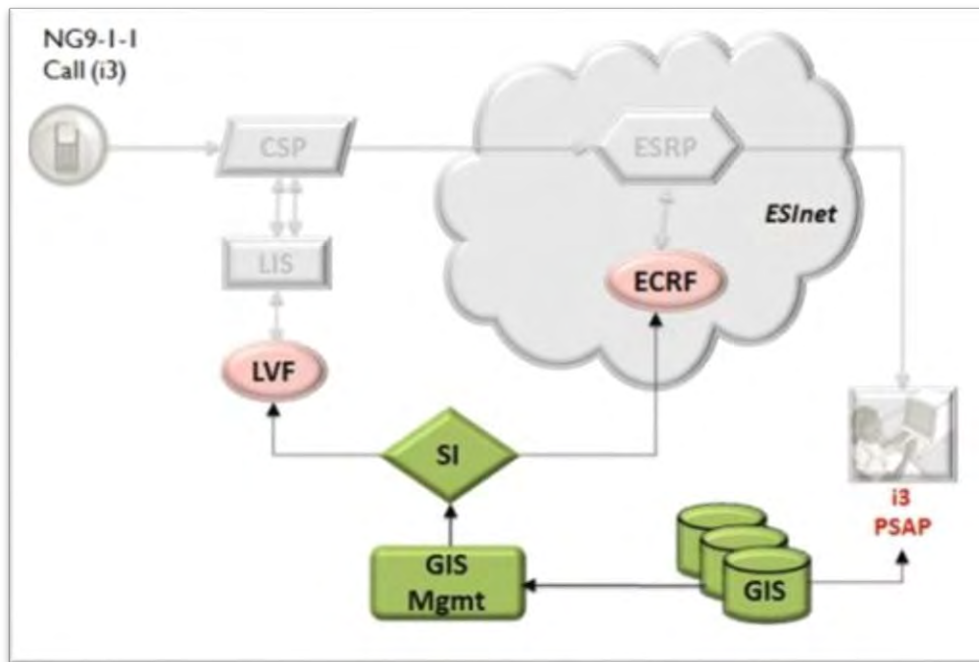


Preparing Carbon County for Next Generation 9-1-1



A grant application submitted to the
Montana Land Information Act (MLIA)
FY 2017 Grant Program



February 16, 2016

Applicant and Partner Information

Primary Applicant:

Name of principle individual: **Tom Kohley**

Name of agency\entity: **Carbon County Disaster & Emergency Services / GIS**

Street: **17 W 11th St. / PO Box 887**

City: **Red Lodge**

County: **Carbon**

State: **MT**

Zip Code: **59068**

Contact email address: **tkohley@carboncomt.com**

Contact fax address: **406-446-2640**

Contact phone: **406-446-1038**

Other Project Partners

Name of contact: **Ken Wall**

Name of Agency: **Geodata Services, Inc.**

Street: **101 E Broadway, Suite 316**

City: **Missoula**

County: **Missoula**

State: **MT**

Zip Code: **59802**

Contact email address: **kwall@geodataservicesinc.com**

Contact phone: **406-203-4684**

Date Submitted (Required): **2/16/16** Date Received by State:

Descriptive Title of Applicant's Project (Required):

Preparing Carbon County for NG 9-1-1

Relevance and Public Benefit

Geographic Information Systems (GIS) is a critical part of the **Next Generation 9-1-1 (NG 9-1-1)** solution. Accurate and standardized geospatial data will be a core requirement of the solution, and keeping those data up to date in an efficient manner will be paramount to the successful implementation of NG 9-1-1 in Montana's **Public Safety Answering Points (PSAP)**.

Geospatial data related to NG 9-1-1 will need to conform to the **National Emergency Number Association's (NENA)** standards. As part of this project, Carbon County's GIS data will be migrated to a standardized database schema based on NENA standards and the **Local Government Data Model (LGIM)** developed by **Environmental Systems Research Institute (ESRI)**. This will provide an important base upon which to implement and enable the development of consistent update procedures related to NG 9-1-1 data. Once standardized, this data will be shared via **ArcGIS Online (AGO)** allowing other county departments to easily access accurate and current geospatial information on multiple platforms including mobile devices located in emergency response vehicles.

This project proposal directly relates to the FY17 Land Plan Priority 1.A – Next Generation 9-1-1 Data Standardization. This project will result in the preparation of NENA compliant geospatial data for use in the County's PSAP. It will also document best practices that will benefit state, local government and private interests in the following ways:

- 1.) Carbon County will leverage AGO, ArcGIS Pro and the Collector app to enable staff to successfully prepare for and maintain NG 9-1-1 data. These software products provide a robust yet affordable solution to managing NG 9-1-1 data and require a smaller skill set compared to tradition ArcGIS Desktop and Server. We believe this project will serve as a model and solution for other small rural governments who are facing the issues surrounding NG 9-1-1 and lack dedicated GIS staff.
- 2.) Carbon County will collaborate with Teton County who is also interested in many of the same tools and workflows related to NG 9-1-1 presented in this proposal. Working together, we will share ideas and strategies on how to best leverage ESRI software to support NG 9-1-1 deployment in small county governments.
- 3.) Standardized and web accessible data will provide opportunities for publicly available NG 9-1-1 datasets to be published by employing the ESRI Open Data Portal. This will also serve as a model for other small rural governments who want to improve their response to citizen requests in an efficient manner despite limited local GIS staff time.
- 4) Finally, the work outlined in this proposal will allow for data sharing and collaboration with other neighboring counties, State, and Federal agencies. Data that meet national standards and are documented with metadata are more easily distributed and utilized by other cooperating agencies and organizations.

Scope of Work Narrative

GOALS, OBJECTIVES and TASKS

Goal 1. Make Carbon County GIS data NG 9-1-1 compliant

Objective A. Evaluate ESRI's LGIM for NENA compliance and make changes to file geodatabase as needed.

Task 1. Work collaboratively with Geodata Services, Inc. to evaluate ESRI's LGIM for compliance to NENA standards.

Task 2. Migrate Carbon's file geodatabase to the latest LGIM version using the ArcGIS Solutions Schema Migration Wizard.

Task 3. Make changes to LGIM schema as needed to comply with NENA standards

Task 4. Create FGDC compliant metadata for all NG 9-1-1 GIS layers.

Goal 2. Improve the accuracy of critical NG 9-1-1 GIS data layers

Objective A. Improve the spatial accuracy of structure points GIS data.

Task 1. Hire a temporary GIS technician to review and edit spatially inaccurate structure point features in the geodatabase. Using the most current imagery for the County, the technician will systematically review approximately 6,000 structure locations and re-position, where necessary, to improve spatial accuracy of this layer. Any missed structures will also be identified. Time estimated to complete review and edit is 120 hours.

Objective B. Conduct QA/QC on critical NG 9-1-1 GIS layers.

Task 1. Review and fix all topological errors that exist in administrative boundary layers including emergency service zones, fire districts, EMS service areas, law enforcement areas, community boundaries and road layers.

Task 2. Request and acquire CenturyLink and Nemont telephone records and compare customer addresses against the addresses contained in the GIS structure layer. Identify all errors and omissions between both datasets.

Goal 3. Publish, manage and update NG 9-1-1 compliant data in cloud server environment

Objective A. Publish NG 9-1-1 datasets to AGO and increase access by County personnel.

Task 1. Publish structures, road centerlines and other NG 9-1-1 related data to AGO.

Task 2. License five additional AGO seats from ESRI or explore ESRI's new Small Agency Program to expand its use to other County departments and first responders in County.

Task 3. Purchase one year licensing of GEO Jobe Admin Tools to assist with administration and management of data, users and groups in the AGO environment.

Task 4. Work with Geodata Services, Inc. to train on GEO Jobe Admin Tools and leverage its features to develop specific workflows to best manage NG 9-1-1 data in the AGO environment.

Objective B. Explore strategies using ESRI technologies to achieve common NG 9-1-1 goals.

Task 1. *Meet with Teton County staff to share ideas and workflows using AGO, ArcGIS Pro and Collector to achieve goals related to NG 9-1-1. The GIS Coordinator for Carbon County will travel to Choteau and spend 1 day to collaborate with staff. Estimated at 640 miles, 2 nights lodging and food.*

Objective C. Learn about and train on current GIS technologies

Task 1. *Attend technical workshops related to AGO, ArcGIS Pro and the Collector application at the 2016 ESRI User Conference. The GIS Coordinator for Carbon County will travel to San Diego, CA and attend the UC in June. Estimated airfare and 4 nights, lodging and food (shared expense with County).*

Objective D. Update the County's structure point data in the field in real time.

Task 1. *Purchase three iPad Air 128GB with Wi-Fi+cellular tablets with protective cases to collect field data by County personnel.*

Task 2. *Work with Geodata Services, Inc. to assist with training and deployment of tablets to update structure point attribute data (e.g., signed addresses,) and capture geotagged photos of structures.*

Objective E. Create citizen portal to review and validate addresses

Task 1. *Work with Geodata Services, Inc. to develop citizen-oriented Web app to allow County residents to lookup, review and request updates to physical addresses.*

Task 2. *Attend the Montana Association of Counties (MACO) meeting, September 2016 in Billings to serve on discussion panel for NG 9-1-1 implementation for Montana Counties. Estimated at 150 miles, 1 night lodging and food.*

PROJECT SCHEDULE

This project has a planned duration of twelve months starting in June 2016 and ending in May 2017. The following timeline shows the duration (by month) of the sixteen planned tasks.

Task	2016							2017				
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
G1-OA-Task 1. Evaluate LGIM compliance with NENA	■											
G1-OA-Task 2. Migrate Carbon LGIM to v10.3	■	■										
G1-OA-Task 3. Make changes to LGIM as needed		■	■	■	■	■						
G1-OA-Task 4. Create FGDG Compliant metadata				■	■	■	■					
G2-OA-Task 1. Hire GIS Tech to improve spatial accuracy						■	■					
G2-OB-Task 1. Fix topological errors in NG 9-1-1 data					■	■	■					
G2-OB-Task 2. Compare Telco addresses to GIS structure addresses						■	■	■	■			
G3-OA-Task 1. Publish NG 9-1-1 to AGO								■	■	■		
G3-OA-Task 2. License AGO seats		■										
G3-OA-Task 3. Purchase GEO Jobe Admin Tools		■										
G3-OA-Task 4. Train on GEO Jobe Admin Tools							■	■	■			
G3-OB-Task 1. Travel to Teton County				■								
G3-OC-Task 1. Attend ESRI UC	■											
G3-OD-Task 1. Purchase iPad Air tablets			■									
G3-OD-Task 2. Train on and deploy Collector app								■	■	■	■	■
G3-OE-Task 1. Create citizen portal to check addresses										■	■	■
G3-OE-Task 2. Travel to MACO to serve on panel				■								

Project Management and Organizational Capability Narrative

Carbon County has the project management and organizational capacity needed to complete this project on time and within budget. The following individuals offer a unique combination knowledge, technical skills and experience necessary to accomplish the objectives and tasks outlined in this proposal.

Tom Kohley – Carbon County Disaster & Emergency Services Coordinator and GIS Manager.

Mr. Kohley has provided GIS services for the County for the past nine years both as a consultant and now as full time employee. Mr. Kohley has 23 years of GIS experience and is registered as a GISP. He has developed nearly all the GIS databases for the County including the current E911 databases (structures, road centerlines, ESZ and MSAG). Mr. Kohley has managed five previous MLIA grants for both the County and the City of Red Lodge and is very familiar with the scope and grant requirements of the program. Mr. Kohley will serve as project manager and work closely with Geodata Services, Inc. to develop the necessary NG 9-1-1 compliant databases. He will also complete all necessary interim and final MLIA reports and deliver to the Montana State Library.

Angela Newell – Administrative Assistant to the Commissioners. Ms. Newell will serve as grant administrator and will be responsible for integrating the grant money into appropriate County budgets, preparation of grant reimbursement paperwork and final closeout of the grant in accordance with state and county standards. Ms. Newell has served as Administrative Assistant to the Commissioners for over 3 years. During that tenure, she has administered several grants for the County including the County's two previous MLIA grants awarded in 2011 and 2015. Ms. Newell successfully completed the Grant Writing USA workshop on grant management in 2013.

Geodata Services, Inc. was founded in 1993 and is headquartered in Missoula, Montana. Geodata provides multidisciplinary spatial analysis for federal, state, local and tribal government agencies; non-governmental organizations, schools and businesses and individuals in the private sector. Services include geographic information systems (GIS) data acquisition and analysis, web maps and applications, training, GIS systems development, geospatial business analysis, geospatial demographic and economic analysis. Geodata has been an ESRI business partner for 17 years. Geodata is Esri's only ArcGIS Online Specialty partner in Montana and one of 50 companies with this distinction in their worldwide network. Geodata staff have combined experience with GIS on hundreds of projects, ranging from statewide mapping to strategic business functions. They have provided leadership and guidance in planning and technical assistance for all the framework layers in Montana. They provided twice a year updates to the National Broadband Map for the states of Montana and North Dakota for a five year period from 2010-2015. Lead GIS analysts for Geodata have received many awards for their GIS work, including the 2008 Livable Communities award from the Montana Association of Geographic Information Professionals, and Northwest US new partner of the year in 2000, and northwest regional foundation business partner of the year for ESRI in 2008. Geodata staff hold GISP certification and CTT+ Technical Trainer certification. Ken Wall served three terms on MLIA and is currently serving as a Commissioner for the Montana State Library.

Budget Justification Narrative and Tables

The total budget for this project is \$26,857 with \$18,407 being requested from the MLIA grant program. The applicant will contribute and a cash and in-kind total of \$8,350 towards the project.

MLIA Share. The majority of the MLIA share (\$10,000) will be used to contract with the consultant partner, Geodata Services, Inc. which will include two on-site visits in Red Lodge.

\$2,100 of MLIA grant money will be used to purchase three, iPad Air 128GB tablets with WiFi+Cellular connectivity and protective cases. These tablets will be used for training and field data collection by County personnel.

Travel to Teton County by Tom Kohley to discuss and share GIS software strategies is estimated at \$532.

A seasonal GIS technician will be contracted or employed by the County to assist with data cleanup at a cost of \$1,800. We anticipate this individual working for 120 hours at \$15/hour.

\$800 of MLIA money will be used to support the attendance of Tom Kohley at the 2016 ESRI User Conference in Sand Diego, CA. Tom will take advantage of the technical workshop training offered at the conference to improve his skills in the area of ArcGIS Online, ArcGIS Pro and Collector to support NG 9-1-1 implementation.

\$500 will be used to license GEO Jobe Admin Tools for one year to assist with ArcGIS Online administration and management.

Finally, we are requesting \$175 to cover travel expenses associated with attending the MACO convention in September 2016 and participating in a panel discussion on NG 9-1-1 implementation.

Applicant Share. Carbon County will contribute cash and in-kind services valued at \$8,450. \$3,000 cash will be provided from recording fees collected by the County and will be used to pay for the services of Geodata Services, Inc. The County will also contribute \$300 to help pay for Tom Kohley's travel to the ESRI User Conference. In addition, the County will provide the following in-kind contributions:

- 10 hours at \$35 per hour (including fringe benefits) for grant administration to manage the budget and submit reimbursement paperwork (Angela Newell).
- 120 hours at \$40 per hour (including fringe benefits) for GIS database development and project management (Tom Kohley).

A long term funding plan for this project is not necessary. However, the County is committed to providing the necessary GIS resources and staff to maintain its NG 9-1-1 GIS layers in the interest of public safety.

Category	MLIA Share	Applicant Share	Total
a. Personnel			
Grant administrator	\$ -	\$ 350	\$ 350
GIS Coordinator / Project Mngr.	\$ -	\$ 4,800	\$ 4,800
b. Travel			
Teton County	\$ 532	\$ -	\$ 532
ESRI User Conference	\$ 800	\$ 300	\$ 1,100
MACO Conference in Billings	\$ 175	\$ -	\$ 175
c. Equipment			
iPad Air 128Gb Tablet (3)	\$ 2,100	\$ -	\$ 2,100
d. Supplies			
Misc. Supplies	\$ -	\$ -	\$ -
e. Contractual			
Geodata Services, Inc.	\$ 10,000	\$ 3,000	\$ 13,000
GIS Technician	\$ 1,800	\$ -	\$ 1,800
f. Other			
GeoJobe Admin Assistant	\$ 500	\$ -	\$ 500
ArcGIS Online (5 seat)	\$ 2,500	\$ -	\$ 2,500
Totals	\$ 18,407	\$ 8,450	\$ 26,857

Statements of Support



PO Box 201800, 1515 East 6th Avenue Helena, MT 59620 (406) 444-3115

February 16, 2016

Tom Kohley
Carbon County Disaster & Emergency Services
17 W 11th St. / PO Box 887
Red Lodge, MT 59068

Dear Tom:

As the Land Information Lead representing the MSDI theme leads for Structures/Addresses and Transportation, I strongly support Carbon County's effort to prepare for NG9-1-1 and their FY 2017 request for MLIA funding.

The 2016/2017 Montana Land Information Plan encourages data partners to apply for grant funds to assess, improve and maintain required NG9-1-1 data, including road centerlines, address points and jurisdictional boundaries, according to the NENA standards. Carbon County's grant proposal meets this goal by migrating to a NENA standards compliant database schema, assessing and improving existing structure point, road centerline, and boundaries datasets, and implementing new data maintenance and publishing workflows that will expand the use of the 9-1-1 datasets to other county departments and enable county residents to lookup, review and request changes to physical addresses.

The Montana State Library looks forward to working with Carbon County and will integrate the structures, road centerlines, and any relevant administrative boundaries data collected through this grant into the statewide Framework database.

Sincerely,

A handwritten signature in black ink that reads "Michael Fashoway".

Michael Fashoway
GIS Analyst/Land Information Lead
Montana State Library



Evan Hammer
Digital Information Manager & CIO
Montana State Library

I am writing in support of this proposal in our role as project partner and consultant. I have worked closely with Carbon County on this proposal and am prepared to provide technical support, GIS processing and training as they specified in their proposal. Our contribution differs in this proposal from the other FY 2017 NG 9-1-1 effort in Teton County, since Carbon County has GIS specialists on staff and does not require as much direct GIS consulting.

I am very excited about this project for Carbon County and their willingness to work with Teton County in collaboration on NG 9-1-1 efforts, building a start of an organized collaborative support structure for rural Montana counties. I am equally excited in the role this project will play for as a model for other local governments in Montana in a similar situation as Teton with local staff with little formal GIS training developing data and maintaining it for NG 9-1-1.

Although many Montana local governments use quality contractors that specialize in 911 systems, these are often large consulting firms with national scope, and no "boots on the ground" in the small rural Montana communities. In addition to the value of local knowledge in improving the quality of the rural addressing, street centerline, administrative boundaries and other NG 9-1-1 layers, implementing these supporting workflows in ArcGIS Online and ArcGIS Pro will help them interface with 9-1-1 contractors, save money, and allow them to leverage the data in many ways for their citizens and county operations that extend beyond 9-1-1 and emergency response.

It also provides a solid data model, workflow procedures, metadata, and data structures rooted in well accepted best practices, supporting Paul's efforts and an ideal solution to the recurring problem in these rural communities of having continuity and passing on data and procedures to future staff in his position.

Sincerely,

A handwritten signature in black ink that reads "Ken Wall". The signature is written in a cursive, slightly slanted style.

Ken Wall
President
Geodata Services, Inc.
P.O. Box 8081, Missoula, MT 59807

Renewable Grant Accountability Narrative

Not applicable as this proposal is not part of a continuing FY 2016 grant.

Signatures

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.

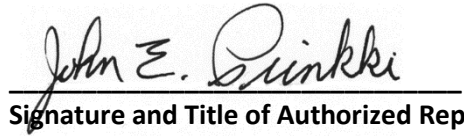
I further certify that I am (by my signature) authorized to enter into a binding agreement with the Montana State Library to obtain a grant if this application receives approval.

John E. Prinkki

Name (print or type)

Presiding Officer, Carbon County Board of Commissioners

Title (print or type)



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

February 16, 2016

Date