from the MSDI work plan ([A2.1, page 8](#)), along with other MSL priority tasks that promote spatial data discovery and coordination. Some MSDI tasks may be undertaken by a party other than MSL; however MSL will assume ultimate accountability. MSL will receive MLIA funding for the specified category A priorities contained within this plan.

Land Plan priorities in category B will be accomplished through MLIA grants. A standard MLIA grant application that solicits appropriate projects will be the funding mechanism for category B.

FY 14/15 Accomplishments

The timing of the annual land plan necessitates that we look more at the work accomplished in FY14 than in FY15, since FY15 work is commencing. 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(all BMSC and MSDI 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	366985.9	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 NSGIC annual convention was “Don’t fight the web – you will lose”. A 1946 tongue in cheek editorial by Jorge Luis Borges entitled “On Exactitude in Science” (http://en.wikipedia.org/wiki/On_Exactitude_in_Science) poked fun at cartographer’s inclinations to create larger scale maps to where they eventually reached a 1:1 scale “whose size was that of the Empire, and which coincided point for point with it. The following Generations, who were not so fond of

the Study of Cartography as their Forebears had been, saw that that vast map was Useless, and not without some Pitilessness was it, that they delivered it up to the Inclemencies of Sun and Winters. In the Deserts of the West, still today, there are Tattered Ruins of that Map, inhabited by Animals and Beggars; in all the Land there is no other Relic of the Disciplines of Geography". In 1946 the idea of those types of spatial accuracies may have seemed ludicrous however in the future, demand to collect and distribute more and more accurate spatial data via the internet may prove more viable and useful than Borges could ever have imagined.

Another way of looking at accomplishments is to examine progress on last year's land plan challenges. Accomplishments can be demonstrated in the following areas:

1. The transition of custodianship s 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.
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 USGS has a file on its web site with 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. The Topofinder name search function can now find features whose alternate 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 subbasin, and development of a web application that allows users to submit and track hydrography revisions online.
4. Recognizing the need to bring Next Generation data challenges related to addresses and boundaries to the table, MSL met several times with the Department of Administrations Public Safety Communications Bureau. The mission and makeup of the current 9-1-1 Advisory Council is under review by the Department of Administration and MSL has been advised they will be considered for membership of that Council in the future.
5. The Montana Climate Office has developed MSDI and 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.

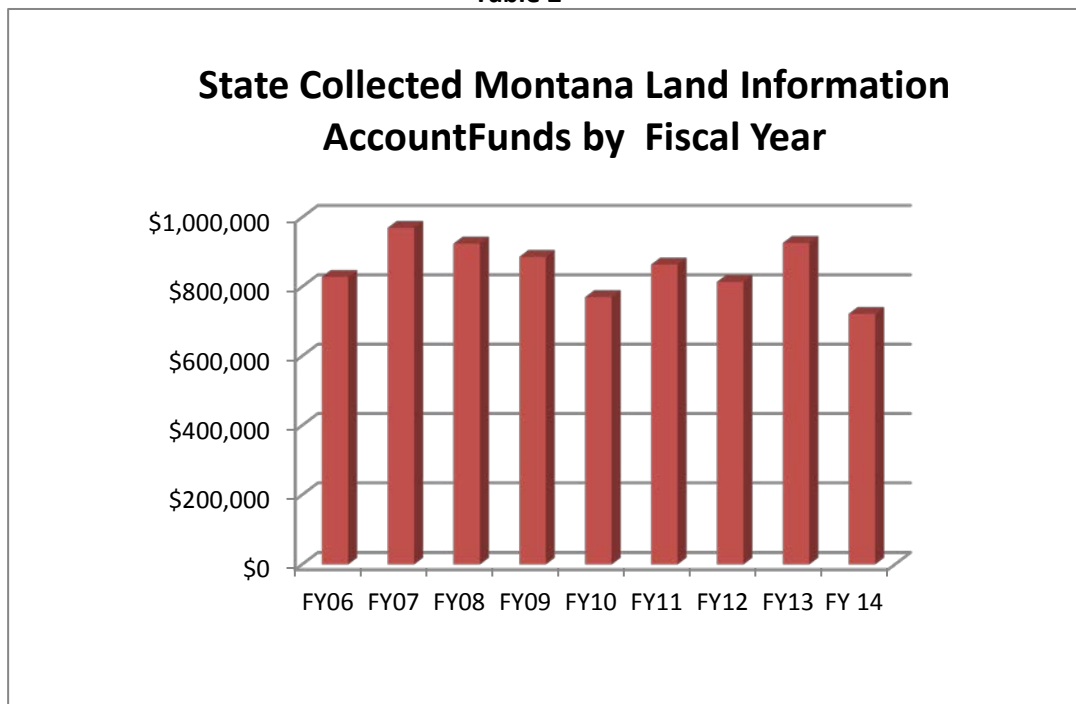
6. Although federal funding to support the MSDI continues to trend downward, the MTNHP received a \$250,000 grant to map wetlands and riparian areas in parts of the state with private surface ownership and BLM mineral ownership. Additionally, the MTNHP received a grant from the U.S. EPA to, in part, enhance existing wetland mapping through the addition of descriptors that describe potential wetland function. MTHHP also received support from the US Forest Service to continue improving the classification of whitebark pine in vegetation maps, including MSDI Land Cover. None of these funding agreements however, covers basic theme stewardship and maintenance, outreach, or coordination.
7. A new two year enterprise license agreement with Esri has been successfully negotiated 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 MAGIP.

Current Challenges

Status of the Montana Land Information Account

An August 2014 analysis of the Montana Land Information Account revealed that FY14 collections totaled approximately \$722,000, the lowest level in account history (see table 2). This was surprising since FY13 collections, at approximately \$926,000 were the second highest ever. While a March 2014 review of the account indicated that the overall balance was sufficient to support the FY 15 plan's budget of \$955,000 the FY15 balance will almost certainly not support a similar budget and that significant reductions need to be made. The funds volatility is exacerbated by its inability to adjust for inflationary pressures, so while the per page recordation fees remain static certain line items rise over time. For example the state's pay plan adopted in the 2013 legislative session called for 5% raises in November of 2014.

Table 2



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 it simply can't meet growing demand. Other funding sources must be found to bridge the gap. If those sources can't be found the end result is instability in the foundation of the programs that the MLIA has traditionally covered; State GIS coordination, MSDI development, and a grant program that has become increasingly popular. The FY16 budget as proposed in this plan is \$752,000, approximately \$200,000 less than the FY15 budget. 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 don't materialize. If those sources don't 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
- MTNHP'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; participate in state and regional meetings and other accepted stewardship functions may be eliminated. 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.

Other Challenges

1. The need for improvement to the accuracy of land record information did not end with the MSL Geographic Information Program's migration of CadNSDI to the Esri Parcel Fabric. Hundreds of townships are in need of accuracy enhancement. Each enhancement requires planning, technical expertise, and communication so users know when data has changes. From a technical perspective the projects require

- Better, faster and easier tools for surveyors to provide data they have already collected;
- Vertical integration of coincident data such as boundaries;
- Enlightened change management that provides users notifications when changes to the PLSS are planned and when they actually happen.

2. The Draft 2015 State Water Plan states that if the people of Montana carry out the recommendations offered in the Plan, then Montana in the next 20 years will:

- Be better prepared to manage water in real-time to adjust to seasonal changes in supply and demand as well as prepare for longer term climatic changes
- Be better prepared to endure droughts in watersheds across the state;
- Have a public that better understands the dynamics of our water supply and the water rights system they rely upon every day.

These goal and others will require accurate inventories of consumptive and non-consumptive uses as well as estimates of the amount of surface and ground water needed to satisfy new future demands. As demands are put on finite water resources the ability to analyze factors related to those resources becomes critical. The National Hydrography Dataset is a complex model with multiple feature classes, multiple feature types and feature codes, and a plethora of attributes. To avoid being bogged down by revisions that provide minimal benefit, hydrography stewardship efforts need to be focused on those parts of the model and features that are most important to Montana. One challenge over the coming year is to coordinate with state and other agencies to prioritize features of the hydrography dataset and, thus, determine where stewardship effort and resources are best spent.

Climate data is vital to an encompassing water information system but continues to have to rely on words like “resiliency” to be politically viable. As the Montana Climate Office completes publishing of core datasets and ensures they remain current and well-maintained, development of a “living” Montana Climate Atlas will integrate the published datasets with the State Library’s Water Information System. The Montana Climate Office will turn its attention to evaluation, deriving variants of published datasets, and developing new climate products. The Montana Climate Office continues to pursue funding to support this work and is working closely with the private sector to integrate climate framework products into decision making.

3. This summer Maine became the first state to roll out a state-wide next generation (next-gen) 9-1-1 implementation. At a recent Association of Public-Safety Communications Officials (APCO) conference, Sean Petty, director of technology practice at Mission Critical Partners and former public –safety answering point (PSAP) director stated, “As we shift focus to the future, GIS will become the hero in the next-generation 911 world and the basis for a lot of what happens. It’s really shifting the role from being a supporting role to being perhaps the heart and soul of call routing and many of the other functions. We’re shifting into this hugely geospatial world.”

As noted in the accomplishments section MSL is under consideration for appointment to the State 9-1-1 Advisory Committee. While not 9-1-1 experts by any means, MSL is exposed to a lot of next-gen information because of participation on the NSGIC Address Committee and National Emergency Numbering Association (NENA) Site/Structure Address Point Workgroup. In order to assist local governments prepare for next-gen 9-1-1 this de-facto role is going to need to be expanded. Next gen 9-1-1 is going to mandate the MLIA's basic premises; that data is collected consistently in accordance with standards and maintained accurately - in accordance with standards.

4. The National 3D Elevation Program (3DEP) led by the USGS is being developed to respond to growing needs for high-quality topographic data. The program estimates it will distribute over 100 million dollars to state and local partners at a 50% match rate to acquire quality level 2 (Q2) LIDAR data. The problem Montana faces is that the estimated cost for statewide Q2 at today's collection rates for Q2 data is 48 million dollars at a time when the state is struggling just to pay maintenance of cadastral data. A pre-proposal submitted by the Montana Bureau of Mines and Geology, for Q2 LIDAR over Roosevelt, Daniels and Sheridan Counties is estimated at 1.8 million dollars meaning the state's share would be approximately \$900,000; more than the MLIA account took in in FY14. Clearly some compromise needs to be worked out with USGS so that Montana can obtain higher quality topographic data at an affordable cost.
5. The federal Geographic Names Information System (GNIS) program is severely understaffed by the USGS. The Montana geographic names framework is out of synchronization with the GNIS because USGS has been unable integrate the hundreds of edits and additions MSL has submitted since 2007. Each time MSL obtains a new copy of the GNIS, we have to re-apply our edits to it. The USGS contracted with MSL in 2013 to examine and correct all of the natural non-hydrographic features in the GNIS. The USGS has not incorporated these corrections into the GNIS yet. If the corrections are not made to the GNIS this year, MSL may need to add these to the list of edits we have to make every time we refresh the framework from the latest version of the GNIS
6. There is a critical need for consistent annual funding to support the Landcover and Wetlands themes. The Landcover theme cannot be treated as a stationary product that has limited need for updates. Aggressively continuing work on the Wetlands theme cannot be treated as optional. These themes provide essential information to public and private land managers and the need for a long-term, sustainable funding strategy to support them is imperative. Given the anticipated reduction in MSDI funds the current data priorities of MSL presented in this plan do not address the needs of these vital data sets. Just as the statutory responsibility of MSL for the Water Information System provided leverage to secure funding for the Water Information Manager position; MSL's statutory responsibility for the Natural Resource Information System may provide an opportunity to obtain funding sources through future legislative action for the long-term needs of the Landcover and Wetlands themes.
7. Nationally, the NHD is the joint responsibility of the USGS and other Federal agencies. In Montana the NRCS continues to have responsibility for the Hydrologic Units. Updates and changes to the hydrologic units, such as the boundary harmonization with Canada are on-going and the process and for integrating changes into the Watershed Boundary Dataset (WBD) within the NHD need to be examined to ensure updates are in synchronized. The continued impacts of sequestration to Federal agency budgets are likely to impose additional limits on the staff and resources needed to

ensure that users who rely on the NHD will also have access to the most current hydrologic unit data

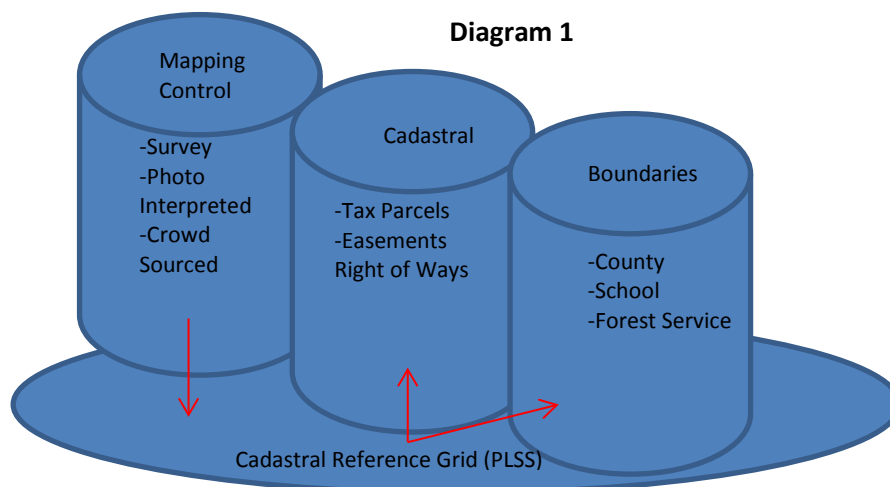
8. Generally federal partner funding for MSDI stewardship has been drying up. While they maintain that they want to partner with the state, federal partners attempt to do it without appropriate corresponding funding and/or staffing levels is tightening the noose around state efforts. Examples of such reductions include:
 - Current elimination of NHD stewardship funding that had previously assisted MSL to maintain hydrography using the NHD tools and data model while continuing to look at solutions that would assist state agencies in adopting a more useful local resolution model.
 - The unwillingness of the BLM to de-obligate and re-obligate over \$50,000 in an assistance agreement that ran through May 2015 when the move of GIS operations from DOA to MSL required such re-obligation.
 - The near-elimination of the National Wetlands Inventory program has resulted in the loss of final QA/QC formerly provided by a regional coordinator resulting a greater lag time between MTNHP data submittal and availability via the NWI website.

Additional FFY 15 sequesters cuts to the NRCS budget have all but eliminated the ability of MSL to participate in partnership projects involving the Soils framework. While the challenges may be daunting Montana has traditionally maintained a reputation for GIS excellence even in the face of adversity using the duct tape and bailing wire approach to problem solving. It is good we have that ability as it will be needed to meet FY16 priorities and challenges.

FY16 Data Priorities

Land Records

The recent migration of the PLSS to the Esri Parcel Fabric has driven home the point that the Federal Geographic Data Committee, when first declaring Cadastral, Geodetic Control and Governmental Units National Spatial Data Infrastructure (NSDI) themes, didn't understand the full scope of land records data. In the first place geodetic control is not a necessity for a GIS however mapping control is. Mapping control can be acquired in a variety of ways other than geodesy. Governmental Units is cumbersome name for administrative boundaries and potentially excludes other important boundaries. And cadastral data goes far beyond their original interpretation of a cadastral reference grid and publically owned parcels. In Montana the model looks far more like Diagram 1 below.



Improvement of the underlying accuracy of cadastral reference grid, the PLSS in Montana, has been recognized as very necessary to improve the accuracy of numerous data sets that use it as a foundation. With MSL now in custodianship of the CadNSDI (PLSS) database accuracy improvements will have a much quicker turn around cycle than under federal management. Therefore this plan recommends that PLSS accuracy improvement projects are a priority for FY16. It also recommends better communication with the surveying community so existing data can be easily submitted with diminished burden to local surveyors.

The Parcel Fabric also supports associated boundary related feature classes that need to maintain vertical integration with the PLSS. There is a wide diversity of boundary data that is at least partially coincident with the PLSS and tax Parcels. Montana was one of two states invited to participate with the U.S. Census Bureau in the initial Boundary Quality Assessment and Reconciliation Project (BQARP). Montana’s state, county, school district and municipal boundaries coincide with the PLSS and other types of features as documented in table 3.

Table 3

Feature	Percentage
PLSS	71.92%
Physical Feature	21.81%
Survey Control	4.12%
Parcel	1.83%
Other feature	0.33%

Many state and local boundary data sets are out of vertical alignment with the PLSS. Improving the spatial accuracy of the PLSS and getting boundary data vertically aligned with the PLSS improves the user experience and credibility of data predominantly displayed by state and local governments. In Montana boundaries, especially emergency service response zones such as fire and police, are coincident with other boundaries like municipal boundaries and all need to be vertically integrated (please refer to related next-generation 9-1-1 discussions in this document)

Water

The FY15 draft State Water Plan compiled by the Montana Department of Natural Recourses contains the following recommendation:

Support Improvements to the Montana Water Information System
The Montana State Library’s Water Information System (WIS) is the starting point for finding water resource information in Montana. The WIS makes high quality data on surface water, groundwater, water quality, riparian areas, water rights, climate data and more available to the public from one common starting place. Improving the WIS through the development of new data sets, interactive applications, and maps will support informed decision-making and

integrated water resource management.

Short Term Recommendations (0 – 2 years)

- *Provide the State Library with additional staff resources dedicated to the development of new water resource related data sets, interactive applications, and maps.*
- *DNRC will work with the State Library to develop a systematic workflow for revising the Montana Spatial Data Infrastructure (MSDI) Hydrography Framework based on the US Geological Survey National Hydrography Dataset (NHD).*
- *Develop a process for transmitting water data generated by local, state and federal agencies, and watershed groups to the State Library for inclusion in the WIS in a consistent and timely fashion.*
- *Continue working with the U.S. Geological Survey on the development of StreamStats—an interactive Web-based map application for providing stream flow statistics on streams and rivers with limited hydrologic information.*

Intermediate Term Recommendation (2 – 6 years)

- *Improve the spatial representation of points of diversion (PODs) and places of use (POUs) associated with water rights, and make this improved representation available through the WIS.*

Since the Montana State Water Plan is a significant policy document containing many other water related recommendations that rely on timely and accurate water information we believe the FY16 Land Information Plan should prioritize tasks that help meet the Water Plan’s recommendations.

Addressing

The APCO conference referred to earlier provided several notable quotes that should drive the GIS community to action. A few of them are listed below:

- *I can’t say it enough,” Petty said. “It is a shifting mindset from today, where we are with GIS being a supporting role, to the future, where the changes made by the GIS professionals are going to have a profound impact on the operation of our 911 centers and call routing.*
- *The data-reconciliation process also will likely take longer than expected, which is another reason to start early, says Chad Brothers, client services manager with TeleCommunication Systems (TCS). Building a well-integrated dataset with surrounding jurisdictions is an important part of that process.*
- *“The higher the quality of your data, the better data that your call-takers are going to get when the time comes for a 911 call to be delivered,” Brothers said. “Make sure you plan it early into your integration. Don’t wait until the tail end, when you actually think you’re going to need it, because then it will take you much longer to get it ready.”*

For these reasons this plan recommends prioritization of efforts that will lead to a data ready Montana poised for efficient implementation, locally, regionally or potentially statewide depending on costs associated with emergency service broadband. That means standardized addressing efforts as well as standardized jurisdictional data mentioned in the land records portion of this document.

Local and Regional Capacity Building

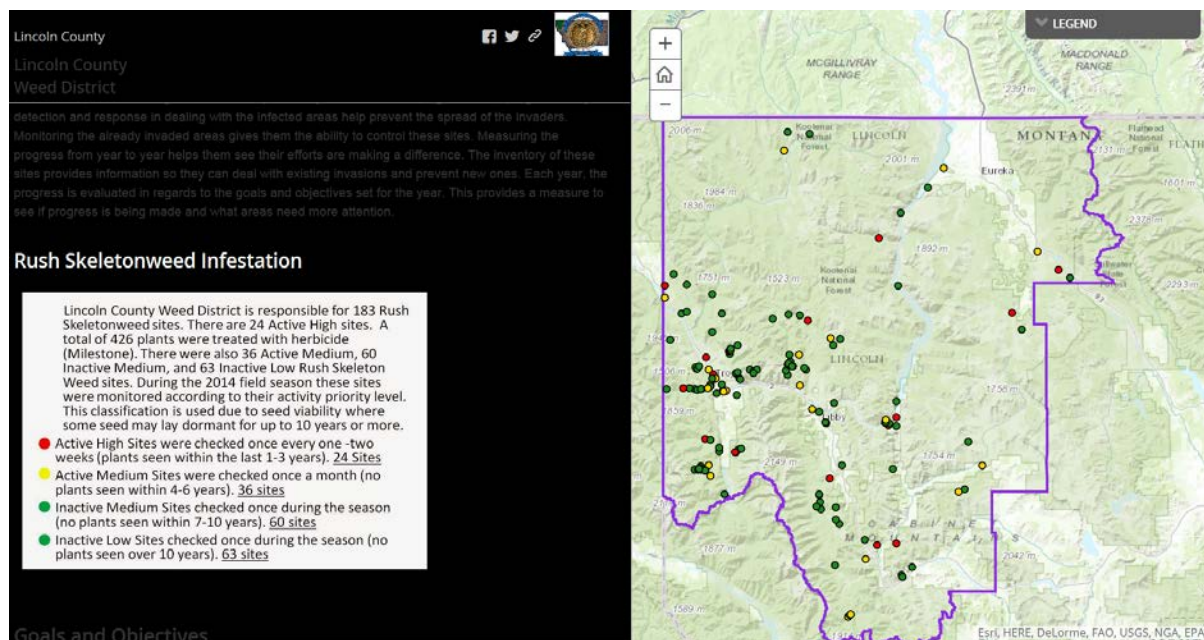
If local data sources have the resources they can produce standardized data that feeds statewide databases. The same data meets local needs and provides both citizens and policy makers with the information they need to make informed decisions. In FY15, the fifteen projects in table 4 were funded through the MLIA grant process, with all but the first four in the category of local, regional and tribal GIS support.

Table 4

MLIA FY15 Applicant	MLIA Share	Leverage Amount
Carbon County PLSS	\$33,000	\$31,050
Park County PLSS	\$20,000	\$10,000
Twin Bridges PLSS	\$20,850	\$4,979
McCone County Road Asset Inventory	\$12,966	\$3,442
Shelby Water Utility	\$36,050	\$40,379
Sanders County Web GIS	\$15,152	\$2,440
Mineral County Cemetery Mapping	\$14,723	\$4,801
Livingston - GIS Development	\$18,900	\$5,176
UM Fire Atlas	\$18,973	\$6,776
Powell County Land Use Inventory	\$15,870	\$28,238
Ft. Belknap FTBGIS Training Program	\$23,365	\$64,703
Teton County Web GIS	\$14,852	\$1,500
Blaine County GIS Program	\$19,552	\$19,980
Broadus Metadata	\$20,000	\$30,500
Lincoln County Web GIS	\$18,740	\$28,470
Land Plan Estimate of Available Funds (\$300,000)	\$302,993	\$282,434

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

Below is an example of how Lincoln County is already putting their FY15 funds to use, providing citizen access to local weed infestations and mitigation efforts.



Local GIS practitioners need experience and training to collect and maintain the standardized data that the MLIA supports. Most GIS experts would support that experience is gained through hands-on, day-to-day interaction with the data. MLIA grant funds help build that capacity at the local level. Even though by necessity the FY16 budget must be tightened this plan supports a portion of the available grant funds be directed at capacity building projects that help ready local data providers to produce accurate and reliable data and metadata.

Land Plan Priorities Proposed for Funding (A -Specified)

In order to fulfill the purpose of the act and support current MSDI efforts, MLIAC has identified the following specific Land Plan priorities (goals) for state FY 2016.

A1 – MLIA and MSDI administration is conducted using efficient and accountable methods.

A1.1 - Carry out the duties of the department as described in [MCA 90-1-404](#) (a) through (m)

A1.2 Chair and support the Montana Land Information Advisory Council (MLIAC)

A2 –MSDI Framework layers are developed, integrated, maintained, disseminated and preserved in an efficient and standardized manner.

A2.1 - MSL Geographic Information Program staff under MLIA funding will focus on the data priorities of this plan; enhancement of land records, addressing and water related data.

A2.1 - MSDI Theme Stewards and Leads will conduct new data collection, ongoing maintenance data discovery through the Montana GIS Portal, data delivery via download and web services, archival assessment and other projects as per the MSDI work plan. MSL Geographic Information Program staff under MLIA funding will focus on the priorities of this plan; enhancement of land records, addressing and water related data.

A2.2 - MSDI Theme Stewards shall support data partners through on-site visits, on-line training and other opportunities that promote technology transfer.

A2.3 – Working through MSL, continue to expand a Montana spatial data archive that includes annual MSDI entries.

A2.4 - MSDI Theme Stewards will develop an annual MSDI work plan, to be incorporated into a MSL work plan that prioritizes actions, supports data partners and identifies funding needs.

A3 – Statewide GIS coordination, outreach and education is targeted to reach prioritized sectors of the GIS community.

A3.1 - Support for creation of metadata that can be ingested by the MSL GIS data list.

A3.2 – Support local data providers adopt appropriate data standards and data collection methodologies

A3.2 – Provide technical consulting to users of GIS software and MSDI services.

A3.3 - Preserve and improve relationships with MSDI data providers through support and local visits that foster knowledge transfer.

A3.4 - 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 and other meetings of subject matter experts.

A3.5 –Advocate for the use of MSDI data as appropriate.

A3.6 – When requested provide annual consultation and advice to MLIA grant applicants as they strive to best meet the MLIA grant criteria.

Land Plan Priorities Proposed for Funding (B – Grant Categories)

In order to fulfill the purpose of the act MSL has identified and prioritized the following grant categories for FY16. Details of B1 and B2 grant requirements shall be developed by MSL in conjunction with the MLIAC Grant Review Subcommittee.

B1 - MSDI Land Records, Addressing or Water Information Partner Support

Data partners should receive funding support and outreach that enables and enhances partnership opportunities and projects in the areas of land records, addressing and water information

B2 – Local and Regional GIS Capacity Building

Investments that leverage local, regional, state and tribal matching funds and in-kind time and talent that builds toward a strong Montana GIS federated enterprise:

B2.1 - Regional GIS consortiums that leverage a multi-jurisdictional approach to problem solving and GIS analysis can demonstrate the value of GIS to policy makers.

B2.2 - Localized GIS solutions that demonstrate the value of GIS in improving the quality of life for Montana citizens and build grass roots support for location based services.

Action Plan and Budget

Both specified tasks and grant categories may be funded by a combination of MLIA and other sources. The primary source of funding for the specified tasks during the time frame of this land plan continues to be the account created by the MLIA. Administrative rule governing that account states:

(1) "Available grant funds" means the balance of the Montana land information account on March 31 of each fiscal year, plus an estimate of not-yet-deposited state funds held by counties as of that date, less the department's budget associated with duties and responsibilities defined in 90-1-404, MCA, for the fiscal year and any funds committed to grants.

MSL, in consultation with the Council, will determine the available grant funds according to administrative rule. Rolled over excess funds from past years occasionally result in a fund balance that will exceed the estimated land plan budget. The estimated budget for FY16 grants is approximately \$100,000 below the FY15 level. Funds in under-budget line items may be moved to other tasks contained in this plan by MSL in consultation with the Council.

A-Specified: \$552,000

A1 - MLIA and MSDI administration is conducted using efficient and accountable methods

- a. Tasks described in [A1 \(page 8\)](#) including the duties as described in MCA 90-1-404 (a) through (m)
- b. Chair and provide administrative support and funding for the Montana Land Information Advisory Council
- c. Responsible Party is: MSL
- d. Budget Line: \$100,000
- e. Funding Source: MLIA

A2 - MSDI Framework layers are developed, integrated, maintained, disseminated and preserved in an efficient and standardized manner.

- a. Conduct work as described in [A2 \(pages 8 and 9\)](#)
- b. Responsible party is: MSL
- c. Budget Line: \$400,000
- d. Funding source: MLIA

A3 – MSDI coordination, outreach and education is targeted to reach prioritized sectors of the GIS community

- a. Conduct GIS coordination, marketing, outreach and education as described in [A3 \(page 8 and 9\)](#)
- b. Responsible party is: MSL Theme Stewards and Leads
- c. Budget Line: \$52,000
- d. Funding source: MLIA

B- Grant Categories: \$200,000 (budget line items may vary based on grant applications submitted)

B1 - MSDI Data Partner Support

- a. Support Land Plan Priority data – MSDI Support Category
- b. Responsible party is: Grant Recipients
- c. Budget Line: \$140,000
- d. Anticipated funding source: MLIA

B2 – Local/Regional Capacity Building

- a. Support Land Plan Grants – Local and Regional Infrastructure Category
- b. Responsible party is: Grant Recipients
- c. Budget Line: \$60,000
- d. Anticipated funding source: MLIA

The total MLIA related budget to accomplish the tasks contained within this plan: \$752,000

Appendix A – Department’s FY16 MLIA/MSDI Anticipated Budget

MSL’s Geographic Information Program is comprised of ten staff, six of which were originally employed by the Department of Administration’s State Information Technology Service Division and the Montana State Library’s Natural Resource Information System (NRIS) and the Water Information System (WIS). Three staff members are wholly or partially funded by NRIS funds and the Water Information System Manager is funded (one time only at this point) through another account. General funds pay a portion of the fixed costs associated with hosting MSDI services in the GIS enterprise architecture at SITSD. The MTNHP, part of the NRIS program, is operated under a contract with the University of Montana. The MSDI Wetlands and Land Cover themes are stewarded by the MTNHP, which employs 5 FTEs working on wetlands theme production and maintenance, and a 0.8 FTE working on Land Cover. Funding for portions of two other staff positions that provide Land Cover and Wetlands coordination, outreach and theme maintenance come from MLIA.

Therefore budgets and funding sources are mixed and complicated. All staff members are tasked with GIS & MSDI and coordination work in their job profiles although the percentages dedicated to those tasks vary. While the FY16 Budget will be set by the 2015 Legislature we anticipate close to \$1,000,000 will be required to fund the entire program, including the MTNHP portion of Land Cover and Wetlands. Out of that amount, this plan targets \$522,000 of MLIA funds toward the program, a reduction of approximately \$80,000 from what was expended in FY14 and approximately \$100,000 in what is anticipated to be expended in FY15. Those shortfalls must be made up with a combination of budget savings and additional revenue sources.