

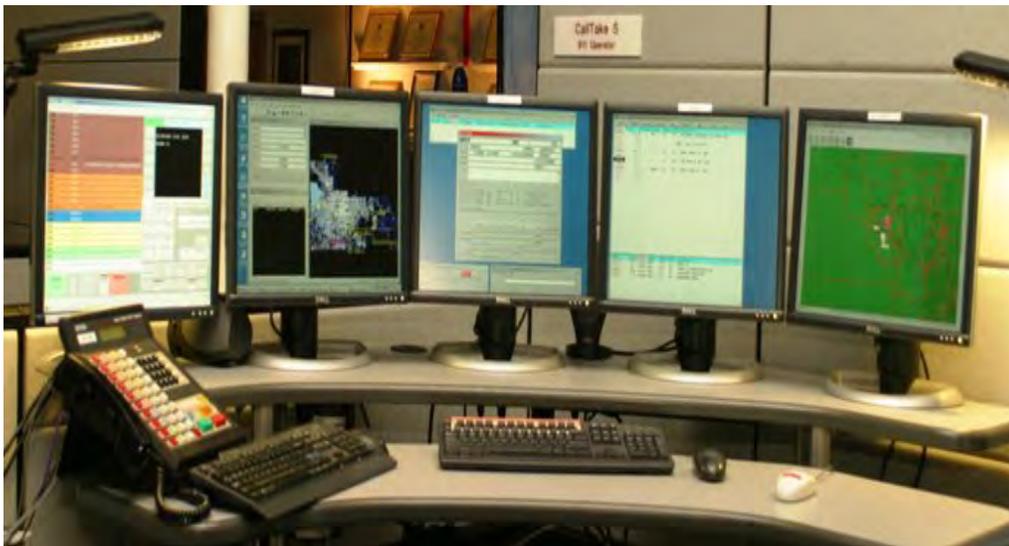
# Montana Land Information Plan

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***Effective:***

***January 1, 2016  
to June 30, 2017***

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*Photo courtesy of the National Public Safety Telecommunications Council*

*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

## ***Introduction and Overview***

The Montana Land Information Act (MLIA) requires that the Montana Land Information Advisory Council (MLIAC), under the legislative authority of the Montana State Library (MSL), prepare an annual Land information Plan that describes Montana's priority needs to collect, maintain, and disseminate 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, MSL has solicited advice from the 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 priorities documented in this plan describe tasks that MLIAC, as representatives of the larger Montana GIS community, deem critical to the work of Montana GIS users and are high priorities for data integration, maintenance and require statewide coordination.

These priorities represent key areas of focus during the plan period and are in addition to the day to day work that is conducted by MSL staff and local state and federal partners to develop and use the 15 Framework themes formally recognized by MLIAC and collectively referred to as the Montana Spatial Data Infrastructure (MSDI). Readers are encouraged to review online summary information about the MSDI (<http://geoinfo.msl.mt.gov/Home/msdi>) to learn more about theme data, its construction and maintenance, theme stakeholders, funding and support, cross-MSDI theme relationships and current related projects. A separate [Montana Spatial Data Infrastructure Work Plan](#) documents individual project priorities for each theme.

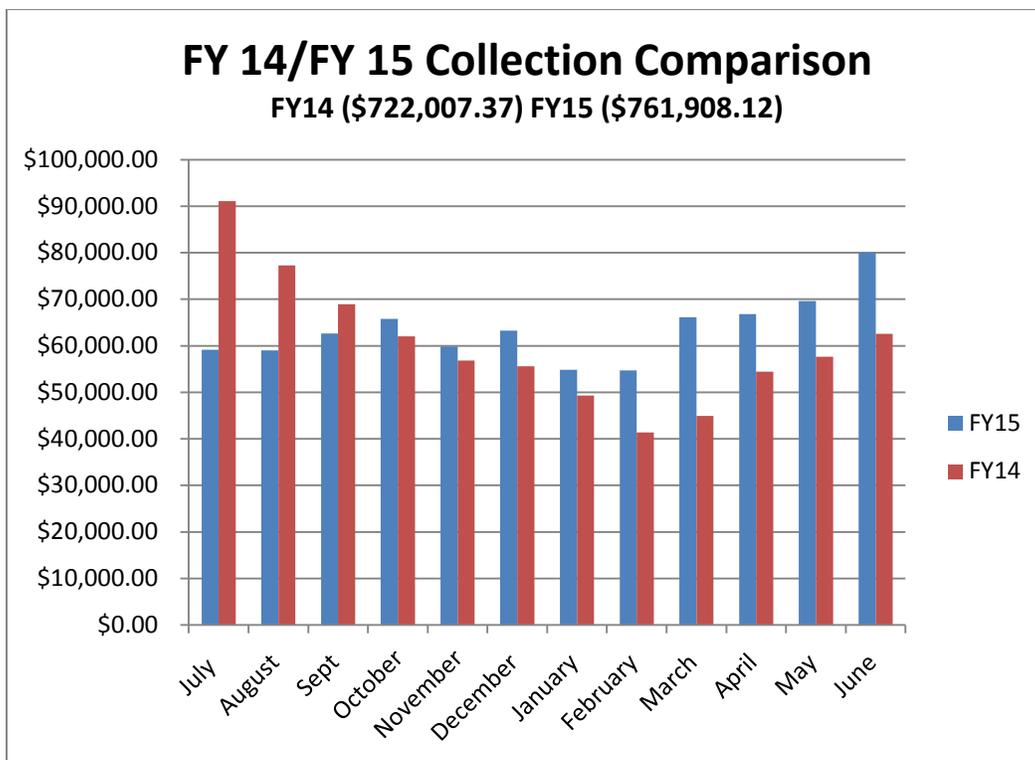
The Land Plan also reflects Montana's vision for a Spatial Data Infrastructure that encourages and integrates data developed at the local level by those who are considered the authoritative data sources into a statewide resource that meets the needs of all Montana stakeholders. Grant priorities documented in the plan support this vision.

Finally, as is required by statute, the Land Plan contains a budget designed to accomplish the goals of the plan. By defining annual priorities, the plan provides a roadmap that directs the collective efforts of MSL, MLIAC, and MSDI Theme Stewards. This plan also provides guidance for our partners including the Montana Association of Geographic Information Professionals (MAGIP), GIS practitioners and others interested in contributing to the development and maintenance of the MSDI and furthering the interests of GIS in Montana.

## ***Funding, Timeline and Grant Process***

MSL administers funds collected through the state land information account. These funds are generated through collection of recordation fees as described in MCA 7-4-2637 ((3) iii). This account represents a significant funding source to accomplish the priorities of the Land Plan. As is documented in the MSDI summary information referenced above and the Land Plan budget, MSL and other GIS partners also rely heavily on additional sources of funding to support GIS in Montana.

Since established in 2005, the state land information account has proven to be a source of funding subject to a variety of external factors including fluctuations in real estate markets and the oil and gas industry. Currently collections appear to be increasing from an all-time low in FY 2014 however collections have never reached the point where they can support MSDI needs and a robust grant program. For this reason the budget for this year's Land Plan shows only a modest increase over the FY 2015 plan. The budget remains well below previous years' budgets and overall funding does not substantially support overall needs for MSDI and grant funding.



MSL makes use of MLIA funding for MSDI and GIS Coordination priorities specified in this plan. To document specific work objectives to address the priority goals for data development and GIS Coordination, MSL, in conjunction with the other MSDI Stewards will submit a work plan by May 1, 2016 for Council review. Some MSDI tasks may be undertaken by parties other than MSL; however MSL will assume ultimate accountability for meeting the plan's objectives. These objectives documented in the work plan will be met over the course of state fiscal year 2017 (July 1, 2016 through June 30, 2017).

Publication of the Land Plan in January informs the MLIA grant application process. MLIAC seeks grant applications from local, regional and tribal jurisdictions that will address the Land Plan grant priorities through one-year MLIA grants. In accordance with Administrative Rule 10.102.9105 the grant application process will be announced by January 15, 2016. Announcements will be made through the Montana Association of GIS Professionals (MAGIP), the Montana Association of Counties (MACo), the MLIAC distribution list and other communication channels. Grant applications must be received by MSL by February 15, 2016. Review and ranking of grant applications is conducted by a subcommittee of MLIAC. Final grant awards are approved by the MSL Commission in June, 2016. Grants are administered by MSL and are awarded for the period beginning July 1, 2016. Grant work should be completed by June 30, 2017.

### ***FY 15/16 Land Plan Accomplishments***

The timing of the annual land plan necessitates that we look more at the work accomplished in FY 2015 than in FY 2016, since FY 2016 work is in progress. As noted above, account revenues declined significantly during this period. As a result, the budget for the FY 15/16 Land Plan was reduced to \$752,000 from the \$955,540 budget in the FY 14/15 plan. The challenges imposed by this budget have been partially met through the following actions:

- MSL obtained additional funding in the amount of \$25,000 from the Bureau of Land Management (BLM) to work on Public Land Survey System (PLSS) adjustments in approximately 200 townships in Northeast Montana.
- MSL successfully applied for a \$25,000 assistance agreement with the United States Geological Survey (USGS) for National Hydrography Dataset (NHD) stewardship.
- MSL received approximately \$22,000 from the Department of Natural Resources and Conservation (DNRC) to begin implementing recommendations made in the 2015 State Water Plan. This funding will support hydrography dataset updates and development of the Water Information System (WIS).
- MSL negotiated a contract with the Department of Administration (DOA), for approximately \$17,000 to assist DOA to produce maps that would prioritize build out areas for First Net, the federally proposed public safety communication network. Build out areas are those areas that will require deployment of the First Net network.
- MSL eliminated MLIA funding allocated to the Montana Natural Heritage Program (MTNHP) for Land Cover development and stewardship. In previous years they had received \$50,000 for this purpose. No funding for land cover stewardship was included in the current MTNHP contract between MSL and the University of Montana, the entity that operations the MTNHP.
- MLIA grant funding was reduced from \$302,993 in FY 2015 to \$200,000 in FY2016. MLIAC received grant applications in the amount of \$157,534 and all grants were awarded by MSL and the Council.

As a whole these actions allow MSL to carry out data development and GIS Coordination work within the FY 2016 \$752,000 budget. It should be noted that the proposed actions to make up MLIA funding

shortfalls through grants and contracts is not a sustainable budget strategy for the long term. Though funding to work on specific tasks like FirstNet ensures that MSL is able to retain key staff, funding for work not otherwise prioritized in the Land Plan pulls resources way from plan priorities. The action to eliminate funding for Land Cover means GIS users will not see a revision to Land Cover data in FY 2016. MTNHP has had to eliminate a number of photo interpreters and funding for wetland digitization has declined. Reduced grant funding will likewise result in reduced capacity building for local and tribal GIS projects. The actions taken were sufficient to postpone a reduction in the MSL GIS staff, but for the MSDI framework and MLIA grant program to be sustained, it is clear that the pressing need to identify and secure sustainable alternative funding sources remains.

To that end MSL was successful in securing permanent funding for the MSL Water Information System Manager during the 2015 Montana Legislative session. This position was created with one-time-only funds by the 2013 Legislature. Securing state general fund dollars for this position represents a significant accomplishment achieved, thanks in large part to stakeholders that recognize the value of standardized water information made commonly available through the WIS administered by MSL.

Accomplishments tied to the FY 2015 Land Plan include:

1. Land Records – Several PLSS accuracy adjustments were completed including projects in Yellowstone, Teton, Gallatin, Stillwater, Carbon and Park Counties and on the Ft. Belknap and Crow reservations. A large project in portions of Daniels, Sheridan, Roosevelt, Richland and Wibaux counties is underway. Working with North Dakota, the BLM and the U.S. Census Bureau the Montana/Canada and Montana/North Dakota boundaries have been adjusted and will be included in the adjustment of the northeastern townships. An interactive map application at [http://mslapps.mt.gov/Geographic\\_Information/Applications/cadnsdi/](http://mslapps.mt.gov/Geographic_Information/Applications/cadnsdi/) was published to inform users of current and pending adjustment projects. Four updated vintages (7/2014/, 1/2015/, 3/2015 and 7/2015) of CadNSDI Montana were published. Administrative boundaries from the “Managed Areas” data originally compiled by the MTNHP were adjusted to align with the new CadNSDI. Tax parcels impacted by adjustments have been updated.
2. Water Information – Staff worked on multiple projects to improve the quality of the data in the Montana Hydrography Dataset, including coordinating editing efforts with Glacier National Park and completing mass stream, river, and waterbody revisions for a subbasin of the Yellowstone River near Billings. Four MSL GIS staff are now trained to edit the hydrography dataset increasing MSL’s capacity to manage user-submitted hydrography revisions, while other staff focuses on developing work flow for systematic, basin-wide updates. The MSDI hydrography steward worked closely with the Montana Hydrography Working Group to identify the hydrography features of greatest importance to partner agencies and, thereby, focus FY 2016 editing efforts. Work is also underway through a grant from the USGS to develop bulk data loading procedures that will allow for more efficient integration of data from existing sources.
3. Addresses and Next Generation 9-1-1 (NG9-1-1) – MSL worked closely with Representative Tom Steenberg of House District 95 in the 2015 legislative session to pass House Joint Resolution 7 to study Next Generation 9-1-1 (NG 9-1-1). The Energy and Telecommunications interim committee is conducting that study and MSL presented to that committee on the GIS

component of NG 9-1-1. State Librarian and MLIAC Council Chair, Jennie Stapp, has been appointed to the State 9-1-1 Advisory Council. MSL and MAGIP partnered to conduct a NG 9-1-1 panel discussion in Miles City that included the North Dakota NG 9-1-1 administrator, Century Link, and was attended by over 40 people from across the state. MSL has been present at several local government sponsored consortium building efforts designed to move NG 9-1-1 forward. Staff is attempting to understand the National Emergency Number Association (NENA) data standards in order to assist local governments as they assess, improve, and maintain street centerlines, address points and jurisdictional boundaries that will be required for NG 9-1-1.

4. Several FY 2015 MLIA grants to rural local governments for ArcGIS Online training and development of web based GIS should be recognized. Blaine, Sanders, Lincoln and Teton counties have all produced AGOL maps that provide local citizens access to information previously unavailable. Examples of these products are available at:
  - Blaine County <https://blainecounty-mt.maps.arcgis.com/home/index.html>
  - Sanders <http://sanders.maps.arcgis.com/home/index.html>
  - Lincoln <http://lclplanning.maps.arcgis.com/home/index.html>
  - Teton County <https://tcmt.maps.arcgis.com/home/index.html>These types of efforts by rural counties need to be recognized as they demonstrate successful efforts to increase local community capacity to develop and support GIS which has been a long term goal for GIS expansion in Montana.
5. Park County, without the help of MLIA funding, developed an award winning county atlas: <http://parkcounty.maps.arcgis.com/apps/MapJournal/?appid=b196d9c262b64eb0855ea677bbd6aa96> that uses an AGOL story map template along with several other interactive maps available online at <http://parkcounty.maps.arcgis.com/home/index.html>.

## ***FY 2016/2017 Land Plan Priorities***

Statute 90-1-404 requires MSL to administer the MLIA. This work is funded in part through the state land information account as well as additional funding sources including state general fund, (see budget) grants, and contracts.

***MSL takes pride in carrying out this work in a manner that is efficient and accountable. MSL will:***

- Carry out the duties of the department as described in [MCA 90-1-404](#) (a) through (m);
- Administer the MLIA grant program; and
- Support MLIAC.

***To ensure that MSDI framework layers are developed, integrated, maintained, disseminated, and preserved in an efficient and standardized manner, MSL will:***

- Conduct new data collection, ongoing maintenance data discovery through the Montana Data List, data delivery via download and web services, archival assessment and other projects as per the MSDI work plan;

- Engage stakeholder work groups to seek input on the priorities and best practices for data development;
- Support data partners through on-site visits, on-line training and other opportunities that promote data and technology transfer;
- Continue to expand a Montana spatial data archive that includes annual MSDI entries; and
- Develop an annual MSDI work plan, to be incorporated into the MSL work plan that prioritizes actions, supports data partners and identifies funding needs.

***Additionally MSL is responsible for GIS coordination through outreach and education that is targeted to reach prioritized sectors of the GIS community. Specifically MSL will:***

- Support the creation of metadata that can be incorporated into the MSL GIS Data List;
- Support local data providers as they adopt appropriate data standards and data collection methodologies;
- Provide technical consulting to users of GIS software and MSDI services;
- Preserve and improve relationships with MSDI data providers through support and local visits that foster knowledge transfer;
- 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;
- Advocate for the use of MSDI data;
- Provide consultation and advice to MLIA grant applicants as they strive to best meet the MLIA grant criteria.

***In addition to these day to day administrative and coordination functions, the Land Plan identifies the following priorities for data development, integration, and coordination. Local and tribal entities are encouraged to apply for grants that build capacity at the local level as described in the following categories.***

### ***1. Land Records***

The need to improve to the accuracy of land record information remains on the critical path of more accurate GIS data overall. Hundreds of townships are still in need of accuracy enhancement. Each enhancement requires planning, technical expertise, and communication so users know when data has changed. From a technical perspective the projects require:

1. Improved tools for surveyors to provide data they have already collected;
2. Vertical integration of coincident data such as boundaries;
3. Timely and efficient change management that provides users notifications when changes to the PLSS are planned and when they actually happen.

### ***1.a. Next Generation 9-1-1 Data Standardization***

Current 9-1-1 systems are reaching end of life and the use of mobile devices as replacements for traditional land lines is ballooning. Support for the creation of a statewide Next Generation 9-1-1 (NG 9-1-1) system that utilizes standardized data models MLIA's most basic vision; that data is collected consistently in accordance with standards and maintained accurately, in accordance with standards. While compliance with the NENA standards for address points, road centerlines and emergency responder jurisdictional boundaries will require both money and effort to achieve, the up side is that these standards can improve the data currently contained in the statewide MSDI data sets. The time has come however when local data providers need to assess, improve, and build workflows that will maintain these data in order to be ready for NG 9-1-1 implementation.

MSL will continue to serve as the lead subject matter expert to the Energy and Telecommunications Interim committee as they conduct their NG 9-1-1 Interim Study. MSL will continue to attend local government coordination meetings to provide guidance regarding GIS data needs and will ensure staff aids local governments by reviewing, assessing, improving and maintaining street centerlines, address points and jurisdictional boundaries that will be required for NG 9-1-1.

MSL will continue to review NG 9-1-1 relevant MSDI datasets including road centerlines, address points and jurisdictional boundaries, to identify data improvement needs as we learn more about the NENA standards and/or as the state adopts NG 9-1-1 data standards.

Data partners should receive funding support and outreach that enables them to assess, improve and maintain required NG 9-1-1 data, including road centerlines, address points and jurisdictional boundaries, according to the NENA standards.

### ***1.b. County Land Records***

Over the past two years MSL managed the Cadastral Administration through Streamlined Parcel Adjustment Workflows (CATSPAW) project to make use of ESRI's parcel fabric to improve vertical integration of the data within the Montana Cadastral Database. This work improves the accuracy of local control data, tax parcel data, administrative boundaries, etc., and aligns that data with aerial imagery. This work improves the quality of statewide MSDI data and it ensures the value in MLIAC's multi-year investment in county grants to support the collection of local Geographic Coordinate Database points.

Ongoing work to support the Montana CadNSDI will require continued coordination with the BLM and local governments to identify and prioritize areas for accuracy adjustments. MSL will make accuracy adjustments to the CadNSDI by incorporating additional control data created from corner recordation records held by county governments and new land surveys. In areas where the CadNSDI has been adjusted, MSL will vertically align all associated tax parcels and administrative boundaries.

Data partners should apply for grant funding that enables them to continue to collect local land records and control data that will develop and enhance administration of county records.

## ***2. Natural Resource Data***

Substantial resources from State and Federal partners are invested every year for the collection, maintenance, and delivery of natural resource data. For these efforts to benefit the MSDI natural resource themes, specifically Hydrography, Land Use/Cover, and Wetlands, the activities of individual agencies need improved coordination and communication to identify priority data collection and integration strategies and update schedules

### ***2.a. Montana Hydrography Dataset***

The Hydrography theme lead at MSL acts as the state steward for the NHD. The USGS NHD data structure and editing routines make it difficult for Montana to support the federal/state stewardship model while still attempting to meet state and local hydrography needs. As a result, over the last several years, MSL, with input from the Hydrography Working Group, has begun to focus work on a Montana Hydrography Data which better aligns to the needs of the partners as opposed to the current NHD. Some of these needs include keeping this critical data current as there are constant natural changes each year in water quantity and flow, and adding more local-scale data.

MSL will continue to coordinate the Montana Hydrography Working Group and hold meetings approximately quarterly. This group is the primary sounding board for State agencies to express their hydrography data needs. The DNRC, Department of Environmental Quality, Fish Wildlife and Parks, and the Montana Climate Office are regular, active participants.

MSL will continue to coordinate with the DNRC to carry out Water Information System recommendations made in the 2015 State Water Plan.

MSL will continue to develop workflow to expedite the MSDI hydrography dataset editing process, especially when revisions are obtained in bulk or extracted from existing spatial datasets. Editing efforts will primarily focus on improving the spatial alignment of streams, rivers, and lakes and adding more local-scale features, such as canals, ditches, springs, and small dams and reservoirs that are not currently in the statewide dataset. Additional attention will be given to improving feature attributes, primarily flow classification (perennial, intermittent, or ephemeral).

MSL will continue to coordinate editing efforts with Glacier National Park and to seek additional sub stewards of the hydrography dataset. Data partners are encouraged to apply for grant funds to support development of local-scale spatial data that can be added to the statewide dataset, such as canals and ditches, irrigation infrastructure, and stormwater drainage systems.

## ***2.b Land Cover***

There is a critical need for consistent annual funding to support the Land Cover and Wetlands themes. The Land Cover 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 continued reduction in MLIA 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 Land Cover and Wetlands themes. The Montana Natural Heritage Program acts as the state steward for the Land Use/Land Cover (LULC) dataset. In prior years staff and resources at the UM Spatial Analysis Lab. were utilized to update and maintain this data. However, as funding diminished in FY2014 and was not available in FY2015, no substantial updates have been made since 2013. As a result the MSDI LULC mapping is now several years out of date and does not accurately reflect changes due to human land uses and the impact of fires. For successful implementation of statewide natural resource planning activities such as the Governor's Sage Grouse Habitat Conservation Program there is a critical need for the LULC mapping to be kept current and ideally incorporate data with greater spatial resolution.

The DNRC and the US Forest Service map fire boundaries yet neither agency coordinates the delivery of this data to the LULC theme steward to assist with updates to the Land Cover Mapping and there is no established annual schedule for updating the Land Cover mapping to reflect changes due to forest and grassland fires. Likewise, there is no established interagency protocol or schedule for incorporating land use changes mapped by the State Department of Revenue as part of their land use taxation process. This is also the case for LULC changes mapped by county and local jurisdictions. Data from natural resource inventories conducted by Federal agencies such as the Natural Resources Conservation Service (NRCS) have also mapped classes of Land Use and Land Cover that could be incorporated and improve the MSDI LULC data. These and other projects have also acquired and pre-processed the Landsat satellite imagery needed for updating the MSDI LULC. Yet without funding for MTNHP staff with the skills required for development and maintenance of the MSDI LULC, not only will the data become further out of date, but it is unlikely that MTNHP will be able to retain the essential staff and skillset.

## ***2.c Wetlands***

MTNHP has been awarded \$15,000 from DEQ to complete mapping of USGS quads for which no current or historical mapping exists, and to evaluate historic mapping that has recently been added to the US Fish and Wildlife Service National Wetlands Inventory (NWI) database. This grant built on the \$10,000 committed to MTNHP by MSL. These two funding sources will allow the MTNHP to prepare a single statewide MSDI theme for wetlands by late Spring of 2016. While much of the theme will include

historic (1980s) mapping only, which does not include riparian areas, users will have a single source through MSDI for data and metadata. MTNHP plans to address quality concerns and data usability pertaining to the historic data in the metadata so that users understand its limitations. At the same time, MTNHP will continue to seek funding to update the 1980s data , focusing on areas where the absence of riparian mapping compromises the value of the data for planning and analysis (e.g., the Rocky Mountain Front) or where land use change has rendered the older data obsolete (e.g., portions of the Hi-Line).

### ***3. Rural County and Tribal GIS development***

As noted in the accomplishments section, the results of several FY 2015 grants that provided funding for rural county Web GIS development were impressive. The challenge is to keep this momentum going for other rural counties not yet invested in the technology. MSL, in coordination with local entities, will:

- Explore opportunities to create regional GIS consortiums that leverage a multi-jurisdictional approach to problem solving using GIS analysis to demonstrate the value of GIS to policy makers; and,
- Encourage localized GIS solutions that demonstrate the value of GIS in improving the quality of life for Montana citizens and building grass roots support for location based services.

## ***FY 2017 Land Plan Budget***

The FY 2017 Land Plan Budget represents a modest increase of \$26,500 over FY 2016, \$25,000 of which is allocated for MLIA grants. This increase is reasonable given the underspending in grants from what was allocated in FY 2016 and the current slight uptick in revenues in the MLIA account. A final determination for the amount of available grant funds will be made at the end of March, 2016, in accordance with administrative rule. If additional funds are available, there may be an opportunity to further increase grant funding.

<b>Digital Library</b>	<b>General Fund</b>	<b>MLIA Funds</b>	<b>NRIS State</b>		<b>Anticipated</b>	<b>Total</b>
			<b>Core</b>	<b>Coal Tax</b>	<b>Contracts/Grants</b>	
PERSONAL SERVICES *	666,509	495,000			80,000	1,241,509
<b>Operations</b>						
FIXED COST, OPERATIONS, COUNCIL	495,504	48,500		53,184		597,188
<b>UOF M Heritage</b>						
<b>CONTRACT</b>	168,092	10,000	283,523			461,615
<b>SUB-TOTAL</b>	<b>1,330,105</b>	<b>553,500</b>	<b>283,523</b>	<b>53,184</b>	<b>80,000</b>	<b>1,703,124</b>
<b>MLIA Grants - FY 17</b>						
<b>Budgeted</b>		<b>225,000</b>				<b>225,000</b>
<b>TOTAL DIGITAL LIBRARY</b>	<b>1,330,105</b>	<b>778,500</b>	<b>283,523</b>	<b>53,184</b>	<b>80,000</b>	<b>2,525,312</b>

### **\*GIS Personal**

<b>Services FTE</b>	<b>General Fund</b>	<b>MLIA funds</b>
User Services Staff (incl. Coordinator) Information Management	1 FTE	1 FTE
Information Products	1.9 FTE	4 FTE
Total FTE	2 FTE	1 FTE
	4.9 FTE	6 FTE

## ***Future focused planning***

The current Land Plan reflects the priorities deemed most pressing by the Council that can be addressed within the scope of existing resources. MSL and MLIAC recognize that numerous opportunities exist for improved GIS data and services in Montana that are not currently being directly addressed but that warrant future consideration.

1. Climate data: The Montana Climate Office housed at the University of Montana has discussed forming a working group, but has no budget (estimated .25 FTE) for this activity. This kind of coordination will become more important in future years as climate information is more tightly integrated with broad-based policy decisions. A climate-specific working group could also identify products and formats of interest. A broader collaboration through a working group could identify additional avenues for funding and opportunities for new products.
2. Elevation data: 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 \$100M 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 data at today's collection rates for Q2 data is \$48M 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 M meaning the state's share would be approximately \$900,000; more than the MLIA account took in during FY 2014. Clearly some compromise needs to be worked out with USGS so that Montana can obtain higher quality topographic data at an affordable cost. Montana does not have an identified state steward for elevation and lack of funds prevents our participation in the USGS 3D Elevation Program (3DEP). Without leadership and funding to obtain higher resolution elevation data, GIS users have not been actively engaged in discussions around this dataset.
3. Geographic Names: Significant edits to the Geographic Names Information System (GNIS) have been submitted to USGS by MSL though, for the past two years, the edits have not been incorporated into the USGS master database. For this reason, maintaining the Montana Geographic Names database results in a redundant and laborious workflow for the MSDI Geographic Names theme lead.
4. Imagery: MSL continues to ask whether Montana stakeholders are ready and/or able to form a consortium that would pursue acquisition of higher resolution imagery than what NAIP can provide. At this point it appears there is little resolve to do this however the state's revised appraisal cycle along with local government needs may create more opportunity in the future.
5. Federal Support of MSDI: Several MSDI stewards and leads have noted the fragmented efforts between their programs and corresponding federal agencies that historically led data development and supported state efforts. Examples of the shift in support are noted above as they relate to PLSS, NHD and Geographic Names. Other MSDI stewards simply noted that they have noticed that, primarily due to budget limitation, federal agencies have significantly reduced external coordination activities in the last few years. Some successful instance of Federal

coordination are worth noting. For example the U.S. Department of Transportation recently sponsored a national address summit, reaching out to state and local address authorities for their expertise and ideas on how to construct a national address database. The costs for Montana state and local representatives to attend was covered by USDOT. Ideally, these types of positive coordination efforts should be the norm. Another example is the successful coordination between the NRCS and MSL which supports a streamlined integration of annual updates to the SSURGO soils data into the MSL data discovery and access portal and the Data Bundler applications. There is opportunity for representatives on MLIAC to actively seek innovative ways to improve communication and coordination between levels of government to prevent and reverse what appears to be jurisdictional movement in opposite directions on several MSDI issues.

6. GIS Coordination: Opportunities for increased GIS Coordination abound. In addition to increasing engagement with federal partners, MSL should increase support to the State GIS Community of Interest and staff should engage local governments through the use of tools like ArcGIS Online. To that end, MSL should seek opportunities to make funding for such tools affordable for all local governments. Finally, the GIS coordinator and staff should work with the Statewide Library Resources Division of the State Library to more fully adopt GIS technology across the library, to support adoption of GIS technology by libraries around the state and to increase access to and use of GIS data by Montanans in every community.

## ***Summary***

Informed by the accomplishments and ongoing needs identified by previous Land Plans and MLIAC members, and within the funding resources that currently exist, the FY 2016/2017 Land Plan identifies key priorities for ongoing GIS development and coordination in Montana. These priorities included:

- Targeted work to improve the accuracy of land records at both the state and local level and vertical integration of adjustments in other MSDI themes;
- Support for local, regional, and statewide efforts to develop a NG 9-1-1 system for Montana that relies on local road centerlines, address points and jurisdictional boundaries, according to the NENA standards;
- Ongoing development of the Montana Hydrography Dataset in partnership with the NHD work group. Development includes improved processes for editing the dataset and the identification and inclusion of locally significant features;
- Work to identify funding to continue to maintain the Land Cover dataset;
- Mapping USGS quads for which no current or historical mapping exists and evaluating historic mapping; and,
- Continuing to build capacity for rural county GIS programs.

To accomplish these tasks, this Land Plan allocates \$778,500 in MLIA funds for GIS Coordination, MSDI development and grants to local, regional, and tribal governments. MSL and MLIAC are mindful of the

fact that current funding only allows us to accomplish a portion of the ongoing work necessary to develop a robust and well-adopted GIS infrastructure in Montana as envisioned by the Montana Land Information Act. MSL also recognizes a need to increase GIS coordination activities with a variety of partners, including local governments, and state and federal agencies to further the vision of a Spatial Data Infrastructure that encourages and integrates data developed at the local level by those who are considered the authoritative data sources into a statewide resource that meets the needs of all Montana stakeholders.