



The Lake County Grant Application Montana Land Information Act Fiscal Year 2017

The Lake County Digital Public Land Survey System Enhancement Project

The purpose of this grant application is to fund the survey work necessary to enhance the Digital Public Land Survey System within Lake County, Montana.

Primary Applicant: Lake County, Montana

Name of principle individual: Warren C. Fahner Jr., GISP
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Department: GIS

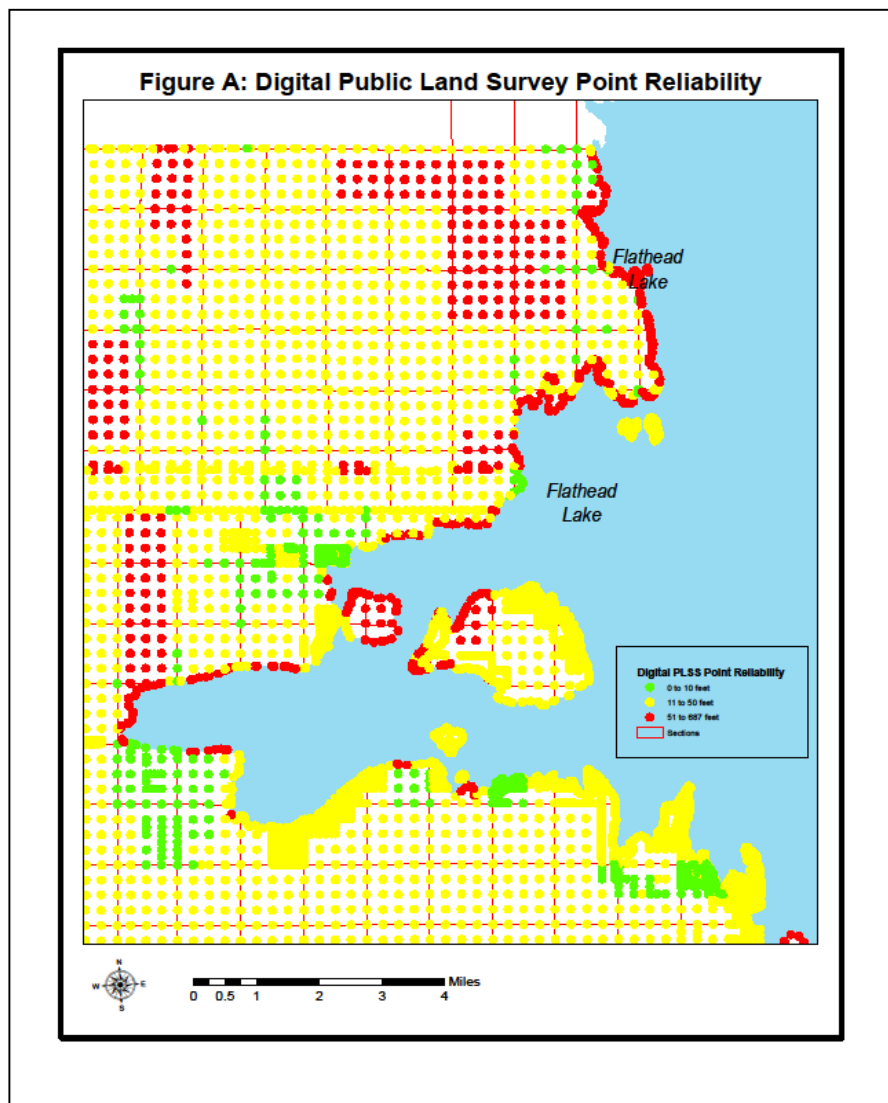
Date Submitted: February 16, 2016

Descriptive Title of Applicant's Project (Required):

The Lake County Digital Public Land Survey System Enhancement Project

Relevance and Public Benefit: Montana’s cadastral framework layer was originally based on the Bureau of Land Management’s (BLM) Geographic Coordinate Database (GCDB). This database is known to be spatially inaccurate in most areas of Lake County. The following Figure A: illustrates the degree of error within a portion of the proposed project area:

These inaccuracies are especially problematic when more spatially accurate data is overlaid on the cadastral framework. Of particular concern is the vertical alignment offsets that often confuse public users and may produce inaccurate results when analyzing data, which rely on accurate alignment. The solution to this problem is to acquire better survey control using Global Navigation Satellite System (GNSS) technology and to contribute this enhanced control to the Geodetic Control Framework. This will ultimately increase the accuracy of the cadastral and other Montana Spatial Data Infrastructure (MSDI) framework layers. The Lake County Digital Public Land Survey System Enhancement Project proposes to update the digital position of sixty



PLSS points. The project qualifies for Montana Land Information Act grant funding under Table 1; 1.b: County Land Records.

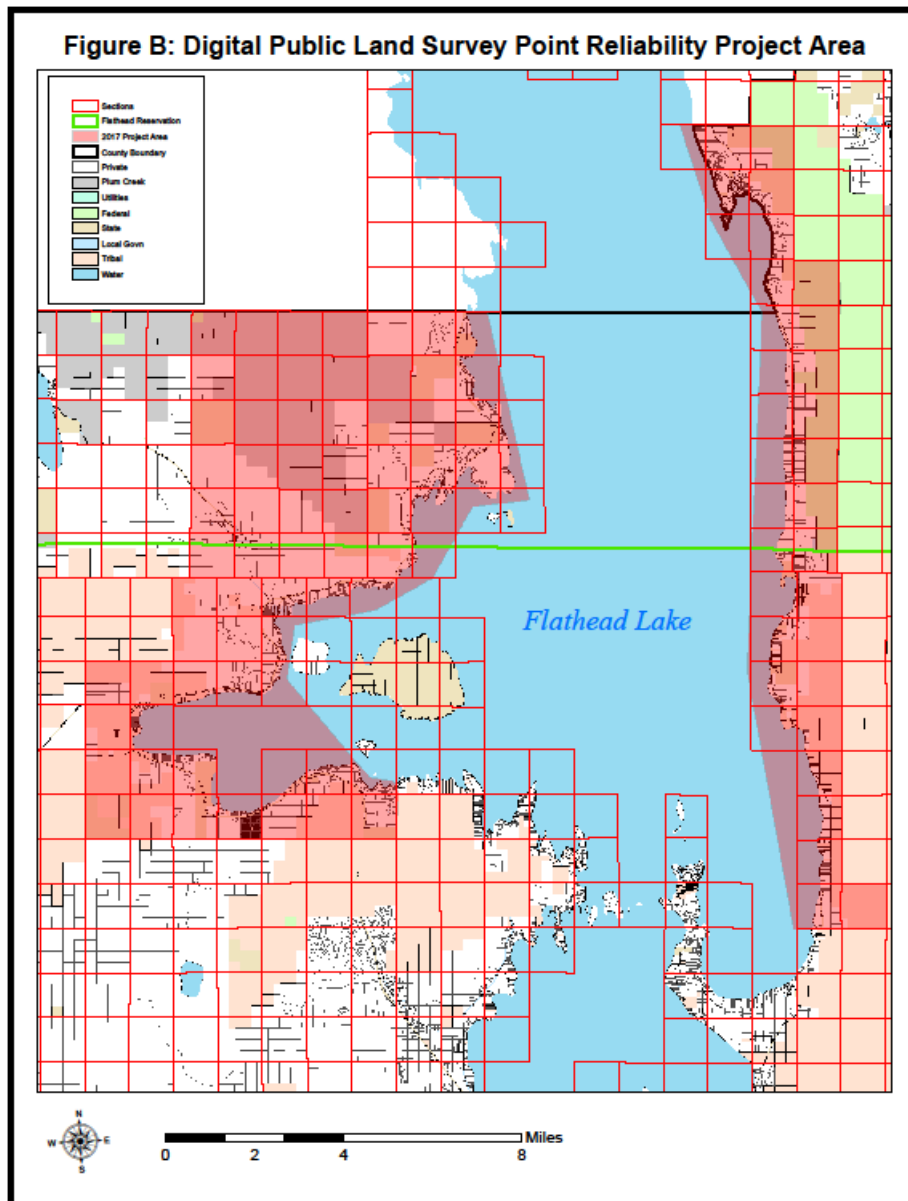
Table 1: The current year Land Information Plan Grant Category priorities are listed in the table below. FY2017 MLIA grant applications/projects must fall under at least one grant category priority of the plan (See “Step 2 - Relevance and Public Benefit”, page 12).

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

Scope of Work

Goal of the Project: To improve the Digital Public Land Survey System within Lake County.

Objective 1: Finalize scope of work: The initial plan is to survey 60 monuments, which correspond with section and quarter section corners. (See Figure B):



Task 1.1: Lake County will prioritize PLSS corners for collection and develop a final scope of work.

Deliverables:

- Scope of work document
- Maps that prioritize data collection

Objective 2: Contract with licensed Land Surveyor to survey PLSS section and quarter section corners.

Task 2.1: Lake County will create and advertise a Request for Proposals.

Task 2.2: Lake County will review bids and select licensed surveyor.

Deliverable: Signed contract with licensed surveyor's firm.

Objective 3: Research and prepare for field work.

Task 3.1: Lake County and contracted Surveyor will select and prioritize the monuments based on PLSS reliability, monument accessibility, and project area.

Task 3.2: Lake County will produce field-ready maps for each collection area that identify each designated PLSS monument, PLSS points in the vicinity, water features, property ownership, type of ownership (private, government, tribal), road centerlines, local topography based on existing LIDAR data, and other relevant data.

Task 3.3: Surveyor will develop a data collection plan based on their professional estimation of the relative difficulty of survey work and project area. The surveyor will utilize either Real Time Kinematic (RTK) or post-processed GNSS data as deemed appropriate.

Task 3.4: Based on the prioritized list of monuments and project area, Lake County will take responsibility for gaining authorization from private property owners prior to survey work being done. If authorization cannot be reasonably obtained, Lake County will adjust the collection plan to best compensate for the needed change.

Deliverables:

- Document describing collection plan.
- Field maps of each collection area.
- Authorizations for survey work.

Objective 4: Survey an estimated 60 PLSS monuments.

Task 4.1: Collect survey data. Surveyor will survey designated monuments following in the most general terms as described in the collection plan. Coordinates collected by the Surveyor will reduce the PLSS reliability error as much as possible with the available tools.

Deliverables:

- Certification by Licensed Surveyor of collected points.

Objective 5: Submit collected data.

Task 5.1: Lake County and Surveyor will collaborate to submit collected points data with accompanying metadata in a format acceptable to the MSDI theme leads.

Deliverables:

- Point Data and Metadata is submitted to the MSDI theme lead in an acceptable format.

Project Schedule

This project has a planned duration of 12 months starting in July 2016 and ending in July 2017. The following timeline shows the duration (by month) of the nine planned tasks.

Task	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Task 1.1 Finalize scope of work	█												
Task 2.1 Advertise invitation to bid		█											
Task 2.2 Review bids / select Surveyor			█										
Task 3.1 Selection on monuments				█									
Task 3.2 Produce Maps				█	█	█							
Task 3.3 Develop Collection Plan			█	█									
Task 3.4 Property Owners Permission				█	█	█	█						
Task 4.1 Collect Survey Data					█	█	█	█	█	█	█	█	
Task 5.1 Submit Collected Data												█	█

Project Management and Organizational Capability Narrative

The project management for the Lake County Digital Public Land Survey System Enhancement Project will be shared by Warren C. Fahner, GISP the Lake County GIS Department Coordinator and Scott Beggs the Lake County Finance Director.

Warren Fahner is the Lake County GIS Coordinator and is a graduate of Northwood University with a Bachelors of Business Administration, which was comprised of double major in Economics and Management. He has earned a Post Baccalaureate Certificate in Geographic Information Systems from The Pennsylvania State University College of Earth and Mineral Sciences and is currently a Master’s Degree Candidate. He has sixteen years of work experience in Information Technology and seven years working in GIS. He attained his GISP in the past year.

Scott Beggs, Lake County Finance Director: Current employment with Lake County - October 2015 – Present – a portion of the job duties includes monitoring all grants of Lake County. These grants are from Federal, State and other organizations. Grants are for Public Health, Public Safety, Public Works and

General expenditures. Experience prior to employment with Lake County – July 1986 through October 2015 - through consulting and other services assisted local governments with establishing grant review and compliance programs and examined grant compliance procedures for various local governments.

Lake County has successfully completed six MLIA Grants.

Budget Justification Narrative and Tables

The costs for this project include Personnel Costs, Travel Funds, Office Supplies & Postage, and Professional Fees. It should be noted that the costs associated to surveying monuments on both shorelines could differ greatly due to local topography, driving distances, and GPS signals being blocked by the Mission Mountains. While we are confident that acquiring 60 points within the budgeted amount can be accomplished the cost per individual control point might vary greatly.

Lake County will provide in the form of matching funds:

Applicant budget summary

Category	MLIA Share	Applicant Share	Total
a. Personnel Costs	0.00	3000.00	3000.00
b. Travel Costs	0.00	200.00	200.00
d. Office Supplies & Postage	0.00	300.00	300.00
e. Professional Fees	20,000.00	6000.00	26,000.00
Totals	20,000.00	9500.00	29,500.00

Authorizing Statement

I hereby certify that the information and all statements in this application are true, complete and accurate to the best of my knowledge and that the project or activity complies with all applicable state, local and federal laws and regulations.

I further certify that this project will comply with applicable statutory and regulatory standards. I further certify that I am (by my signature) authorized to enter into a binding agreement with the Montana State Library to obtain a grant if this application receives approval.

Warren C. Fahner, GISP` _____
Name (print or type)

Title: __ Lake County GIS Coordinator __

Signature and Title of Authorized Representative(s) of Public Entity Applicant

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