

**BUTTE-SILVER BOW
PLANNING DEPARTMENT**

**APPLICATION FOR
MONTANA LAND INFORMATION ACT
FISCAL YEAR 2020**

**BUTTE-SILVER BOW
ROAD OWNERSHIP ATTRIBUTION PROJECT**



**SUBMITTED BY
BUTTE-SILVER BOW PLANNING DEPARTMENT
155 W. Granite
Butte, MT 59701
Planning@bsb.mt.gov
406.497.6262**

FEBRUARY 15, 2019

SECTION 1 – APPLICANT, PARTNER, AND PROPOSAL INFORMATION

Primary Applicant Contact Information <i>(Please fill this section out in its entirety)</i>	
Name of Agency/Entity:	City-County of Butte-Silver Bow
Department:	Planning Department
Division/Section:	Land Systems Division
Street:	155 W. Granite
City:	Butte
County:	Silver Bow
State:	Montana
Zip Code:	59701
<i>Project Manager Contact Information:</i>	
Name:	Pat Riordan
Title:	Administrator, Butte-Silver Bow Land Systems
Email Address:	priordan@bsb.mt.gov
Phone Number:	406.497.6262
Fax Number:	406.497.6298
<i>Secondary Project Manager Contact Information:</i>	
Name:	Ellen Crain
Title:	Director, Butte-Silver Bow Archives
Email Address:	ecrain@bsb.mt.gov
Phone Number:	406.497.6244
MLIA Grant Funding Request & Match:	
Total Requested MLIA Funds:	\$ 19,929
Total Matched Funds:	\$ 76,497

Proposal Information	
Date Submitted:	February 15, 2019
Identified Grant Priority:	MLIA Grant Priority I. Support Geographic Information Systems for Public Safety and Emergency Response
Annual or Multi-Year Proposal:	Annual FY 2020
Proposal Prepared By:	Pat Riordan, Shelly Cleverly
Short Title of Proposal:	Butte-Silver Bow Road Ownership Attribution Project
<p>Executive Summary</p> <p>The Butte-Silver Bow (BSB) Land Systems Division proposes a road ownership attribution project to enhance the BSB <i>E911 Street Centerline geodatabase</i> for integration into the State's MSDI Transportation Theme according to Next Generation 911 best practices and National Emergency Number Association (NENA) standards.</p> <p>BSB requests \$19,929 of MLIA funds to support the hire of two Temporary Specialists who will perform transcription and analysis of historic records containing road ownership attribute information, catalogue findings, and provide spatial and tabular information to the BSB GIS Office for geoprocessing. The information identified in the research phase will be incorporated into the BSB <i>E911 Street Centerline geodatabase</i>. The outcome of this effort will be NENA standard compliant Road Centerlines for integration into the MSDI Transportation Theme. This data will improve capacity for Silver Bow County emergency responders to access urban and rural areas of the County via public roads, and provide comprehensive public right of way information to the State.</p> <p>The project will occur from July 1, 2019, and will conclude June 30, 2020. BSB commits an in-kind match totaling \$76,497 consisting of salaries, benefits, and indirect costs. These in-kind funds represent real work to accomplish the proposed project.</p>	
List All Past Awarded MLIA Grants:	
<p>FY 2009 Butte-Silver Bow Cadastral Database Enhancement Project FY 2012 Butte-Silver Bow Sanitary Sewer Improvement Project FY 2016 Butte-Silver Bow Rural Emergency Services Online</p>	

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Funding Partners: <i>(required for each partner, copy box as needed)</i>	
Name of Contact:	Dave Palmer, Chief Executive
Name of Agency:	City-County of Butte-Silver Bow
Street:	155 W. Granite
City:	Butte
County:	Silver Bow
State:	Montana
Zip Code:	59701
Contact Email Address:	dpalmer@bsb.mt.gov
Contact Phone Number:	406.497.6222

SECTION 2 – RELEVANCE

The Butte-Silver Bow (BSB) Land Systems Division proposes this Road Ownership Attribution project to reconcile deficiencies in BSB Cadastral information and support geographic information systems for public safety and emergency response. This project will further the Montana Land Information Act (MLIA) Plan's objective of generating Next Generation 9-1-1 (NG 911) Road Centerlines for incorporation into the State's MSDI Transportation Theme and enhance BSB's capacity to standardize land records documentation and make this information commonly available.

BSB's land records collection is a comprehensive public asset. In recent years, however, BSB has identified deficits in its road ownership information. BSB regularly fields road ownership inquiries to, for example, determine public right of way through rural areas of the County. In some cases road ownership information is unavailable within our GIS database. In such instances, missing road ownership information forces staff to initiate time-intensive and costly research efforts.

Following one such effort, the BSB Public Archives (Archives) began assembling a road ownership attribute database from its collection of non-current government records. Research and analysis of Council of Commissioners minutes, petitions and communications, Street and Alley Committee records, Road Department Records, and other miscellaneous documents including School Superintendent Records revealed valuable road ownership attribute information that has the potential to greatly enhance BSB GIS' *E911 Street Centerline geodatabase*.

The BSB Road Ownership Attribution Project will expand capacity to perform archival research and identify road ownership attribute information and spatially join this information to the BSB 'E911 Street Centerline' geodatabase. This effort will produce "NG 911 Road Centerlines" and assure emergency services access throughout urban and rural Silver Bow County.

SECTION 3 – PUBLIC BENEFIT

The BSB Road Ownership Attribution Project will improve the State's MSDI Transportation Theme and contribute important road ownership attribute information to the State's Next Generation 9-1-1 Road Centerlines assuring emergency services access throughout Silver Bow County.

The BSB E911 Street Centerline geodatabase contains NENA compliant road attribute information that supports emergency response services in Silver Bow County. This information serves as the base map for emergency services resources including map books and ArcGIS Online (AGOL) web maps. These resources ensure efficient response to calls for emergency assistance throughout the County, and are particularly valuable when responding to rural emergencies.

For example, several years ago, a land transaction occurred in the Highland range south of Butte. The new owner acquired a large portion of land and upon acquisition fenced off the Highland Road with a locked gate. Following the acquisition, homeowners in the vicinity worried the closure would prevent emergency services from accessing the area on the west side of the Highland range. They argued a fire or flood could trap them, leaving only one route of escape. Legal proceedings ensued shortly thereafter resulting in a time-consuming research effort to document and determine public or private ownership.

The Archives utilized historic Council minutes, petitions, surveys, maps, and newspaper clippings to complete this research. Ultimately, the Archives found the Highland Road was established as a postal road in the 1860s, verified the road was used by County School Superintendents to visit rural schools, was a route to existing mines, and used by biologists and scientists to study wildlife habitat. The research also revealed the County's past efforts to survey and improve the road. This research enabled BSB to prevail in litigation and keep the road open and accessible to emergency services personnel and public.

SECTION 4 – PROJECT MANAGEMENT AND ORGANIZATION CAPABILITY

BSB Geographic Information Services (GIS) Office and Land Records Office are components of the Land Systems Division of the BSB Planning Department. The GIS Office's mission is to provide the most complete, accessible, and accurate spatial database to benefit City-County, State, Federal and private sector applications and mapping projects. BSB submits this application along with their full measure of experience to undertake the BSB Road Ownership Attribution Project.

BSB has broadly applicable experience in grant administration and program management. At present, the BSB Planning Department is recipient and administrator of several grant funded projects across federal, state and local programs such as the Neighborhood Stabilization Program through the United States Department of Housing and Urban Development, State of Montana Community Transportation Enhancement Program (CTEP) funds, State of Montana Department of Natural Resource Conservation (DNRC), and State of Montana Natural Resource Damage Program (NRDP) grant funds. BSB is the previous recipient of three MLIA awards which have resulted in dramatic updates to the quality of nearly every aspect of BSB spatial data. BSB GIS staff ensure the integrity and functionality of existing datasets for all facets of BSB operations including community development, land use planning, emergency management, and resource protection.

BSB Land Systems Division looks forward to working with the BSB Archives to further enhance its Cadastral information. The BSB Archives brings significant research expertise to this effort as well as vast collections containing road ownership information which will improve the BSB *E911 Street Centerline geodatabase* for the advancement of the State's MSDI Transportation Theme and NG 911 Road Centerlines.

The project team is comprised of numerous members with various backgrounds. Lead personnel are described below.

Lori Casey – BSB Planning Director

Ms. Casey has 25+ years of experience in project and grant management with the Montana Department of Revenue and Butte-Silver Bow. Her past experience with the Montana Department of Natural Resource and Conservation (DNRC) grant program will help ensure the project is managed efficiently. In addition, her frequent use of GIS to develop and implement Planning policy will allow her to effectively contribute to all phases of the project when necessary.

Pat Riordan – BSB Land Systems Administrator

Mr. Riordan has 25+ years of GIS experience in municipal and natural resource projects. Mr. Riordan has administered three MLIA grants. He will also be responsible for coordination with the BSB Archives.

Jeremy Grotbo – BSB GIS Specialist III

Mr. Grotbo has 8 years of experience with GIS software, data maintenance, and map production. He will assist with in-house data management, coordinate hardware and software operations, perform the upload of base layers as well as development of map books and online web maps.

Ellen Crain – Director, BSB Public Archives

Ms. Crain has served as the Director of the Butte-Silver Bow Public Archives since 1990. The Butte-Silver Bow Public Archives was established in 1981 by ordinance to maintain the non-current records of the city-county of Butte-Silver Bow. Ms. Crain will supervise transcription activities and research and documentation of historic records. She will coordinate training and provide supervision of the Temporary Specialists and Archives volunteer.

Tom Loggins – Road Superintendent, BSB Public Works

Mr. Loggins serves as the Road Superintendent for Butte-Silver Bow. Mr. Loggins has 25 years of experience as a heavy equipment operator and extensive knowledge of the BSB Transportation Network. His familiarity with all rural and urban routes, and ongoing cooperative working relationships with Federal and State agencies, will add important detail to this effort.

Sandy Parini – BSB Land Records Assistant

Ms. Parini has 25+ years of experience in land records and brings a thorough understanding of all phases of property ownership and land transactions. This knowledge was accrued while working in the private sector and with Butte-Silver Bow. Her experience and expertise in this area will allow her to assist with research of land records including Certificate of Surveys, Platted Land Developments, and recorded legal documents.

Other Administrative Staff

Clerical support will contribute, as needed.

SECTION 5 – SCOPE OF WORK

Goal 1 - Collect Road Ownership and Attribute Information from Historic Records.

- Objective A. Project Kick-off and coordination meeting between Land Systems Division and Archives.
 - Task 1. Discuss with project team and determine the knowledge, skills, and abilities required of temporary research specialist and temporary transcription specialist.
- Objective B. Advertise and hire temporary specialists.
 - Task 1. Provide training to temporary specialists to identify key words and references pertaining to road ownership and attributes in historical records.
- Objective C. Define and Expand attribute fields of existing Road Ownership Database
 - Task 1. Research Next Generation 911 best practices for road centerline attributes.
 - Task 2. Incorporate additional road ownership attribute information into Road Ownership Database to comply with Next Generation 911 Centerline requirements.
 - Task 3. Document internal procedure for collecting road attribute information from Archival records to incorporate into geodatabases.
- Objective D. Identify and Prioritize review of historic record sources.
 - Task 1. Rank historic records containing road information by order of impact and significance.
 - Task 2. Prioritize review of most relevant records in appropriate sequence, for example Council of Commissioner minutes, petitions, and communications followed by Street and Alley Committee records and so on.
- Objective E. Perform research of historic records.
 - Task 1. Identify roadways, easements, basic descriptions of roadways, roadway names, metes/bounds, and or location of County roads within historic records.
 - Task 2. Record and catalogue attribute information in appropriate column of Road Ownership Database.
 - Task 3. Archives to provide its final Road Ownership Database to BSB Land Systems Division.

Goal 2. Incorporate Road ownership and attribute information into BSB E911 Street Centerline geodatabase file

- Objective A. Prepare necessary GIS infrastructure to support incorporation of new attribute information into BSB GIS database.
 - Task 1. Develop file architecture, databases, data dictionaries, and map documents.

- Task 2. Use existing Geographic Coordinate Database (GCDB) and Public Lands Survey System (PLSS) township and sections polygons to perform geoprocessing of BSB road segments.
 - Task 3. Identify and outline roadway features.
 - Task 4. Update map documents and import roadway features.
- Objective B. Perform quality assurance of Road Ownership Database to identify information gaps.
 - Task 1. Meet with Archives personnel to review research descriptions and match roadway descriptions.
 - Task 2. Identify information gaps and proceed with delegating further research to identified BSB department (e.g. Road Division or Land Office).
- Objective C. Perform further research to close gaps
 - Task 1. Work with Land Office to identify information in collection.
 - Task 2. Work with Road Division to review maps, work logs, survey notes, and construction drawings, as necessary.
- Objective D. Prepare BSB *E911 Street Centerline geodatabase* file for geoprocessing.
 - Task 1. Incorporate Next Generation 911 best practices to ensure E911 Street Centerline file is in proper format.
 - Task 2. Create a common workspace and geographic database hierarchy for the storage of project files and perform spatial overlay analysis.
 - Task 3. Simplify centerline file into a collection of associated centerline segments and spatially join each segment to its corresponding township, section, and range.
 - Task 4. Add new attribute fields to the centerline file, for use in join functions, and to record association with Road Ownership Database and records.
- Objective E. Perform spatial and tabular geoprocessing functions to join Road Ownership Database to BSB *E911 Street Centerline geodatabase* File.
 - Task 1. For records containing thorough location information, roadways will be located by matching to existing centerline features. Tabular roadway description will be joined to centerline files by roadway name, township, section, and range, or by other unique identifiers.
 - Task 2. Records containing locations but lacking an existing corresponding centerline file will be reconstructed using roadway descriptions. Roadways will be located by the use of survey information, record maps, or by association of previously altered infrastructure.
 - Task 3. For remaining or unmatched records, more detailed research will be performed to determine if any associated data, such as archived maps, articles, documents, deeds or otherwise may determine the location of a roadway. Additional discussion will determine the best course of action with remaining records.

Goal 3. Make BSB Road Centerline file and attribute information commonly available to benefit the public.

- Objective 1. Perform Internal Data Management
 - Task 1. Develop a map book of all roadways using data driven pages based on GCDB and PLSS data as well as the location of roadway records identified throughout the project.
 - Task 2. Print map books for distribution or by request.
 - Task 3. Perform continued back end support, data maintenance, or map services, as well as record of the location of map documents and features.
- Objective 2. Public Availability
 - Task 1. Upload E911 Street Centerline file to ArcGIS online.
 - Task 2. Develop publicly accessible webmap for viewing through online address, providing a website URL, or link/embedded url.
 - Task 3. Ongoing webmap maintenance.
- Objective 3. Provide Data to Montana State Library into MSDI Transportation Theme
 - Task 1. Transmit updated geodatabase and any associated schema, digital databases, and available metadata to Montana State Library for incorporation into the MSDI Transportation Theme.
 - Task 2. Provide routine update of E911 Street Centerline file quarterly.

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BSB Road Ownership Attribution Project Schedule			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Ongoing	
Phase	Goal	Task														
Preparation	Goal 1 - Collect Road Ownership and Attribute Information from Historic Records.	Project kickoff														
		Advertise and hire temp staff														
		Define and expand attribute fields														
		Identify sources														
		Perform research of historic records														
		Develop backend files, databases, data dictionaries, map documents														
Research &	Goal 2 - Incorporate Road ownership and attribute information into 911 Street Centerline file	Prepare necessary GIS infrastructure														
		Perform quality assurance of Road Ownership Database to identify information gaps														
		Perform further research to close gaps														
		Prepare 911 Street Centerline file for geoprocessing														
		Perform spatial and tabular geoprocessing functions to join Road Ownership Database to 911 Street Centerline File														
Delegate additional research of information gaps																
Finalization	Goal 3 - Make BSB Road Centerline file and attribute information commonly available	Perform Internal Data Management														
		Public Availability														
		Provide Data to Montana State Library for incorporation into MSDI Transportation Theme														

SECTION 6 – BUDGET JUSTIFICATION AND BUDGET TABLE

The total project cost is \$ 96,426. BSB requests \$ 19,929 FY 2020 MLIA grant funds and pledges in-kind match of staff time and indirect costs totaling \$ 76,497.

Personnel

Personnel expenses are the sole expenses associated with the BSB Road Ownership Attribution Project. BSB commits approximately 4000 hours of staff time to this project. Staff are paid at varying rates, based upon position, ranging between \$10 and \$42 per hour. Benefit rates vary by position as well ranging between 9.5 and 54 percent of salary. BSB estimates providing \$48,246 in salary and \$15,501 in benefits as an in-kind match to this project. BSB also commits \$12,749.44 in indirect costs to this project, which accounts for the use of BSB work stations, software, and hardware used to complete this effort. BSB pledges a total in-kind commitment of \$76,497.

Pat Riordan, Land Services Administrator, and Ellen Crain, Archives Director, will serve as the project managers for this BSB Road Ownership Attribution Project. Mr. Riordan and Ms. Crain will dedicate a minimum of 260 hours each to completing this effort. Mr. Riordan will administer grant funds and complete reporting requirements, manage project tasks, and coordinate the collaboration between the Land Systems Division and BSB Archives. Ms. Crain will provide supervision, training, and leadership to the temporary employees hired to complete the Archival research component of this project. Lori Casey, Planning Director, will provide project oversight. Jeremy Grotbo, GIS Specialist III, will assist Mr. Riordan with geoprocessing and maintenance of thematic data sets. Sandy Parini, Land Records Assistant, will assist with additional land record research within the land records collections if gaps are identified and additional research is necessary. Tom Loggins, Public Works Road Supervisor, will serve as a project consultant providing insight and information relevant to the vast transportation network as necessary.

This MLIA application requests \$19,929 in MLIA grant funds for the hire of two temporary specialists to complete the archival research associated with this project. A Temporary Research Specialist (TRS) will dedicate 30 hours per week for one year for a total of 1500 hours to complete review and research of historic collections. This position will use various skills to identify key words and details found within historic documents and ephemera to catalogue findings in the Road Ownership Database. In addition to the TRS, a Temporary Transcription Specialist (TTS) will dedicate 230 hours over the course of four months, reading and transcribing the oldest hand-written historic records existing ocular recognition software cannot read and electronically transcribe. The two paid positions will be supported by one volunteer who currently performs this research as interested. During the project's duration, volunteer time will be focused on this project. This volunteer time is included as in-kind match as well.

The Archives and Land Systems Division collaboration is aimed at establishing internal processes and procedures to collect and incorporate relevant historic information into local spatial databases. As noted previously, historic documentation identified in the Archives' collections has proven essential to ensuring public access to rural areas of Silver Bow County. This partnership will support the ongoing sustainability of BSB spatial databases and routine updates to collections provided to the State Library for the public's benefit.

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MLIA GRANT BUDGET SUMMARY						
Category	Annual Hours	MLIA Summary	Applicant Summary			Total: MLIA Share Applicant Subtotal Partner Subtotal
		Hours MLIA Share	Applicant Cash	Applicant In-kind	Applicant Subtotal	
a. Personnel						
Lori Casey, Planning Director	80	\$ -	\$ -	\$ 3,334.40	\$ 3,334.40	\$ 3,334.40
Pat Riordan, Land Systems Administrator	260	\$ -	\$ -	\$ 8,535.80	\$ 8,535.80	\$ 8,535.80
Ellen Crain, Archives Director	260	\$ -	\$ -	\$ 9,152.00	\$ 9,152.00	\$ 9,152.00
Jeremy Grotbo, GIS Specialist III	200	\$ -	\$ -	\$ 4,824.00	\$ 4,824.00	\$ 4,824.00
Sandy Parini, Land Records Assistant	200	\$ -	\$ -	\$ 4,220.00	\$ 4,220.00	\$ 4,220.00
Tom Loggins, Road Superintendent	100	\$ -	\$ -	\$ 3,180.00	\$ 3,180.00	\$ 3,180.00
Archives Volunteer	1500	\$ -	\$ -	\$15,000.00	\$15,000.00	\$ 15,000.00
Temporary Research Specialist	1500	\$15,000.00	\$ -	\$ -	\$ -	\$ 15,000.00
Temporary Transcription Specialist	320	\$ 3,200.00	\$ -	\$ -	\$ -	\$ 3,200.00
Subtotal Salaries		\$18,200.00	\$ -	\$48,246.20	\$48,246.20	\$ 66,446.20
a. 1. Fringe Benefits						
Permanent Staff:						
Non-union @39% of wages		\$ -	\$ -	\$10,080.02	\$10,080.02	\$ 10,080.02
Union @54% of wages		\$ -	\$ -	\$ 3,996.00	\$ 3,996.00	\$ 3,996.00
Volunteer Staff @ 9.5% of wages		\$ -	\$ -	\$ 1,425.00	\$ 1,425.00	\$ 1,425.00
Temporary Staff @9.5% of wages		\$ 1,729.00	\$ -	\$ -	\$ -	\$ 1,729.00
Subtotal Benefits		\$ 1,729.00	\$ -	\$15,501.02	\$15,501.02	\$ 17,230.02
Total Salaries, Wages and Benefits		\$19,929.00	\$ -	\$63,747.22	\$63,747.22	\$ 83,676.22
Travel		\$ -	\$ -	\$ -	\$ -	\$ -
Equipment (OCR Software)		\$ -	\$ -	\$ -	\$ -	\$ -
Supplies		\$ -	\$ -	\$ -	\$ -	\$ -
Contractual		\$ -	\$ -	\$ -	\$ -	\$ -
Other		\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Costs (20% of Salary and Wages)		\$ -	\$ -	\$12,749.44	\$12,749.44	\$ 12,749.44
Project Totals:		\$19,929.00	\$ -	\$76,496.66	\$76,496.66	\$ 96,425.66

SECTION 7 – RENEWABLE GRANT ACCOUNTABILITY

BSB is a recipient of three Montana Land Information Act Grants since 2013. In fiscal year 2016 BSB was awarded \$ 7,500 Rural Emergency Services Online grant. This grant enabled BSB to focus resources toward the development of an online tool to support rural area emergency services and provide access to spatial data through ArcGIS Online (AGOL) and procure training. This project was successfully completed within budget; however, BSB did receive a short extension to accommodate scheduling issues with training services.

The greatest success of the project was deploying AGOL in the field to the benefit of our emergency responders and rural-area residents. Following the launch of AGOL, the BSB Fire Department procured three iPads, which GIS staff prepared for use in areas without wi-fi or cellular service further supporting rural emergency services. One outcome of this effort is a discovery many residences are incorrectly addressed leading to a revived effort to verify rural addresses for public safety purposes. Training services procured from GeoData Services were exemplary, and enabled BSB GIS to provide AGOL to all emergency responders and more broadly serve BSB departments, providing a tool that modernized data collection, documentation, and analysis.

BSB has successfully completed the 2016 MLIA Grant and our capacity will be extended to this Fiscal Year 2020 MLIA proposal. We seek to leverage past MLIA funded infrastructure to contribute to the State NENA compliant Road Centerlines effort and enhance the State's Public Safety and Emergency Response GIS resources.

SECTION 8 – CHECKLIST

Initial or mark n/a	Completed Required Task
	Proposal Prepared by an outside party – I have read this document in its entirety. (if applicable)
	Section 1 – Applicant, Partner, and Proposal Information
DR	Primary Applicant Information
DR NA	Funding Partner (if applicable)
DR	Proposal Information
DR	List All Past Awarded MLIA Grants
DR	Section 2 – Relevance (300 max word limit)
DR	Section 3 – Public Benefit (if applicable)
DR	Section 4 – Project Management (if applicable)
DR	Section 5 – Scope of Work Narrative (4-page limit)
DR	Section 6 – Budget Justification Narrative and Table (3-page limit)
DR	Budget Justification Narrative
DR	Complete Budget Table
DR NA	Section 7 – Funding Partner Statements of Support (if applicable)
DR	Section 8 – Renewable Grant Accountability Narrative (if applicable)
DR NA	FY2019 Grantee Report (if applicable)
DR NA	Past MLIA Grant Project Narratives (FY2018 - FY2015) (if applicable)
DR	Section 9 – A Signed Authorizing Statement

