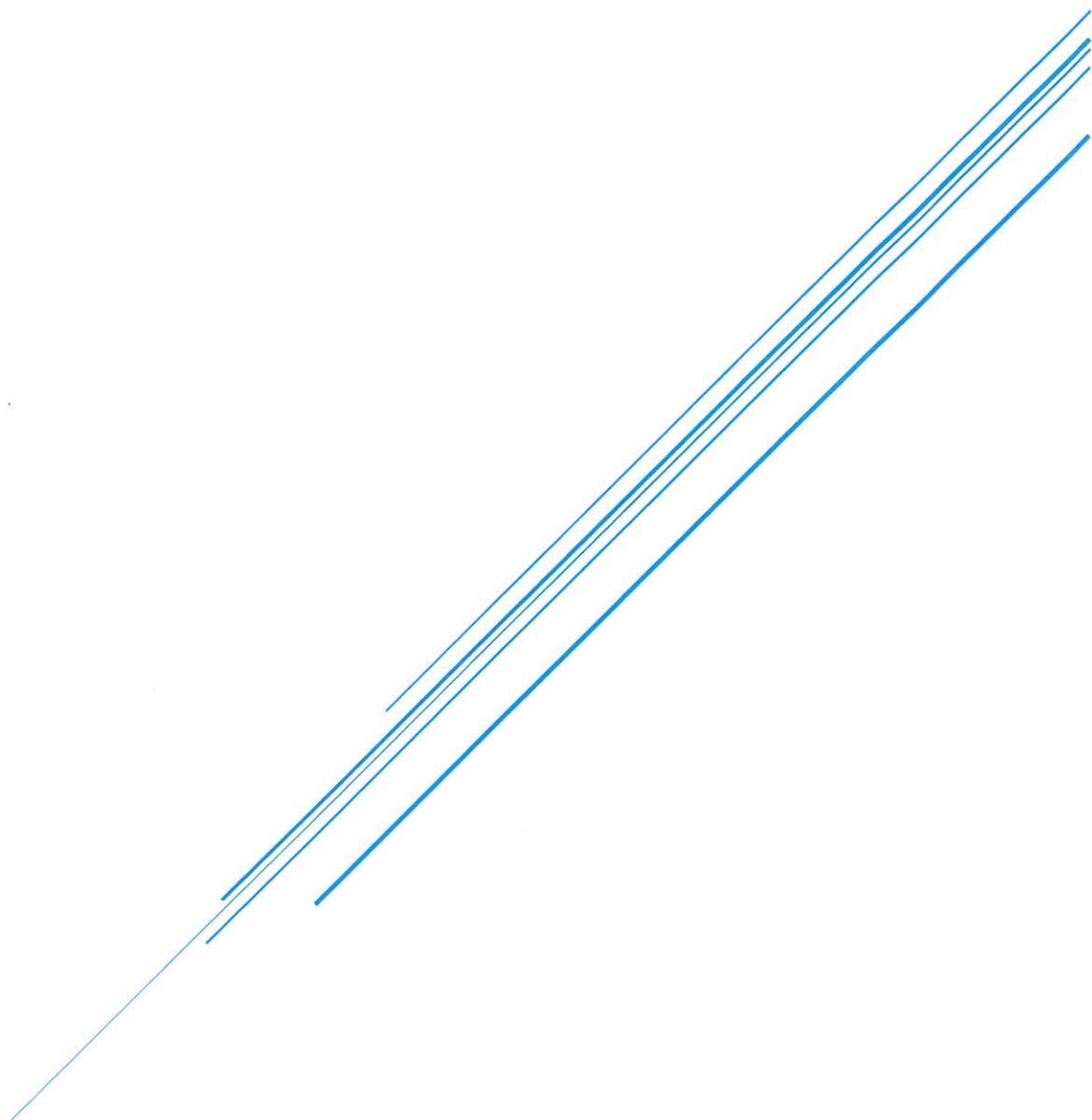


# SANDERS COUNTY, MONTANA

PLSS Accuracy Improvement



Request for MLIA Funding – Fiscal Year 2016  
Submitted by Sanders County, Land Services – February 2015

## APPLICATION FOR GRANT FUNDING

### Applicant and Partner Information

**Primary Applicant:**

Name of principle individual: Kathy Matthew  
Name of agency\entity: Sanders County  
Street: PO Box 519  
City: Thompson Falls  
County: Sanders  
State: MT  
Zip Code: 59873  
Contact email address: kmatthew@co.sanders.mt.us  
Contact fax address: 406-827-4388  
Contact phone: 406-827-6965

**Organizational Unit**

Department: Land Services  
Division:

**Other Project Partners – complete for each partner:**

Name of contact: Stewart Kirkpatrick, State GIS Coordinator  
Name of Agency: Montana State Library  
Street: PO Box 201800  
City: Helena  
County: Lewis and Clark  
State: MT  
Zip Code: 59620  
Contact email address: skirkpatrick@mt.gov  
Contact phone: 406-444-9013

**Date Submitted:** 02/17/2015

**Date Received by State:** \_\_\_\_\_

## Relevance and Public Benefit

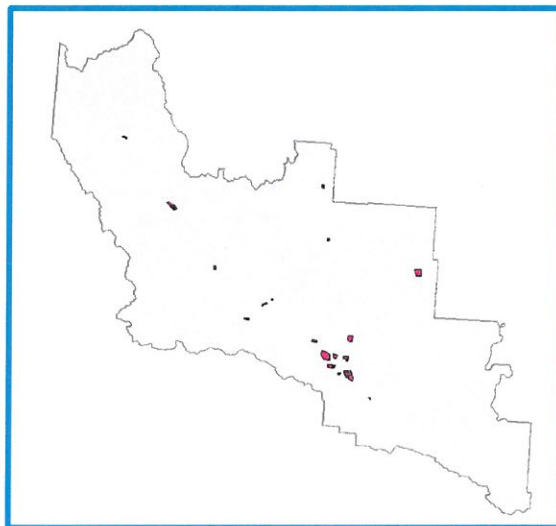
Montana’s cadastral framework layer is based on the Bureau of Land Management (BLM) Geographic Coordinate Database or GCDB, now referred to as CadNSDI. This database is known to be spatially inaccurate in some areas of Sanders County. Plains is an area where the inaccuracy in the CadNSDI is especially poor. These inaccuracies are especially problematic when more spatially accurate data is overlaid on the cadastral framework in the GIS.

The Sanders County cadastral geodatabase is integrated with many data layers including subdivisions, certificates of survey, legal and ownership parcels, election districts, municipal boundaries, and is in the process of adding mobile home parks, rights of way, easements, parks, fire districts, public lands, soil districts, school districts, levy districts, irrigation districts, water and sewer districts, emergency service districts and more. The Public Land Survey System (PLSS) serves as the foundation for these layers.

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.

This solution directly ties to the MLIA FY16 - B1. This project will result in the collection of more accurate survey control points which will advance the MSDI and benefit federal, state, local government and private interests.

## Scope of Work Narrative



*Identified areas of inaccuracy in Sanders County*

**Project Goal:** To improve the spatial accuracy of the PLSS in Sanders County

**Objective 1:** Finalize Scope of Work

- Having identified areas of need, Sanders County will prioritize corners for collection and develop scope of work
- The Rural Addressing Department of Sanders County will produce maps of prioritized corners divided into geographical collection areas

**Deliverables:**

- Scope of work document
- Maps for each collection area

**Objective 2:** Hire contractors

- Sanders County will create and post Invitation to Bid
- Sanders County, will review bids and select contractors

**Deliverable:** Signed contracts

**Objective 3:** Develop Collection plan

- Contractor will research corner recordation via Sanders County Survey Interactive Mapping Site and other available resources including County and City Government personnel, local surveyors, and local utility companies to ascertain if additional PLSS control has been collected and is publicly available.
- Contractor will produce maps for each collection area that, at a minimum, have the points to be collected differentiating those with and without corner records, the 2013 NAIP aerial imagery and road centerline data.
- Contractor will schedule a meeting with all interested parties to take place after the initial review to inquire whether participants have useable geographic coordinates that they would be willing to submit to the project. The Project team will meet to discuss, review, and finalize the data collection plans.
- Contractor will develop a data collection plan for each collection area based on their estimation of the ease of coordinate collection, availability of existing coordinates, relative existing accuracy, and estimated final accuracy after adjustment.
- Sanders County will produce and provide a letter for use by the Contractor to serve as an introduction to landowners as to the purpose of the project

**Deliverables:**

- Maps for each collection plan area updated based on additional resources
- Meeting held
- Collection plan document
- Letter provided

**Objective 4:** Collect approximately 200 corner locations

- Contractor will collect, or obtain from existing sources, coordinate positions on all points designated in the collection plan. Coordinates collected by the Contractor will have a certifiable accuracy of less than 1-meter. Contractor must be able to certify an accuracy for coordinates obtained from other sources, however that accuracy may be greater than 1-meter.

**Deliverable:**

- Certification by the Contractor's Public Land Surveyor, stating that all points collected or obtained from other sources meets the accuracy requirement

**Objective 5:** Submit collected data

- Contractor will submit collected points and metadata to the state for review and acceptance
- Contractor will submit all project metadata and all metadata on collected or obtained points in a format that meets the specifications of the Montana Control Point Database (MCPD). The coordinates and metadata will be entered into the MCPD Input spreadsheet to meet the specifications of the MCPD.
- Contractor will file documents with the Sanders County Clerk & Recorder

**Deliverables:**

- Points and accompanying metadata received by state for review
- Coordinates and accompanying metadata entered in the MCPD Input Spreadsheet
- Corner documents are recorded

## Project Management and Organizational Capability Narrative

Sanders County has the capability needed to complete this project on time and within budget. The following personnel have the knowledge, skills and experience. Both are accountable for administering the current MLIA grant.

### Kathy Matthew

Kathy has been with Sanders County for 11 years, having received her degree in Geography from Ohio University. As the County Planner she understands the value of a comprehensive GIS mapping program, integrating various departments, creating an information resource that is ever evolving. She has assisted Lori Methgen in overseeing the implementation of this next level of GIS mapping in Sanders County, identifying practical application and projecting future possibilities to incorporate on line interactive mapping, acting as a liaison between local government and local citizens for the continued formation of Sanders County. It is pertinent that Sanders County take this next step to gather and submit survey control points to correct the inaccuracies of the Geographic Coordinate Database or PLSS.

### Lori Methgen

Lori has worked for Sanders County since 2007 and has served as the GIS/IT Technician since 2010. Lori currently completes all facets of maintenance for the roads and structures layers of

the geodatabase which includes field data collection, processing and editing using ArcGIS Desktop. Having received a 2015 MLIA grant, we have been able to build and maintain sustainable GIS map layers for multiple staff, public officials, and citizens, using ArcGIS.com.

**Stewart Kirkpatrick**

As the Montana State GIS Coordinator, Stewart will assist with contract specification and project planning.

**Sanders County** will issue an Invitation to Bid to Registered Land Surveyors for this project.

**Budget Justification Narrative and Tables**

**Personnel** – Estimated 100 hours at County billing rate of 30.00/hour which includes fringe benefits. This will allow for prioritizing corners for collection in identified areas and developing a scope of work, corner recordation, and administering the grant.

**Travel** – none

**Equipment** – none

**Supplies** – printing materials

Category	MLIA Share	Applicant Share	Fund #2859 Share	Total
a. Personnel		\$3000		
a.1 Fringe Benefits				
b. Travel				
c. Equipment				
d. Supplies		\$200		
e. Contractual	\$25,000	15,000	20,000	
f. Other				
<b>Totals</b>				

**Statement of Support**

See Attached

## Renewable Grant Accountability Narrative

N/A

## Sign the Application

### 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.

Katherine J. Matthews - Director Land Service  
Signature and Title of Authorized Representative(s) of Public Entity Applicant

2015-2-17  
Date

February 17, 2015

Lori Methgen  
GIS/IT Tech  
Sanders County  
PO Box 519  
Thompson Falls, MT 59873

Dear Erica:

As Montana Spatial Data Infrastructure stewards of the Cadastral, Geodetic Control and Administrative Boundary themes, we highly encourage data contributors to improve the accuracy of the digital Public Land Survey System. Using a local/state partnership approach we can get new survey control entered in to the State's parcel fabric and the Montana Control Point Database. After entry into the parcel fabric, the State Library can assist Sanders County in an adjustment of the Cadastral database and corresponding administrative boundaries for better vertical alignment with aerial photography and other features like road centerlines and structures collected using GPS. As State GIS Coordinator representing the MSDI theme leads for Cadastral, Geodetic Control and Administrative Boundaries, I strongly support Sanders County's PLSS enhancement efforts and their FY 2016 request for MLIA funding.

Sincerely,



Stewart Kirkpatrick  
State GIS Coordinator  
Montana State Library