

**TETON COUNTY
NG 9-1-1 MSAG CHECK &
NENA CONVERSION**

**MONTANA LAND
INFORMATION GRANT
APPLICATION**

STATE FISCAL YEAR 2018

SECTION 1 – APPLICANT, PARTNER, AND PROPOSAL INFORMATION

Primary Applicant:	
Name of principal individual:	Paul Wick
Name of agency/entity:	Teton County
Street:	19 Main Ave South
City:	Choteau
County:	Teton
State:	Montana
Zip Code:	59422
Contact email address:	planning31@3rivers.net
Contact fax address:	406 466-2138
Contact phone:	406 466-3130
Department:	Planning and GIS
Division:	

Fiscal Year 2018 Montana Land Information Act Grant Application Package

Funding Partners:	
Name of contact:	Ken Wall
Name of Agency:	Geodata Services, Inc.
Street:	P.O. Box 8081
City:	Missoula
County:	Missoula
State:	Montana
Zip Code:	59807
Contact email address:	kwall@geodataservicesinc.com
Contact phone:	(406) 203-4684

Funding Partners:	
Name of contact:	Paula J. Jaconetty
Name of Agency:	Clerk and Recorder
Street:	1 Main Ave South
City:	Choteau
County:	Teton
State:	Montana
Zip Code:	59422
Contact email address:	paula@3rivers.net
Contact phone:	406-466-2693

Proposal Information	
Date Submitted:	February 14, 2017
Date Received by State:	
Short Title of Proposal: Teton County Next Generation 9-1-1 MSAG Audits & NENA Data Conversion	
<p>Executive Summary (<i>required – 200 maximum word count</i>):</p> <p>Teton County has been developing our road centerlines, structures, and administrative boundaries, to prepare for Next Generation 9-1-1. We received a MLIA grant in FY 2016-2017 to convert our data to the Esri local government information model, standardize our fire and EMS boundaries, and build a sustainable GIS foundation. This proposed project will accomplish the next phase, completing synchronization audits of our required NG 9-1-1 layers with the E911 tabular databases with the MSAG and ALI and adjusting our export processes and workflows to match the final National Emergency Number Association's (NENA) database standard. The project will expand the correction and spatial accuracy adjustments we made in 2017 in the county seat Choteau where structure and addressing was historically inaccurate, off by as much as 2 city blocks. We need to apply that process to the final two incorporated towns in the county, Fairfield and Dutton. We expect the final NENA data model will be released in final form during the FY 2017-2018, we will work with our consultant to finalize our NENA required data attributes and workflow to regularly convert our required layers to a NENA compliant dataset for Teton County DES.</p>	

List All Past Awarded MLIA Grants:
<ul style="list-style-type: none"> • Local Planning using GIS, FY 2010-2011 • Web GIS and ArcGIS Online Training and Collaboration with Blaine, Lincoln, Sanders County, FY 2014-2015 • Modernization of Teton County 9-1-1 GIS data and workflows, FY 2016-2017

SECTION 2 – RELEVANCE

The project directly relates to FY 2018 Land Plan Priority 1.A. Next Generation 9-1-1 Data Standardization in the FY 2017-2018 Land Plan.

Geographic Information Systems (GIS) is a critical part of the NG 9-1-1. Accurate and standardized geospatial data will be a core requirement of the solution, and keeping those data up to date in an efficient manner and developing and maintaining the ability to regularly convert our required local government data to a final NENA standard data format will be essential in a successful implementation of NG 9-1-1. Our geospatial data related to NG 9-1-1 will need to conform to those standards.

We are a small county with a part time GIS staff. The previous support from MLIA have been very beneficial in building support with our commissioners, sheriff and county staff. Working with our consultant and the Esri standardized tools has, for the first time in our county's history, provided an institutional geodatabase and system that has the ability to be sustainable and maintained over time. Completing the spatial adjustments in Fairfield and Dutton and the rigorous synchronization audits of the MSAG and ALI and process to convert our required layers to NENA NG 9-1-1 standards directly contribute to our ability to assess, improve and maintain NG 9-1-1 data. Geodata Services, a funding partner, will provide training and consulting on tools and best practices and assist us to synchronize our GIS files against the tabular enhanced 911 data to improve and maintain our Next Generation 9-1-1 data. Local control will enhance our sustained ability to contribute to the MSDI. This is the critical next step to move toward the self sufficiency and capacity for a sustainable GIS system to support NG 9-1-1 primarily from our local government share of the MLIA recordation fee.

SECTION 3 – PUBLIC BENEFIT

NG 9-1-1 dependence on GIS is a major challenge for rural areas. We have leveraged Esri commercial off-the-shelf software tools to build a sustainable and affordable system. NG 9-1-1 has provided the best opportunity in a generation to demonstrate the capability and value of GIS with direct bearing on public safety. We have used previous MLIA grants and our own matching budgets to correct and maintain our own road centerline, structures and jurisdictional boundaries. These tabular databases have not been systematically synchronized with our local GIS layers for a decade. This synchronization is critical to NG 9-1-1 and will have to remain synchronized in the future as local changes are made to the data. Syncing our administrative boundary lines will help our emergency responders be efficient and successful. This project is designed to help us accomplish that.

Starting a new GIS partnership with the City of Choteau Public Works Department will improve the Choteau structures and addressing data comparing our structures and addresses to their customer data. Geodata Services, a funding partner, will provide training and consulting on tools and best practices and assist us to synchronize our GIS files against the tabular enhanced 911 data and land line records to develop, improve and maintain our Next Generation 9-1-1 data.

As we continue to improve the spatial accuracy and data attribute completeness and accuracy for our road centerline files, addresses, structures, and administrative boundaries, with appropriate metadata, we will provide geodatabase updates to the MSDI data stewards and benefit the Montana MSDI infrastructure.

As we have demonstrated in the past, we will continue to share our results with other rural local governments through MAGIP conferences and workshops and the meetings of the Montana Association of Counties (MACO) to benefit other rural local government GIS and DES staff in Montana.

SECTION 4 – SCOPE OF WORK

Goal 1: Prepare spatial accuracy of structures and addresses in the incorporated towns of Fairfield and Dutton in preparation for conversion to NG 9-1-1.

Objective A: Expand the process followed in Choteau during our 2017 MLIA grant award and correcting approximately 900 structures and their addresses in Fairfield and Dutton. These data had been modified at some point in the past and were no longer aligned with their geographic base.

Tasks and Activities:

1. Uniquely identify structures from parcel centroids starting with the existing structures, cadastral, and transportation data themes. The road centerline files were inaccurate relative to the PLSS and georeferenced imagery. Geodata Services adjusted those during the work associated with the 2017 MLIA project. Structures were not moved or validated.
2. Move structures to building rooftops.
3. Cross walk cadastral address and assign to structures when possible.
4. Prepare map book for field verification.
5. Field verify addresses and structure locations and check and assign structure types from the domains maintained in the MSDI structure theme.
6. Import these corrected records into the master county file geodatabase.
7. Update feature layers for the master county geodatabase features.
8. Provide updates to the MSDI data stewards for annual theme updates.

Goal 2: Follow NENA best practices to synchronize our required NG 9-1-1 data layers with the authoritative sources currently used in Enhanced 911.

Objective A: Synchronize our road centerline, structures and administrative boundaries with the MSAG and ALI acquired from CenturyLink and West Safety Services.

Tasks and Activities:

1. Systematically review PLSS and parcel adjustments published by MSDI geodetic control and cadastral data stewards through the Catspaw program compared to our road centerline files. This work was done by the MSL and State of Montana, it was not funded with MLIA grants. The proximity and alignment are important in our ability to make decisions on how to store and carry our authoritative administrative boundary data and NENA best practices and requirements for attributing data attributes in the road centerline file relating to administrative boundaries.
2. Acquire the latest Master Street Address Guide (MSAG). This is the tabular version of the road centerline segments developed for Enhanced 911. Paul has been serving in this GIS capacity for 3 years, and was preceded by a series of staff in that position. Given problems we identified with our NG 9-1-1 GIS layers and are working on fixing in our 2017 MLIA award, indications are there are many differences that need to be synchronized.
3. Acquire the Telephone Number (TN) extract for the latest Automatic Location Identification (ALI). This is the database used by each local telephone exchange company to store phone records for land lines.
4. Process MSAG and ALI database from Centurylink and West Safety Services and perform database and GIS functions to create synchronization audits of the MSAG and

ALI with the road centerline, structures, and administrative boundaries. Synchronizing the ALI database and the MSAG with our local government GIS data is critical in today's 9-1-1 environment for these tabular databases to systematically check differences introduced over time. We know there are likely to be many differences. Based on the work we are doing through the current 2017 MLIA grant award to fix and adjust our road centerline and structures data, we anticipate issues. Paul Wick has been responsible for the MSAG updates on new structures and road segments for the last 3 years. Prior to that there were several years when no one was doing the updates to our knowledge. The Teton County sheriff contracts with Zuercher on E911 and they have not compared the MSAG or ALI against our local data. This step will include dozens of GIS processing steps and approximately 20 audit reports. The major categories of processing can be summarized as follows:

- a. Parsing, summarizing and internal data standardization, and tabular and spatial QA/QC within each data set.
- b. Geospatial and tabular comparison of the road centerline GIS file with the MSAG.
- c. Geocoding the addresses in the tabular ALI and geospatial comparison and QA/QC to the structures and structure addresses and road centerline address ranges.
- d. Parsing, summarizing and internal data standardization, and tabular and spatial QA/QC within each administrative boundary GIS layer and the ESN assignments in the MSAG and ALI.

We will be working with Geodata Services to assist us in defining these processing steps. They will provide GIS processing methods, models, scripts and standardized workflows related to the synchronization and associated audit reports. We plan to split the county road centerline file, structures and administrative boundaries into two halves, and split the processing labor.

5. Review digitizing direction in our road centerline layer against address ranges to review compliance with NENA best practices.
6. Create a queue of road centerline segments, addresses, and administrative boundary discrepancy corrections that are identified in the MSAG and ALI synchronization that will require field verification. The road centerline segments and the structures along them that are not coincident with administrative boundaries will not all be field verified during this grant period. We anticipate this will take place over the next few years. During this grant the field validation resolving differences in the MSAG and ALI will focus on the county seat of Choteau, which was a focus of data clean up and validation in our 2017 MLIA grant scope of work. Next in priority will be to resolve differences in Fairfield and Dutton, addressed in Goal 1. Rural portions of the county will be field verified in future years. Our contractor Geodata Services will develop procedures, scripts and workflows required to process the queue, and Teton County will be doing all the labor and work required to process the field validation queue.

Teton County did not have EMS boundary GIS files in the past. We developed initial EMS boundaries and refined fire boundaries as part of our 2017 MLIA grant. We used the MSAG to summarize and build the EMS boundaries from road segments, but did not attempt to synchronize them or run topology checks with the MSAG. Nor did we run the full suite of topology checks and audits to run the full audits required for NG 9-1-1 conversion. We also did not have access to the DNRC parcel based fire district boundaries and we plan to accomplish that comparison in this grant request.

7. Submit updated structures, road centerlines and administrative boundaries with metadata to MSDI data stewards.
8. Provide corrected EMS boundaries with metadata to MSDI boundary layer steward. Although this is not an official MSDI boundary, it can be made available on the Montana State Library GIS data list.

Goal 3: Adjust our NG 9-1-1 data schema and database to be fully compliant with the NENA data model.

Objective A: Make changes to our implementation of the Esri LGIM schema, and scripts and workflows to comply with final NENA standards and data model, and run processes to populate final NENA required data attribution.

Tasks and Activities:

1. Review the final NENA NG 9-1-1 geodatabase model and work with Geodata Services' recommendations to identify additional data attributes required for NENA NG 9-1-1.
2. We completed an initial crosswalk of LGIM to NENA template to match our data based on the draft NENA data schema and standard during our 2017 MLIA grant award. Update and make final modifications or additions based on the final NENA data model and schema in the final release.
3. Review and implement workflows required to process additional NENA required attribution, such as left and right road centerline ESN assignments. Our EMS boundaries will be based on our road centerline feature class where those boundaries follow roads. The left and right administrative boundary attributes required by NENA in these instances will be populated using geoprocessing tools and models. Incorporated town boundaries, the county boundary and fire districts are based on parcels and public land survey and have legal boundary and levy district characteristics. Where these boundaries follow roads, often the road centerline does not exactly match the road centerline file. These will require some manual procedures to populate the required NENA contiguity database assignments.
4. Work with Geodata Services to develop web applications to facilitate the collection of alias name tables for our road centerline and landmark layers. Develop procedures to incorporate alias name table into our GIS database.
5. Work with Geodata Services to develop an automated method for exporting our NG 9-1-1 data into a NENA compliant format.

Equipment – We have not included any equipment in this request.

Schedule and Timeline

GOAL/OBJ	TASK	Jul-17	Aug	Sept	Oct	Nov	Dec	Jan-18	Feb	Mar	April	May	June
Goal 1: Prepare spatial accuracy of structures and addresses in the incorporated towns of Fairfield and Dutton in preparation for conversion to NG 9-1-1													
Objective A: Expand the process followed in Choteau during our 2017 MLIA grant award and correcting approximately 900 structures and their addresses in Fairfield and Dutton. These data had been modified at some point in the past and were no longer aligned with their geographic base.													
Goal 2: Follow up our adjustment of NG 9-1-1 layers during FY 2017 MLIA award with process to synchronize these corrected layers with the authoritative sources currently used in Enhanced 911													
Objective A: Synchronize our road centerline, structures and administrative boundaries with the MSAG and ALI acquired from CenturyLink and West Safety Services.													
Goal 3: Adjust our NG 9-1-1 data schema and database to be fully compliant with the final NENA data model													
Objective A: Make changes to our implementation of the Eri LGIM schema, and scripts and workflows to comply with final NENA standards and data model, and run processes to populate final NENA required data attribution.													

We will implement a contract with Geodata Services on July 1, 2017 and begin work on the project. Teton County has legal authority to sole source to contractors for the amount we are proposing for a contract with Geodata Services. The initial Goal 1 tasks will commence during the first week of July. The results of this initial step, cleaned data in Fairfield and Dutton will be merged into our existing master structures and address geodatabase to be included in Goal 2 and 3 activities in mid-October.

Goal 2 will commence no later than August 1, 2017 with our request of the latest MSAG and ALI from CenturyLink/West Safety Services. The scripts, models and workflows will be developed by Geodata Services, and documented over the following four months with a deliverable of the synchronization audit toolkit by December 1, 2017. This will allow us time to continue to work through our field season with the field verification queue, primarily focusing on urban structures, road centerlines and jurisdictional boundaries for fire and emergency medical services. We anticipate implementing the remaining tasks in Goal 2 to complete the MSAG and ALI synchronization audit by March 15, 2018. The deliverables from this objective will include the field verification queue database for future field verifications and the updated MSDI geodatabase layers and metadata for road centerlines, structures, addresses and administrative boundaries provided to the MSDI data stewards by April 1, 2018.

Goal 3 objectives and tasks will begin no later than April 1, 2018 and will be completed by June 15, 2018 with the deliverable of a first generation Teton County NENA compliant geodatabase for NG 9-1-1 submitted to the Teton County DES and the Montana State Library GIS Coordinator.

SECTION 5 – PROJECT MANAGEMENT AND ORGANIZATIONAL CAPABILITY

This project will be managed and carried out by Paul Wick of the Teton County Planning Department. We also plan to work with Geodata Services who will provide consulting and project work. Paul and other Teton County staff, including Jim Hodgkiss, one of the county commissioners, attended the 50 weeks of two hour ArcGIS Online (AGOL) training and capacity building provided by Geodata Services for four rural Montana counties, funded by a FY 2015-2016 MLIA grant. This was general training on most aspects of AGOL and specific ArcGIS Desktop functions supporting AGOL. During our MLIA grant award in FY 2016-2017 we accomplished extensive work improving spatial data accuracy of the road centerline files in all urban areas of the county and structures and addresses in Choteau. We converted our data to the Esri local government information model and we leveraged Esri mobile tools with Collector deployed in every EMS vehicle on iPads accompanying and updated county map book. We have published a basic set of web maps and have started to see greater support and adoption by our elected officials and county staff. We have built a solid and sustainable foundation of local government GIS.

During our FY 2016-2017 grant we worked with Carbon County. They were interested in many of the same tools (ArcGIS Online and ArcGIS Pro) and workflows related to NG 9-1-1. Carbon County has the unique situation for a small rural county in Montana of having a very experienced GIS professional with more than two decades of experience. Carbon County also worked with Geodata Services on a MLIA project in 2017, but in a more limited capacity of consultation on best practices applying ArcGIS Online and ArcGIS Pro to NG 9-1-1 workflows.

We will continue to leverage these opportunities to network with other small rural Montana counties to build capacity across the state in preparing for and maintaining NG 9-1-1. Paul Wick, Teton County Planner and GIS Coordinator, along with Ken Wall, president of Geodata Services, participated in several outreach efforts demonstrating the public benefit of MLIA and MSDI themes. These included a presentation on MLIA projects to the 2015 MACO Annual Conference along with Stu Kirkpatrick, GIS Coordinator; a presentation to the Interim Legislative Subcommittee in August, 2016 on the value of MLIA along with Jennie Stapp, Montana State Librarian; and a presentation to the MLIA Council in their October, 2016 Council meeting.

Paul Wick - Teton County Planner and GIS Lead

Paul was the Weed District coordinator for Teton County for 15 years and used other GIS software to compile data for known infestations of invasive species and the treatment of these plants. He has used ArcGIS desktop, ArcGIS Pro, and ArcGIS Online and built basic ArcGIS skills in the past 5 years. His current duties include GIS management, rural addressing, subdivision review, and floodplain administration. Paul Wick also served as the project manager for the previous two Teton County MLIA grants in FY 2015-16 and FY 2016-17.

The administrator of this grant proposal has working relationships with Teton County EMS, the Sheriff and Fire Departments, as well as Geodata Services, formed in the previous grant that will be integral in making the 2017 grant successful. The previous grant experience along with

two years of hands on experience with rural addressing has Teton County well situated to administer and implement the goals and objectives of this proposal.

Geodata Services, Inc.

Geodata Services specializes in GIS services for local, state and federal governments, natural resource management, regional and community planning, and demographic and socioeconomic analysis. For 21 years Geodata Services has provided training and services in GIS including, spatial analysis, image analysis, database development, collaborative GIS, suitability modeling, and 3D scenario visualizations. Geodata Services has been an Esri business partner for 19 years, and has more than 60 years of combined experience with GIS.

Geodata Services has worked with ten previous successful MLIA projects, including two NG 9-1-1 MLIA projects in the 2017 fiscal year with Carbon and Teton counties. Geodata Services has presented testimony on behalf of the Montana State Library at interim legislative sessions demonstrating the effectiveness of the grant program and has presented at past MACO conferences on the success of the MLIA program.

The two primary staff who will provide training, consulting and support will be Ken Wall and Kyle Balke. Ken Wall has 25 years of experience in GIS experience, as founder and president of Geodata Services since 1993. Ken served on the MLIAC council for 6 years, and currently serves on the Montana State Library Commission. He served as a senior analyst for GIS projects throughout the US, Canada, and Australia. Geodata Services has been a business partner with ESRI for 18 years. Ken Wall has earned certification as an Esri Desktop Associate and served as a certified ArcGIS Desktop instructor, and is a CompTIA CTT+ Certified technical trainer. Geodata Services is the only ArcGIS Online Specialty Partner in Montana. Ken serves on the NENA NG 9-1-1 data review subcommittee, reviewing the current data standard.

Kyle Balke has 13 years of applied GIS experience in the local government, engineering, natural resources, and telecommunication fields. He has worked as a GIS analyst for firms in Wisconsin and Montana. His professional experience includes GIS data maintenance and editing, project development, CAD and GIS integration, geodatabase design, spatial and statistical analysis, web mapping and cartography. He has extensive expertise with the full suite of Esri GIS programs and modules, including ArcMap, Business Analyst, ArcGIS Online for Organizations, ArcGIS Pro and Spatial Analyst. For the last two years Kyle has taught a course on Internet GIS at the University of Montana focused on ArcGIS Online and ArcGIS Pro.

SECTION 6 – BUDGET JUSTIFICATION AND BUDGET TABLE

GOAL/OBJ	TASK	GEODATA HOURS	GEODATA BUDGET	GEODATA SUBTOTAL	Teton CO HOURS	TETON CO BUDGET	Teton Subtotal
Goal 1: Prepare spatial accuracy of structures and addresses in the incorporated towns of Fairfield and Dutton in preparation for conversion to NG 9-1-1.							
Objective A: Expand the process followed in Choteau during our 2017 MLIA grant award and correcting structures and their addresses in Fairfield and Dutton.							
	Uniquely identify structures from parcel centroids starting with the existing structures, cadastral, and transportation data themes.	4	\$ 300		4	86	
	Move structures to building rooftops.	4	\$ 300		4	86	
	Cross walk cadastral address and assign to structures when possible.	6	\$ 450		4	86	
	Prepare map book for field verification.	3	\$ 225		16	326	
	Field verify addresses and structure locations and check and assign structure types from the domains maintained in the MSDI structure theme.	1	\$ 75		60	1206	
	Import these corrected records into the master county file geodatabase.	1	\$ 75		4	86	
	Update feature layers for the master county geodatabase features.	1	\$ 75		6	126	
	Provide updates to the MSDI data stewards for annual theme updates	0	\$ -		6	126	
				\$1,500			\$2,128
Goal 2: Follow NENA best practices to synchronize our required NG 9-1-1 data layers layers with the authoritative sources currently used in Enhanced 911							
Objective A: Synchronize our road centerline, structures and administrative boundaries with the MSAG and ALI							
	Systematically review PLSS and parcel adjustments published by MSDI geodetic control and cadastral data stewards	4	\$ 300		12	246	
	Acquire the latest Master Street Address Guide (MSAG). This is the tabular version of the road centerline segments developed for Enhanced 911.	0	\$ -		2	46	
	Acquire the Telephone Number (TN) extract for the latest Automatic Location Identification (ALI).	0	\$ -		2	46	
	Process MSAG and ALI tabular database and synchronization audits with the road centerline, structures, and administrative boundaries.	24	\$ 1,800		180	3606	
	Review digitizing direction in our road centerline layer against address ranges to review compliance with NENA best practices.	8	\$ 600		16	326	
	Create a queue of road centerline segments and addresses discrepancy corrections that are identified in the MSAG and ALI synchronization that will require field verification and develop procedures, scripts and workflows required to process the queue.	16	\$ 1,200		24	486	
	Submit updated structures, road centerlines and administrative boundaries with metadata to MSDI data stewards.	4	\$ 300		2	46	
	Provide corrected EMS boundaries with metadata to MSDI boundary layer steward.	4	\$ 300		2	46	
				\$4,500			\$4,848
Goal 3: Adjust our NG 9-1-1 data schema and database to be fully compliant with the NENA data model							
Objective A: Make changes to our implementation of the Esri LGIM schema, and scripts and workflows to comply with final NENA standards and data model, and run processes to populate final NENA required data attribution.							
	Review the final NENA NG 9-1-1 geodatabase model and work with Geodata Services' recommendations to identify additional data attributes required for NENA NG 9-1-1.	4	\$ 300		4	86	
	Update and make final modifications or additions based on the final NENA data model and schema in the final release.	4	\$ 300		4	86	
	Review and implement workflows required to process additional NENA required attribution and populate the required NENA contiguity database assignments.	12	\$ 900		10	206	
	Develop procedures to incorporate alias name table into our GIS database.	4	\$ 300		24	486	
	Develop automated method for exporting our NG 9-1-1 data into a NENA compliant format.	8	\$ 600		8	166	
				\$2,400			\$1,076
				Geodata Labor Subtotal			Teton County Labor Subtotal
							\$8,052
				All Labor Subtotal			\$16,452
		SUPPLIES	AGO 5 seat	\$2,500			
		Travel	Paul Wick	\$800			
			OTHER SUBTOTAL	\$18,952			
			GRAND TOTAL	\$19,752			

The budget detail for this project is provided in the table above. The majority of the funding is for labor and consulting costs. We are requesting funding from MLIA to maintain an annual ArcGIS Online subscription from Esri for five named users for \$2,500 listed in the d. Supplies row of the MLIA Grant Budget Summary. Paul Wick is including \$800 of travel expenses in the county match for attending the MACO 2017 annual conference and the 2018 MACO mid year conference.

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The contract with Geodata Services for a total of \$8,400 would be split between two sources. \$6,400 request from MLIA and \$2,000 from the Teton County Clerk and Records office from the fund dedicated to GIS derived from a \$0.25 per page recordation fee that is paid to Teton County as a result of the Montana Land Information Act (local government portion of the total \$1/page fee). Although these funds could be used for any purpose, Teton County has reserved those for projects directly benefiting GIS in the county.

The in-kind match from Teton County applied to travel and labor by Paul Wick is outlined by goal, objective, and task in the budget narrative above. The value of geospatial data holdings is not considered appropriate for in-kind matches. The labor proposed by Paul Wick in this proposal does not include the value of the data holdings. The in-kind is for maintenance and updates resulting from field verification and from syncing the tabular E911 data with our required NG 911 data feature classes. The Teton County commissioners believe it is important to maintain local control in data development, and support this work preparing for NG 9-1-1. They have allocated Paul's time as specified through in-kind cash match to the project if it is funded.

We indicated in the project partner section that all of Geodata Services lump sum contract work will be for consulting personnel time. We did not subtotal this amount in the Total field to avoid double counting this contractual arrangement as specified in the Applicant summary.

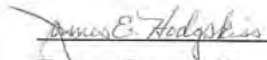
MLIA GRANT BUDGET SUMMARY										
Category	Applicant Summary					Project Partner* Summary				Total
	MLIA Share	Applicant Cash	Other Cash	In-kind	Applicant Subtotal	Partner 1	Partner 2	Partner 3	Partner Subtotal	
a. Personnel				\$ 5,636	\$ 5,636	\$ 8,400			\$ 8,400	
a. 1. Fringe Benefits				\$ 2,416	\$ 2,416					
b. Travel				\$ 800	\$ 800					
c. Equipment										
d. Supplies	\$ 2,500				\$ 2,500					
e. Contractual	\$ 6,400			\$ 2,000	\$ 8,400					
f. Other										
Total	\$ 8,900	\$ -		\$ 10,852	\$ 19,752					\$ 19,752

SECTION 7 – STATEMENTS OF SUPPORT

Teton County Planning Department
P.O. Box 610
Choteau, Mt. 59422
406 466-3130
planning31@3rivers.net

01/09/2017


The Teton County Board of Commissioners approves and supports the 2017 MLIA grant request of \$8,900.00 and Teton County will provide a match of \$2,000.00 for this grant. This has been voted on by the Board at a public meeting Feb. 9th 2017.



Teton County Commissioner

2-9-2017
Date

Teton County will provide cash match for this grant through the Teton County Clerk and Recorder's office and the recording fees designed for support of GIS work.



Teton County Clerk and Recorder

2/9/2017
Date

Submitted by Paul Wick/Teton County Planning Office



Erin Fashoway
State GIS Coordinator
Montana State Library

I am writing in support of this proposal in our role as funding partner and consultant. We have worked with Teton County on this project proposal and understand that we have been listed as a funding recipient. We support the project plan in the scope of work. Geodata Services is prepared to provide training and consulting to further the goals, objectives and tasks in the proposal. We understand that we are listed as a funding recipient for portions of the direct request from MLIA and are not providing any in-kind services. We are not providing data holdings or serving as a data provider for this project.

Sincerely,

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

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

SECTION 8 – RENEWABLE GRANT ACCOUNTABILITY

We received an MLIA award in in the FY 2017. That grant application and award was not a multi-year grant request. It will be completed June 30, 2017. It was, however, focused on data improvements and development for the road centerline, structure and addresses, and administrative boundaries that are the foundation of NG 9-1-1 and our contribution to the MSDI data framework. We attempted to clearly show in our scope of work for this FY 2017-2018 grant application where we were building upon and not duplicating the work accomplished in the FY 2016-2017 MLIA project.

For additional clarity we have prepared a table to document the differences in the FY 2016-2017 and the FY 2017-2018 projects and how we are proposing to build on the FY 2016-2017 project.

MLIA FY 2016-2017 PROJECT	MLIA FY 2017-2018 PROPOSED PROJECT
<p>Goal 1: Develop and migrate Teton County GIS data to a consolidated NG 9-1-1 compliant file geodatabase.</p> <p>Objective A: Create a file geodatabase schema based on draft NENA Next Generation 9-1-1 and Esri Local Government data models.</p> <p>Objective B: Load existing Teton County datasets into new file geodatabase schema.</p>	<p>We are not proposing any additional consulting or training time nor any project time to developing our Esri local government information model schema or database. We completed that in the previous project and are using the Esri LGIM in our regular workflows now. We based our customization of the LGIM on the DRAFT NENA data model. We anticipate the final NENA data model will be released in FY 2017-2018, and we want to Adjust our NG 9-1-1 data schema and database to be fully compliant with the final NENA data model. This is goal 3 in this current proposal. The LGIM is our working geodatabase, we intend to export it into the NENA format on an as needed basis. Once the NENA is finalized, we will need Geodata Services to finalize the scripts, procedures and workflows to semi-automate that process.</p>
<p>Goal 2: Develop standard workflows and procedures to update Teton County GIS data hosted on ArcGIS Online.</p> <ul style="list-style-type: none"> • Objective A: Publish NG 9-1-1 related datasets to ArcGIS Online • Objective B: Participate in Webex training 	<p>We are on schedule to complete all the objectives from the FY 2016-2017 project. We have built a solid GIS foundation for this and have implemented web map and app tools for data collection. We have deployed iPads in each EMS vehicle with Collector applications and base maps. In some cases we have gone beyond the training and capacity building that was the focus of FY</p>

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<p>sessions with Geodata Services</p> <ul style="list-style-type: none"> • Objective C: Create a standardized workflow and procedures document(s) that includes detailed steps on how to update data hosted on ArcGIS Online. • Objective D: Create an ArcGIS Online web application that allows EMS personnel to review and provide comments on EMS boundaries (e.g., Fire, Ambulance). • Objective E: Collect cell tower locations from various data sources including EMS groups, FCC ULS, and County records. • Objective F: Collect attribute information related to NG 9-1-1 datasets using Collector for ArcGIS. • Objective G: Integrate utility provider information with structure points • Objective H: Report to MSDI theme stewards 	<p>2016-2017. For example, we have applied these tools to working on field verification of road centerline, addresses and structures in Choteau, the largest town in Teton County. In Goal 1, Objective A in the FY 2017-2018 proposal we are proposing expanding this effort to the other two incorporated towns in Teton County, Fairfield and Dutton.</p> <p>The primary focus of the FY 2017-2018 proposal and largest task is to build on the foundational work we did in the previous year to improve the spatial and data accuracy of our required NG 9-1-1 data layers and compare our GIS data to the tabular data used in E911, the MSAG and ALI data. This is a recommended best practice by NENA and it has not been accomplished in Teton County for more than a decade.</p>
<p>Goal 3: Improve and enhance access to Teton County's NG 9-1-1 data.</p> <ul style="list-style-type: none"> • Objective A: Enable Teton County AGO Organizational Account. • Objective B: Enable EMS with digital and analog mapping tools. • Objective C: Enable and configure ArcGIS Online Open Data option for citizen and department access. 	<p>We are not requesting any additional training or consulting for improving access our data through ArcGIS Online. This was a key objective in FY 2016-2017. We put the skills and techniques we developed to deploy and update AGO maps from this proposed project using our own capacity.</p>
<p>Goal 4: Prepare documentation of processes and workflows to share with other rural Counties in Montana.</p> <ul style="list-style-type: none"> • Objective 1: Prepare materials and share with other rural local governments on developing and maintaining a NG 9-1-1 compliant database with ArcGIS Online and ArcGIS Pro. 	<p>We will continue to do this work of sharing our knowledge and experiences with other local governments in Montana and collaborating with them individually and in conferences and meetings such as MACO. We did not request consulting assistance for that task in the FY 2017-2018 proposal, but we will continue to update our peers and partners and share our experiences in completing the synchronization audits of our MSAG and ALI.</p>

SECTION 8 – 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.

PAUL Wick

Name (print or type)

TETON County Planner

Title (print or type)

Paul Wick

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

02/10/2017

Date

SECTION 9 – CHECKLIST – SIGNATURES REQUIRED

Initial or mark n/a	Completed Required Task
PW	Section 1 – Applicant, Partner, and Proposal Information
PW	Primary Applicant Information
PW	Funding Partner <i>(if applicable)</i>
PW	Project Partner <i>(if applicable)</i>
PW	Proposal Information
PW	List All Past Awarded MLIA Grants
PW	Section 2 – Relevance <i>(300 max word limit)</i>
PW	Section 3 – Public Benefit
PW	Section 4 – Scope of Work Narrative <i>(4-page limit)</i>
PW	Section 5 – Project Management and Organizational Capability Narrative
PW	Section 6 – Budget Justification Narrative and Table
PW	Budget Justification Narrative
PW	Complete Budget Table
PW	Section 7 – Statements of Support <i>(if applicable)</i>
PW	Section 8 – Renewable Grant Accountability Narrative <i>(if applicable)</i>