March 4, 2021

Alabama 9-1-1 Board
1 Commerce Street
Suite 620
Montgomery, AL 36104

RE: Next Generation 9-1-1 GIS RFP, AL-GIS-RFP-19-002

To Whom it May Concern:

Geo-Comm, Inc. (GeoComm), a 24-year industry provider specializing in public safety Geographic Information Systems (GIS) technology and services, respectfully submits a response to the Alabama 9-1-1 Board's RFP referenced above.

The enclosed proposal highlights our proposed project approach, experience with public safety GIS data, as well as our commitment to your success.

As a Next Generation 9-1-1 (NG9-1-1) leader in the public safety industry, GeoComm is a well-qualified firm and looks forward to a partnership with the State in the future. We have the ability to supply the requested products and services in the RFP and are willing to provide the products and services subject to the terms and conditions set forth in the RFP.

GeoComm acknowledges understanding of the general information presented in Section 1 and agrees with the requirements/conditions listed in Section 1. In addition, GeoComm accepts all mandatory contract terms as listed within the RFP:

- Duties of Contractor, Rate of Pay, and Term of Contract
- Authority to Bind Contractor
- Compliance with Laws
- Drug-Free Workplace Provision and Certification
- Employment Eligibility
- Funding Cancellation
- Governing Laws
- Indemnification
- Non-Discrimination Clause
- Ownership of Documents and Materials
- Payments

- Penalties/Interest/Attorney's Fees
- Termination for Convenience
- Non-Collusion and Acceptance

GeoComm requests modifications to the following non-mandatory clauses:

- **13. Continuity of Services:** ~~*C. The Contractor shall allow as many personnel as practicable to remain on the job to help the successor maintain the continuity and consistency of the services required by this Contract. The Contractor shall also disclose necessary personnel records and allow the successor to conduct on-site interviews with these employees. If selected employees are agreeable to the change, the Contractor shall release them at a mutually agreeable date and negotiate transfer of their earned fringe benefits to the successor.*~~
  - GeoComm requests to strike this language as it is not applicable to our proposed scope of work.

- **43. Termination for Default:** *A. With the provision of thirty (30) days' notice to the Contractor, the Board may terminate this Contract in whole or in part if the Contractor fails to:*
  1. *Correct or cure any breach of this Contract; the time to correct or cure the breach may be extended beyond thirty (30) days if the Board determines progress is being made and the extension is agreed to by the parties;*
  2. *Deliver the supplies or perform the services within the agreed time specified in this Contract or any extension; or*
  3. ~~*Make progress so as to endanger performance of this Contract; or*~~
  4. *Perform any of the other provisions of this Contract.*
  - GeoComm requests to clarify subsection 2 with the underlined inserted text.
  - GeoComm requests to strike subsection 3 as "make progress" is not defined.

Please do not hesitate to contact Tyler Thompson, Strategic Account Executive, with any questions throughout this evaluation process. He can be reached via email at tthompson@geo-comm.com, by telephone at (320) 281-2557, by fax at (320) 240-2389, or by mailing address 601 W St. Germain Street, St. Cloud, MN 56301.

Thank you for your consideration.

Sincerely,

Heather Hoskins

Heather Hoskins
Vice President of Finance and Administration

AL-GIS-RFP-19-002 ATTACHMENT B-BUSINESS PROPOSAL

Attachment B - Business Proposal

Instructions

Tab Name	Instructions
Business Proposal	Please fill in the cells shaded yellow and indicate if any attachments are included in the response to each item. Some items require a yes/no answer and an explanation if the answer is no.

AL-GIS-RFP-19-002 ATTACHMENT B - BUSINESS PROPOSAL

Respondent Name: Geo-Comm, Inc.

Please Complete Yellow Shaded Regions

2.3.1 GENERAL (OPTIONAL)

The Respondent may use this optional section of the business proposal to introduce or summarize any information the Respondent deems relevant or important to the State's successful acquisition of the products and/or services requested in this RFP.

Enter your response below. Please indicate if attachments are included.

Please see Attachment 1 General

2.3.2 RESPONDENT'S COMPANY STRUCTURE

The legal form of the Respondent's business organization, the state in which formed (accompanied by a certificate of authority), the types of business ventures in which the organization is involved, and a chart of the organization are to be included in this section. If the organization includes more than one product division, the division responsible for the development and marketing of the requested products and/or services in the United States must be described in more detail than other components of the organization.

Enter your response below. Please indicate if attachments are included.

Please see Attachment 2 Respondent's Company Structure

2.3.3 COMPANY FINANCIAL INFORMATION

This section must include the Respondent's financial statement, including an income statement and balance sheet, for each of the two most recently completed fiscal years. The financial statements must demonstrate the Respondent's financial stability. If the financial statements being provided by the Respondent are those of a parent or holding company, additional financial information should be provided for the entity/organization directly responding to this RFP.

Enter your response below. Please indicate if attachments are included.

GeoComm is a financially stable company with cash reserves larger than existing debt (seller notes). GeoComm has experienced double digit revenue and earnings before interest, taxes, and amortization (EBITDA) growth for the last several years, and expects the trend to continue through the next five years. Granite Equity Partners (GEP) is a majority owner of GeoComm, and will provide GeoComm access to additional cash, if needed. The growth expected due to the implementation of NG9-1-1 and the awareness of GeoComm's competitive advantage in GIS for NG9-1-1 is the primary reason GEP became a majority owner in GeoComm. GEP, the board of directors, and GeoComm's management continue to be committed to NG9-1-1 now and into the future.

2.3.4 INTEGRITY OF COMPANY STRUCTURE AND FINANCIAL REPORTING

This section must include a statement indicating that the CEO and/or CFO has taken personal responsibility for the thoroughness and correctness of any and all financial information supplied with this proposal. The particular areas of interest to the Board in considering corporate responsibility include the following items: separation of audit functions from corporate boards and board members, if any, the manner in which the firm assures board integrity, and the separation of audit functions and consulting services. The State of Alabama will consider the information offered in this section to determine the responsibility of the Respondent.

The Sarbanes Oxley Act of 2002, H.R. 3763, is NOT directly applicable to this procurement; however, its goals and objectives may be used as a guide in the determination of corporate responsibility for financial reports.

Enter your response below. Please indicate if attachments are included.

GeoComm's Vice President of Finance and Administration, Heather Hoskins, takes personal responsibility for the thoroughness and correctness of financial information supplied with this proposal. GeoComm's financial are audited by an audit firm, and GeoComm's investor, Granite Equity Partners, is also audited by a firm.

2.3.5 CONTRACT TERMS/CLAUSES

The contract resulting from this RFP will contain both mandatory and non-mandatory clauses. Mandatory clauses are non-negotiable while non-mandatory clauses are highly desirable. **Attachment A** contains a sample contract that will be similar to the one resulting from this RFP. Please indicate your acceptance of the following mandatory/non-mandatory clauses within the sample contract. If a non-mandatory clause is not acceptable as worded, please indicate in the "Additional Contract Considerations" and suggest a specific alternative wording to address issues raised by the specific clause in the explanation space provided.
To reiterate, it's the Board's strong desire to not deviate from the contract provided in the attachment and as such the Board reserves the right to reject any and all of these requested changes. Failure to include a clear, specific, unequivocal agreement to these clauses may result in disqualification of the proposal from further evaluation.

Mandatory Clauses	Acceptance? (Yes / No)	If No, Explanation
Duties of Contractor, Rate of Pay, and Term of Contract	Yes	
Authority to Bind Contractor	Yes	
Compliance with Laws	Yes	
Drug-free Workplace Provision and Certification	Yes	
Employment Eligibility Verification	Yes	
Funding Cancellation	Yes	
Governing Laws	Yes	
Indemnification	Yes	
Non-discrimination Clause	Yes	
Ownership of Documents and Materials	Yes	

Payments	**Yes**	
Penalties/Interest/Attorney's Fees	**Yes**	
Termination for Convenience	**Yes**	
Non-collusion and Acceptance	**Yes**	

Additional Contract Considerations ***Please note:*** *The Board will only review or negotiate changes to contract clauses clearly identified in the transmittal letter. If there are no contract clauses identified, Respondent is considered to have accepted the clauses as they are currently written.*	**Enter your response below. Please indicate if attachments are included.** Please see Attachment 3 Sample Contract Redlined

2.3.6 REFERENCES

The Respondent must include a list of at least three (3) clients for whom the Respondent has provided products and/or services that are the same or similar to those products and/or services requested in this RFP. Any state government for whom the Respondent has provided these products and services should be included; also to be included should be clients with locations near Alabama as site visits may be arranged. Information provided should include the name, address, and telephone number of the client facility and the name, title, and phone/fax numbers of a person who may be contacted for further information.

Reference One

	Enter your response below.
Legal Name of Company or Governmental Entity	**State of North Carolina**
Industry of Company	**Government Public Safety**
Mailing Address	**North Carolina 911 Board** **NC Department of Information Technology** **109 East North Street** **Raleigh, NC 27601**
Telephone Number	**919-754-6473**
Contact Name	**Pokey Harris**
Title	**Executive Director**
Telephone/Fax Number	**919-754-6621**
E-mail Address	**Pokey.harris@nc.gov**
Time period in which services were provided	**GeoComm's project with the State of North Carolina kicked off in April 2019; however, the contract wasn't formally signed until Mary 2019. The individual county onboarding started in June 2019 and will continue through December 2020 due to the GIS data assessment being completed as part of the onboarding process. During the GIS data assessment process, each of the counties are onboarded with GeoComm GIS Data Hub, which should begin to be fully utilized in June 2021. From June 2021 – May 2024, ongoing GIS data maintenance will be conducted to ensure the GIS data is continuously at the high level of GIS data accuracy needed for an NG9-1-1 environment.** **To date, this project is on track with the timeline proposed to the State of North Carolina.**
Please describe the service provided to this reference	**In 2019, GeoComm was selected by the North Carolina 911 Board for an NG9-1-1 GIS Project, aimed at preparing the State for an NG9-1-1 system implementation. This statewide NG9-1-1 GIS Project includes:** **•Statewide GIS educational campaign: This campaign was aimed at helping local agencies understand the goals of the statewide NG9-1-1 project, the processes that would be completed throughout the project, and the overall importance of the GIS data assessment phase. The educational campaign was completed throughout June 2019 when GeoComm completed four different sessions.** **•GIS data assessment: GeoComm is in the process of completing a GIS data assessment of each individual county's GIS data to determine its readiness for an NG9-1-1 system. The GIS data assessment analyzes their existing GIS data schema, helps them understand the National Emergency Number Association (NENA) NG9-1-1 GIS data model standards, and recommends GIS data improvement items for achieving public safety grade GIS data.** **•GeoComm GIS Data Hub: All of the participating North Carolina counties were onboarded to GeoComm GIS Data Hub for up to daily NG9-1-1 GIS data validation and aggregation of the data into a statewide dataset. Quality control check processing was also completed to provide data quality reports to each of the participating counties. In addition, GeoComm GIS Data Hub now transforms the various datasets into a common, usable schema for provisioning into the State's NG9-1-1 system. North Carolina joined a growing number of states entrusting GeoComm as their 9-1-1 GIS partner of choice to meet the demands of NG9-1-1.**

Reference Two

	Enter your response below.
Legal Name of Company or Governmental Entity	**Pennsylvania Emergency Management Agency** **(PEMA)**
Industry of Company	**Government Public Safety**

Mailing Address	Pennsylvania Emergency Management Agency 1310 Elmerton Avenue Harrisburg, PA 17110
Telephone Number	717-651-2218
Contact Name	Jeff Boyle
Title	Deputy Director for 9-1-1
Telephone/Fax Number	717-651-2218
E-mail Address	jeffboyle@pa.gov
Time period in which services were provided	The RFP was awarded for May 2019 – May 2020. GeoComm kicked off the project in May 2019 and completed it in December 2019, six months ahead of schedule.
Please describe the service provided to this reference	GeoComm was contracted to complete an NG9-1-1 Statewide GIS Data Gap Analysis project for the Pennsylvania Emergency Management Agency (PEMA). As the Commonwealth of Pennsylvania transitions to an NG9-1-1 environment, the need for a robust GIS environment at local, regional, and statewide agencies dramatically increases. PEMA, in consultation with the Pennsylvania GIS community, recognized the first step in their NG9-1-1 transition was to complete a Statewide GIS Data Gap Analysis. GeoComm worked with each of the 67 counties throughout Pennsylvania where they received the GIS data for each of the counties and completed field mapping. GeoComm then utilized GIS Data Hub to complete a GIS data analysis for each of the county's GIS data and generated a report outlining the quality of the data. Conference calls were then conducted with each of the counties to overview the results and outline next steps. In addition, an educational campaign initiative in each of the seven regions throughout Pennsylvania was conducted. The educational sessions provided local GIS agencies with information on: •NG9-1-1 GIS standards •GIS data requirements •A high-level overview of the county GIS data analysis •Workflow samples highlighting the importance of continual GIS data improvement and maintenance The information GeoComm provided PEMA throughout this project empowered them with a clear path for achieving an accurate and up-to-date statewide GIS dataset.

Reference Three

Enter your response below.

Legal Name of Company or Governmental Entity	Iowa Homeland Security and Emergency Management Department
Industry of Company	Government Public Safety
Mailing Address	Iowa Homeland Security and Emergency Management Joint Forces Headquarters 6100 NW 78th Ave Johnston, IA 50131
Telephone Number	515-323-4232
Contact Name	Blake DeRouchey
Title	E9-1-1 Program Manager
Telephone/Fax Number	515-323-4232
E-mail Address	Blake.derouchey@iowa.gov
Time period in which services were provided	GeoComm's contract with Iowa Homeland Security and Emergency Management is contracted through 2021. The project started in 2015 and GeoComm completed the project implementation phase on time in 2016 when it was transitioned to ongoing maintenance.

Please describe the service provided to this reference	**GeoComm has a long history of providing 9-1-1 related GIS services to local counties and jurisdictions in Iowa and has more recently been instrumental in the development of an NG9-1-1 GIS system for the State. GeoComm first worked with the Iowa Homeland Security and Emergency Management Department (HSEMD) to establish a set of NG9-1-1 GIS standards to normalize locally-maintained GIS datasets across the State.** **As part of this process, GeoComm performed an extensive GIS data analysis on each of the 99 Iowa counties' GIS data. In addition, GeoComm worked with each of counties to assess their existing GIS data, determining if it could be used in an NG9-1-1 system and would meet the minimum accuracy requirements. Once the initial GIS data review was completed, GeoComm recommended ways to fix any issues with the existing GIS data and ways the GIS data could be maintained.** **The GIS data layers from the local 9-1-1 entities were then combined into a single, statewide GIS dataset, hosted on a GeoLynx Server Web GIS Portal. As NG9-1-1 efforts continued, GeoComm worked with HSEMD to develop new workflows at the State and local levels, develop a quality assurance/quality control (QA/QC) plan to validate the accuracy and integrity of GIS data. The newly developed NG9-1-1 GIS standards were rolled out to local jurisdictions throughout the State in the form of an educational campaign. This campaign was co-hosted between GeoComm and HSEMD and contained series of informational webinars to educate local stakeholders about NG9-1-1 and the GIS standards being developed in the State of Iowa.** **This project developed a set of authoritative NG9-1-1 GIS standards which is used as the foundation for the statewide GIS dataset development. Today, GeoComm works with the State and local entities on-going to continually transform, QC, aggregate, QC, and report on the quality of the GIS data for the State's future NG9-1-1 system.**

Please identify all references for the past five (5) years for whom your company has provided the same or similar services as those requested in this RFP, but the contract was terminated for cause or for convenience.

Reference One

	Enter your response below.
Legal Name of Company or Governmental Entity	**Not applicable. GeoComm has not had any terminated contracts for cuase or convenience for similar services in the last five (5) years.**
Industry of Company	
Mailing Address	
Telephone Number	
Contact Name	
Title	
Telephone/Fax Number	
E-mail Address	
Time period in which services were provided	
Please describe the service provided to this reference	
Provide reason(s) for loss or termination	

Reference Two

	Enter your response below.
Legal Name of Company or Governmental Entity	**Not applicable. GeoComm has not had any terminated contracts for cuase or convenience for similar services in the last five (5) years.**
Industry of Company	
Mailing Address	
Telephone Number	
Contact Name	
Title	
Telephone/Fax Number	
E-mail Address	
Time period in which services were provided	
Please describe the service provided to this reference	
Provide reason(s) for loss or termination	

Reference Three

	Enter your response below.
Legal Name of Company or Governmental Entity	**Not applicable. GeoComm has not had any terminated contracts for cuase or convenience for similar services in the last five (5) years.**
Industry of Company	
Mailing Address	
Telephone Number	
Contact Name	
Title	

Telephone/Fax Number	
E-mail Address	
Time period in which services were provided	
Please describe the service provided to this reference	
Provide reason(s) for loss or termination	

Corporate Litigation

	Enter your response below. Please indicate if attachments are included.
Does your company have any pending litigation regarding contract disputes?	**No.**

2.3.7 REGISTRATION TO DO BUSINESS

	Registered? (Yes / No)	If No, Explanation
Respondents providing the products and/or services required by this RFP must be registered and in good standing with the Alabama Secretary of State. The requirement is applicable to all limited liability partnerships, limited partnerships, corporations, S-corporations, nonprofit corporations, and limited liability companies. Please indicate the status of registration.	**Yes**	

2.3.8 AUTHORIZING DOCUMENT

	Enter your response below. Please indicate if attachments are included.
Respondent personnel signing the Transmittal Letter of the proposal must be legally authorized by the organization to commit the organization contractually. This section shall contain proof of such authority. A copy of corporate bylaws or a corporate resolution adopted by the board of directors indicating this authority will fulfill this requirement.	Please see Attachment 4 Authorizing Document

2.3.9 SUBCONTRACTORS

	Enter your response below. Please indicate if attachments are included.
The Respondent is responsible for the performance of any obligations that may result from this RFP, and shall not be relieved by the non-performance of any subcontractor. Any Respondent's proposal must identify all subcontractors and describe the contractual relationship between the Respondent and each subcontractor. Either a copy of the executed subcontract or a letter of agreement over the official signature of the firms involved must accompany each proposal. Any subcontracts entered into by the Respondent must be in compliance with all State statutes, and will be subject to the provisions thereof. For each portion of the proposed products or services to be provided by a subcontractor, the technical proposal must include the identification of the functions to be provided by the subcontractor and the subcontractor's related qualifications and experience. The combined qualifications and experience of the Respondent and any or all subcontractors will be considered in the Board's evaluation. The Respondent must furnish information to the Board as to the amount of the subcontract, the qualifications of the subcontractor for guaranteeing performance, and any other data that may be required by the State. All subcontracts held by the Respondent must be made available upon request for inspection and examination by appropriate Board officials, and such relationships must meet with the approval of the Board. At a minimum, the Respondent must furnish information for each portion of the proposed to be used in providing the required products and services B. Each subcontractor's area(s) of responsibility under the proposal C. The anticipated dollar amount for each subcontract D. Each subcontractor's form of organization E. An indication from each subcontractor of a willingness to carry out their responsibilities (this assurance in no way relieves the Respondent of any responsibilities in responding to this RFP or in completing the commitments documented in this proposal) F. The qualifications of each subcontractor for guaranteeing performance G. Identification of the functions to be provided by the subcontractor and the subcontractor's related qualifications and experience in the technical proposal for each portion of the proposed products or services to be provided by the subcontractor H. Any other data that may be required by the State	Please see Attachment 5 Subcontractors

2.3.10 GENERAL INFORMATION

Business Information

	Enter your response below.
Legal Name of Company	**Geo-Comm, Inc.**
Contact Name	**Tyler Thompson**
Contact Title	**Strategic Account Executive**
Contact E-mail Address	**tthompson@geo-comm.com**
Company Mailing Address	**601 West St. Germain Street**
Company City, State, Zip	**St. Cloud, MN 56301**
Company Telephone Number	**320-240-0040**
Company Fax Number	**320-240-2389**
Company Website Address	**www.geo-comm.com**
Number of Employees (company)	**100**

Years of Experience	**24**
Number of U.S. Offices	**Two – located in St. Cloud, Minnesota, and Albany, Oregon, with multiple home offices across the country.**
Year Alabama Office Established (if applicable)	**N/A**
Parent Company (if applicable)	**Granite Equity Partners**
Revenues ($MM, prior year)	**GeoComm is a privately owned company so in order for this confidential information to be excluded from public disclosure revenue information will only be provided upon email request to Heather Hoskins, Vice President of Finance and Administration, hhoskins@geo-comm.com.**
Revenues ($MM, two-years prior)	**GeoComm is a privately owned company. In order for this confidential information to be excluded from public disclosure, revenue information will only be provided upon email request to Heather Hoskins, Vice President of Finance and Administration, hhoskins@geo-comm.com.**
% Of Revenue from Alabama customers	**GeoComm is a privately owned company. In order for this confidential information to be excluded from public disclosure, revenue information will only be provided upon email request to Heather Hoskins, Vice President of Finance and Administration, hhoskins@geo-comm.com.**

	Yes / No	**If No, Explanation**
Does your company have a formal disaster recovery plan? If no, please provide an explanation of any alternative solution your company has to offer. If yes, please note and include as an attachment.	**Yes**	

	Enter your response below. Please indicate if attachments are included.
What is your company's technology and process for securing any Board or private information that is maintained by your company?	As with each GIS Data Hub deployment to date, special consideration of system security has been taken with every aspect of the proposed system. GeoComm uses NENA security standards and the NENA Next Generation 9-1-1 Security (NG-SEC) Audit Checklist as a baseline for system design. GIS Data Hub is aligned to federally and internationally recognizable security standards. GeoComm is committed to incorporating applicable security standards as they are made available and will dedicate time to understanding the effect emerging and upcoming have on the system proposed to the State. Further, as part of GeoComm's software development methodology, period static code scans and operational penetration tests are executed to proactively monitor and correct security risks or vulnerabilities before applications are deployed in production environments. NENA Standards Compliance GeoComm's software has been designed to meet the NENA Security for Next-Generation 9-1-1 Standard (NG-SEC) and is continually reevaluated against the NENA NG SEC checklist. GeoComm is and has been actively engaged in the following NENA standards setting workgroups: •Site Structure Address Point Workgroup Participant •GIS Data Stewardship for NG9-1-1 Workgroup Participant •ECRF/LVF Workgroup Chair •Additional Data Workgroup Co-chair •GIS Data Model for NG9-1-1 Workgroup Participant •NG9-1-1 PSAP Systems Workgroup Participant •NG9-1-1 i3 Architecture Workgroup Participant •NG9-1-1 Management Considerations for Emergency Incident Data Document (EIDD) Interoperability Joint NENA/APCO Workgroup Participant GeoComm is actively engaged in various industry organizations as members, sponsors, and workgroup participants and leaders. Our focus and commitment to the industry is strong as evidenced by the continual

2.3.11 EXPERIENCE SERVING STATE GOVERNMENTS

	Enter your response below. Please indicate if attachments are included.
Please provide a brief description of your company's experience in serving state governments and/or quasi-governmental accounts. Disclose each state or jurisdiction in which Respondent does business or holds contracts to provide goods or services and the nature of each such business or contract.	Please see Attachment 6 State Governments Experience

2.3.12 EXPERIENCE SERVING SIMILAR CLIENTS

	Enter your response below. Please indicate if attachments are included.
Please describe your company's experience in serving clients of a similar size to the State that also had a similar scope. Please provide specific clients and detailed examples.	Please see Attachment 7 Similar Clients Experience

Attachment 1 General

Executive Summary

The following proposal describes a proven approach to successfully procure and maintain the statewide Geographic Information System (GIS) components within the Alabama Next Generation Emergency Network (ANGEN) Next Generation 9-1-1 (NG9-1-1) system. As the foundation of NG9-1-1, a robust and accurate statewide GIS dataset is required to support the State's current 9-1-1 Plan. This proposal outlines the steps required to develop a statewide dataset for geospatial call routing with an Emergency Call Routing Function (ECRF). This includes merging data from local GIS data authorities, providing data quality assurance and quality control (QA/QC) measures, and provisioning GIS data to the ECRF and LVF via GeoComm Spatial Interface.

GeoComm is uniquely qualified to meet the state's NG9-1-1 GIS data goals. With extensive project experience in the NG9-1-1 industry, a project team of experts responsible for shaping NG9-1-1 GIS data standards, and deployment of GeoComm ECRF in three customer sites, we possess the most knowledgeable, experienced, and well-rounded project team of any vendor in the industry.

Moving to an NG9-1-1 GIS system from existing legacy 9-1-1 databases is an essential goal for the State of Alabama. With new technologies and new standards come new challenges not previously present in legacy systems. Partnering with a trusted vendor who brings the experience, knowledge, and technology necessary to support the State's NG9-1-1 GIS goals will alleviate challenges which may arise while undertaking your project. The proposed project approach will accomplish your goals with minimal risk to schedule, budget, and quality.

Geo-Comm, Inc. (GeoComm) has carefully reviewed the RFP to understand your goals and system requirements and believe we are best suited to be the trusted partner you need to successfully meet your Next Generation 9-1-1 GIS goals. With a proven track record providing similar services and technologies at state and regional levels, we believe partnering with GeoComm to achieve your goals would provide you the following benefits:

- Having access to a team of knowledgeable and seasoned GIS professionals solely focused on GIS for 9-1-1; the largest such team in the industry
- A project approach based on experience working with eleven states implementing similar NG9-1-1 GIS programs; including Maine, Washington, Texas, Iowa, South Dakota, North Dakota, Kansas, New York, New Hampshire, Vermont, Washington, California, and North Carolina; and multiple metro regions across the country
- Working with a vendor who is the only Esri Platinum Tier Partner (the top tier partner level) solely focused on Public Safety and 9-1-1
- A vendor who has the most experienced 9-1-1 GIS team in the country, understanding the GIS needs at local and state levels

Proposed Solution

The core component to the proposed solution is GeoComm GIS Data Hub (GIS Data Hub). GIS Data Hub is a hosted GIS data management solution specifically developed for ongoing GIS data processing, transformation, QC, reporting, and merging. It is an intuitive, easy to use web-based application designed for users with varying levels of GIS knowledge. We have compiled an experienced project team to work alongside stakeholders to deliver professional services to support a successful system deployment. The proposed project includes the following services

- NG9-1-1 GIS Data Management Workflows review and development to incorporate GIS Data Hub
- Statewide Educational Campaign to bring project awareness to local GIS data authorities throughout the state
- A robust training plan to support system users with varying levels of GIS expertise
- Ongoing support services to ensure the State's NG9-1-1 GIS development and maintenance investment is successful into the future

For PSAPs with existing GIS support and capabilities, GIS Data Hub does not change their current operations, and they can continue to use their existing systems. GIS Data Hub will augment their existing workflows to provide data assessment and reporting on their entire GIS dataset or specific layers they are enhancing. In addition, for those PSAPs with limited or no GIS support, our solution is simple to use. Our training will take the anxiety out of GIS data submission, and we can support individual PSAPs for GIS data acquisition, improvement, and maintenance.

In addition, should PSAPs require professional services to update their GIS data based on QC error reports from GIS Data Hub, GeoComm will work with these PSAPs to resolve data condition errors which would prevent successful NG9-1-1 geospatial call routing. It is understood this need may vary from PSAP to PSAP. GeoComm is committed to working with any and all PSAPs who require assistance updating their GIS data.

Optional GIS Data Management Tools

In addition, this proposal includes optional GIS data management tools which local agencies could leverage to develop, update, and maintain their GIS data. These tools have been developed by GeoComm to streamline GIS data management tasks. When paired with GIS Data Hub, they provide a complete, end-to-end GIS data management tools suite. These tools include:

- **GeoComm Submitter**: Provides an additional method to easily access GIS Data Hub and submit data in the fewest steps possible; an add-in for Esri ArcGIS Desktop
- **GeoComm Resolver**: "One-stop issue resolution shop" for GIS data maintainers and other stakeholders; consumes GIS Data Hub validation fallout lists; flexible, easy-to-use application accessed from Esri ArcGIS Desktop
- **GeoComm Contributor**: Cloud-hosted application leveraged by outside users (non-data maintainers) to submit comments and data addition, deletion, and modification requests to GIS data maintainers for incorporation into the master GIS dataset; designed to be

easily used by users with minimal or no training; configurable to generate two-way dialogue between users submitting information and contributions to the GIS dataset and the users maintaining the master GIS dataset.

- **GeoComm Maintainer GIS Data Manager**: Esri-based GIS Data Management toolbar geared specifically for updating GIS data layers used in public safety mapping applications, such as road centerlines, address points, wireless cell sectors, community boundaries, and emergency response zones; deployed directly within your ArcGIS Desktop environment, exposing features and functions to increase the efficiency of GIS data editing tasks; QC audits to help keep data synchronized and free of errors
- **GeoComm Maintainer MSAG Manager**: Add-on module to GeoComm Maintainer; used for building and updating the MSAG; a means to better manage the MSAG and GIS data synchronization levels

Subcontractor Engagement

GeoComm has engaged the services and expertise of Applied Geographics, Inc. (AppGeo) to work alongside GeoComm's project team to ensure we can successfully meet and exceed your project requirements. The partnership with AppGeo will leverage their expertise and provide support throughout various project phases, including workflow review and development, working with local jurisdictions to review data QC results, and system and process training. GeoComm and AppGeo have a proven, successful working relationship collaborating on NG9-1-1 GIS data readiness projects. Most recently, GeoComm and AppGeo completed an NG9-1-1 Gap Analysis project for the Pennsylvania Emergency Management Agency (PEMA) in budget and ahead of schedule.

Conclusion

The following proposal reflects the State's RFP requirements and underscores our over two decades of industry experience providing GIS for the public safety industry, specifically 9-1-1. The effort we put forth is done with an exclusive purpose: keeping people and their property safe. This focus is what sets GeoComm apart from other respondents. Our commitment to customers and the people they serve, along with our invaluable experience provides peace of mind not found anywhere else in the industry.

Attachment 2 Respondent's Company Structure

GeoComm Background and Experience

GeoComm, a Granite Equity Partners company, was founded in Minnesota on May 18, 1995 to provide local governments with turnkey emergency 9-1-1 software and GIS services. Over the subsequent 24 years, the company has grown to serve emergency professionals in over 1,000 Public Safety Answering Points (PSAPs) throughout the United States, helping to keep more than 100 million people safe. Today, GeoComm has a national reputation as a leading provider of public safety GIS software solutions and services. GeoComm is a Minnesota privately held C-Corporation.

Since being founded, we have assisted our customers to implement public safety grade GIS solutions that include data development, maintenance services, mapping and dispatch applications, and NG9-1-1 core components such as ECRF, LVF, Spatial Interface (SI) and data validation solutions. Our professional staff has diverse, comprehensive industry experience from their public safety involvement dating back to the advent of basic 9-1-1. This experience has grown substantially as we assisted hundreds of jurisdictions across the nation to deploy Enhanced 9-1-1 (E9-1-1) software and services. It continues to evolve today through innovation, customer engagements and active participation in industry groups who are helping to shape the future of NG9-1-1.

Next Generation 9-1-1

Over the last several years, GeoComm has become a proven provider of end-to-end GIS systems tailored to meet the needs of public safety agencies moving to NG9-1-1. GeoComm offers NG9-1-1 specific software and services, including NG9-1-1 GIS data assessment and development; GIS workflow consulting; software to maintain, manage, and provision NG9-1-1 GIS data; the Emergency Call Routing Function and Location Validation Function (ECRF/LVF) elements of the ESInet (Emergency Services IP Network), and tactical mapping for emergency responders and 9-1-1 Centers. GeoComm's solutions provide the tools necessary to geospatially route 9-1-1 calls, speed and enhance emergency response, improve data accuracy and quality, accelerate communications, and provide mission critical GIS-based decision support. GeoComm was first to demonstrate geospatial wireless call routing in 1999 at the APCO International Conference in Minneapolis, MN. This ground-breaking experience has helped shape our NG9-1-1 solutions portfolio and makes GeoComm the most experienced solutions provider in the industry today.

Our NG9-1-1 products and services have been delivered to states across the country, including Maine, New York, Vermont, North Carolina, Pennsylvania, North Dakota, South Dakota, Iowa, Kansas, Texas, California, and Washington. Of specific similarity to the project proposed to the State are the projects we executed with the states of North Carolina, Pennsylvania, North Dakota, South Dakota, Iowa, Texas, California, and Washington. In each case, our dedicated team of GIS and Implementation professionals worked to achieve NG9-1-1 GIS data readiness across the state.

Public Safety GIS and Project Management Consulting Services

GeoComm's GIS Project Management team provides exceptional, client-specific consulting and project management services to assist public safety agencies in making informed decisions for developing and/or improving GIS services for their communities. This team is composed of industry-recognized professionals and subject matter experts who have successfully completed various projects across the country. GeoComm listens objectively to the goals and requirements of our client's specific project. Then, we outline tailored recommendations and practical implementation steps to meet our client's project goals.

Esri Partnership

GeoComm is an Esri Platinum Partner, a leading innovator on Esri technology mapping the future of NG9-1-1. As one of 15 Esri Platinum Partners worldwide and the only public safety Platinum Partner, we have a unique understanding of how to maximize the value GIS can bring to public safety.

Public Safety GIS Applications

GeoComm develops software products for quickly accessing needed GIS data, viewing map data, and editing regional data sets efficiently. GeoComm has been at the forefront of integrating GIS into other public safety systems for years – it is what we do. The products we offer are considered "best of breed" in the public safety industry and integrate with key systems, such as on premise or cloud-based Customer Premise Equipment (CPE) and Computer Aided Dispatch (CAD) systems. Our products include:

- Enterprise Public Safety GIS Data Management
  - GeoComm Maintainer for Desktop Data Management (GIS data creation and editing)
  - GeoComm GIS Data Hub for GIS data validation, merging, reporting and provisioning
  - GeoComm Contributor (cloud-based editing and feedback tools for non-GIS users)
  - GeoComm Resolver (workflow to enable GIS analysts to focus on the highest priority areas for data improvement (error types/locations)
  - GeoComm Submitter (packaging tool for submitting GIS data to the GIS Data Hub)
  - GeoComm Spatial Interface (SI)
- GeoComm Dispatch Map
- GeoLynx Server Tactical PSAP Mapping
  - Vehicle Tracking (AVL)
  - GeoLynx Mobile Server Edition
- GeoLynx Mobile Tactical Responder Mapping
  - GeoLynx Mobile MDC Edition
- GeoComm ECRF and LVF for Emergency Call Routing Function and Location Validation Function respectively
- MCS – MSAG Conversion Services
- Industry Leadership

GeoComm is actively engaged in industry organizations as members, sponsors, and workgroup participants and leaders. Our focus and commitment to the industry is strong and is evidenced by our continual involvement at a collaborative standards level.

9-1-1 Industry Associations Involvement

We are actively involved in the following 9-1-1 associations:

Association/Influencers	GeoComm Involvement
Association of Public Safety Communication Officials (APCO)	Participation as an exhibitor and presenter at the annual conference. Attendance at the Emerging Technology Forum. GeoComm staff members serve on State level Executive Boards and function as the Chapter Commercial Advisory Member (CCAM).
Esri	In March 2011, GeoComm became an Esri Platinum Tier Partner. Platinum Tier Partners, the highest of three tiers in the partner network, are recognized for developing and delivering industry-leading GIS solutions and services on the ArcGIS software platform. As a Platinum Tier Partner, GeoComm maintains a high level of collaboration with Esri and allows us to be involved with the direction for their future product development. Through the Esri Platinum Partner, GeoComm is involved with the Esri Partner Conference, Esri User Conference, Business Partner Conference, Developer's Conference, National Security Public Safety Summit, Technical and Business Meetings, Regional GIS meetings, and CTO Committee.
iCERT (Industry Council for Emergency Response Technologies)	GeoComm has been an iCERT member since 2009. Through our involvement in iCERT, we support efforts to: • Assure adequate funding for 9-1-1 • Conduct scientific research which benefits the public by implementing improved emergency response technology • Bring together industry leaders to maximize the value of research and development investment • Represent the industry before the public and governmental bodies • Work with officials from organizations such as the NENA, National Association of State 9-1-1 Administrators (NASNA), and APCO.
NENA (National Emergency Number Association)	• NENA member • NENA Next Generation Partner Program member • Member of several past and current NENA workgroups, including: o Site Structure Address Point Workgroup Participant o GIS Data Stewardship for NG9-1-1 Workgroup Participant o ECRF/LVF Workgroup Chair o Additional Data Workgroup Co-chair o GIS Data Model for NG9-1-1 Workgroup Participant o NG9-1-1 PSAP Systems Workgroup Participant o NG9-1-1 i3 Architecture Workgroup Participant o NG9-1-1 Management Considerations for Emergency Incident Data Document (EIDD) Interoperability Joint NENA/APCO Workgroup Participant

Association/Influencers	GeoComm Involvement
NG9-1-1 Institute	GeoComm is a Bronze NG9-1-1 Institute Supporter. GeoComm attends the Technology Showcase and 9-1-1 Honor Awards.
NSGIC (National States Geographic Information Council)	GeoComm is a Gold NSGIC Sponsor. GeoComm provides an annual educational webinar to the NSGIC membership and attends the Annual Conference, Midyear conference, and serves on the NG9-1-1 Committee.
URISA (Urban and Reginal Information Systems Association)	GeoComm attended the GIS-Pro 2017 Conference for GIS Professionals.

NENA Industry Collaboration Events

GeoComm has participated in all NENA Industry Collaboration Events (ICE) as event participants and event leaders where ECRF, LVF, and Forest Guide were tested. Bilateral tests between GeoComm's components and other vendor systems proved where the standards worked to support interoperable implementations between vendors and identified gaps and ambiguities in the standards that could hinder interoperability.

Public Safety Industry Event Participation

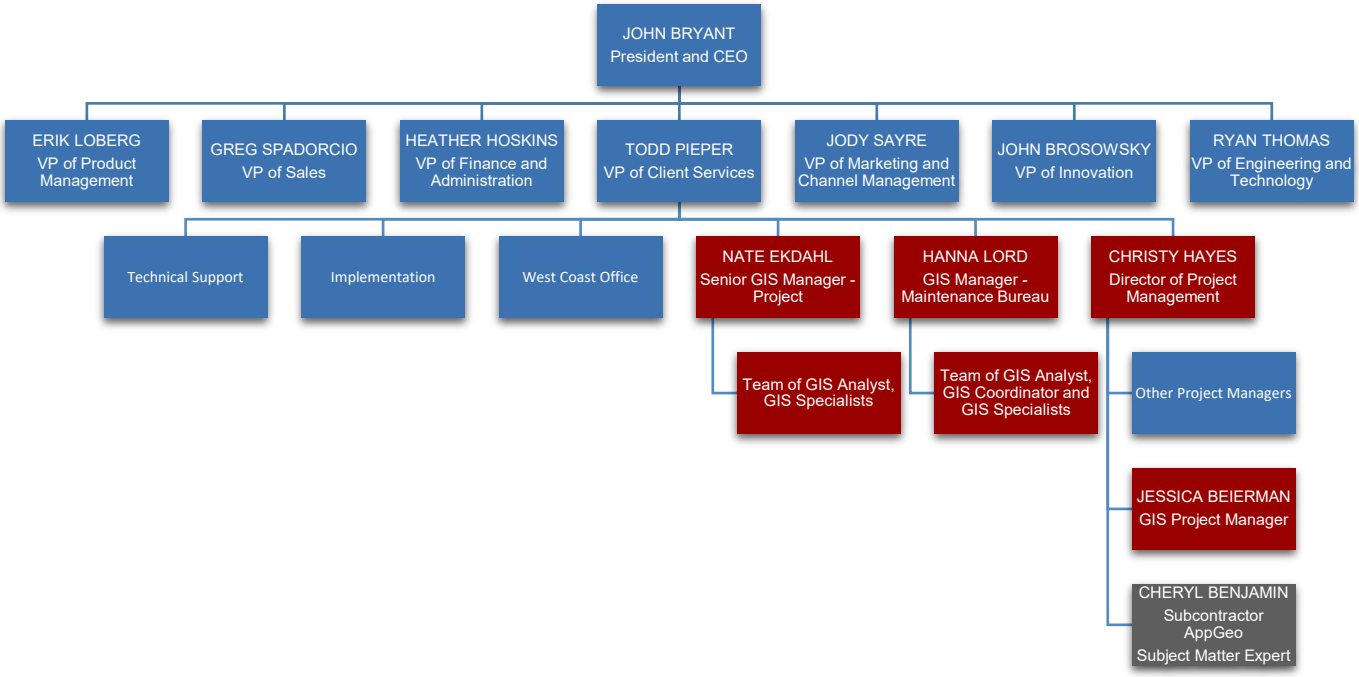
GeoComm's Industry Event Participation extends nationwide and into nearly every state NENA and/or APCO chapter. In addition, GeoComm participates in 9-1-1 Goes to Washington, the Annual NENA Conference, the International APCO Conference, and the Esri User Conference. This broad participation provides us with not only specific local understanding but allows us to synthesize a picture of GIS data requirements nationwide.

Emergency Number Professional Certifications

GeoComm's commitment to the industry and to NG9-1-1 is also evidenced in our commitment to having team members trained and certified as Emergency Number Professionals (ENPs). GeoComm currently employs sixteen (16) certified ENPs.

Organizational Chart

The organizational chart on the following page is an excerpt of GeoComm's full organization, focusing on the Client Services division. Team resources shown in red and grey will be directly responsible for completing the State's project.



Certificate of Authority

GeoComm's certificate of authority is included on the following pages.

John H. Merrill
Secretary of State

P. O. Box 5616
Montgomery, AL 36103-5616

STATE OF ALABAMA

I, John H. Merrill, Secretary of State of Alabama, having custody of the Great and Principal Seal of said State, do hereby certify that

as appears on file and of record in this office, the pages hereto attached, contain a true, accurate, and literal copy of the Articles of Formation filed on behalf of Geo-Comm, Inc, as received and filed in the Office of the Secretary of State on 10/15/2002.

In Testimony Whereof, I have hereunto set my hand and affixed the Great Seal of the State, at the Capitol, in the city of Montgomery, on this day.

12/17/2019

Date

John H. Merrill Secretary of State

20191217000011892

FILED IN OFFICE

OCT 15 2002

SECRETARY OF STATE

STATE OF ALABAMA

APPLICATION FOR CERTIFICATE OF AUTHORITY OF A FOREIGN CORPORATION TO TRANSACT BUSINESS IN ALABAMA

TO THE SECRETARY OF STATE OF THE STATE OF ALABAMA,

PURSUANT TO THE PROVISIONS OF THE ALABAMA BUSINESS CORPORATION ACT, THE UNDERSIGNED CORPORATION HEREBY APPLIES FOR A CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN ALABAMA AND, FOR THAT PURPOSE, SUBMITS THE FOLLOWING STATEMENTS.

1. The exact name of the corporation: Geo-Comm, Inc

2. If your corporate title does not include "Corporation," "Corp," "Incorporated" or "Inc.", one of these must be added for use in Alabama. Please list your exact corporate title with the addition of one of these words.

3. State or Country of incorporation: Minnesota

4. Date of incorporation: 5/18/1995 Duration of corporation: perpetual

5. Street address of principal office:
601 West St. Germain Street St Cloud MN 56301

6. Name and **street address** (NO PO BOX) of registered agent in Alabama:
LexisNexis Document Solutions, 125 Tensaw Rd Montgomery Al 36117

7. The names and addresses of its directors and officers are:

NAME	OFFICE/TITLE	MAILING ADDRESS
Thomas GRONES	President/CEO	2295-230th St St Cloud MN 56301
Daniel Rudringen	Vice President	1707 Tyler Trail St Cloud MN 56301
Janet GRONES	Treasurer	2295-230th St St Cloud MN 56301
Mike Frericks	Secretary	601-17th St N. Sartell MN 56377

8. This application is accompanied by a copy of articles of incorporation and all amendments thereto, duly certified by the proper official of the state under the laws of which it is incorporated, together with the filing fee of $175.00. The non-profit corporation filing fee is $75.00. The certification by the Secretary of State or the equivalent in your state must be an **original** and **"current" (within six months)**.

9. Date: 10/8/02

RECEIVED

OCT 15 2002

SECRETARY OF STATE

Janet GRONES - Treasurer
Type or Print Corporate Officer's Name and Title

Janet Grones
Signature of Officer

MAIL DUPLICATE ORIGINALS OF THIS APPLICATION, A CERTIFIED COPY OF THE CHARTER AND THE FILING FEE TO:
SECRETARY OF STATE, CORPORATIONS DIVISION, POST OFFICE BOX 5616, MONTGOMERY, ALABAMA 36103-5616
(334)242-5324

CD.2 Rev. 4/2000

Attachment 3 Sample Contract Redlines

GeoComm accepts all mandatory contract terms as listed within the RFP:

- Duties of Contractor, Rate of Pay, and Term of Contract
- Authority to Bind Contractor
- Compliance with Laws
- Drug-Free Workplace Provision and Certification
- Employment Eligibility
- Funding Cancellation
- Governing Laws
- Indemnification
- Non-Discrimination Clause
- Ownership of Documents and Materials
- Payments
- Penalties/Interest/Attorney's Fees
- Termination for Convenience
- Non-Collusion and Acceptance

GeoComm requests modifications to the following non-mandatory clauses:

- **13. Continuity of Services:** ~~*C. The Contractor shall allow as many personnel as practicable to remain on the job to help the successor maintain the continuity and consistency of the services required by this Contract. The Contractor shall also disclose necessary personnel records and allow the successor to conduct on-site interviews with these employees. If selected employees are agreeable to the change, the Contractor shall release them at a mutually agreeable date and negotiate transfer of their earned fringe benefits to the successor.*~~
  - GeoComm requests to strike this language as it is not applicable to our proposed scope of work.
- **43. Termination for Default:** *A. With the provision of thirty (30) days' notice to the Contractor, the Board may terminate this Contract in whole or in part if the Contractor fails to:*
  1. *Correct or cure any breach of this Contract; the time to correct or cure the breach may be extended beyond thirty (30) days if the Board determines progress is being made and the extension is agreed to by the parties;*
  2. *Deliver the supplies or perform the services within the agreed time specified in this Contract or any extension; or*
  3. ~~*Make progress so as to endanger performance of this Contract; or*~~
  4. *Perform any of the other provisions of this Contract.*
  - GeoComm requests to clarify subsection 2 with the underlined inserted text.
  - GeoComm requests to strike subsection 3 as "make progress" is not defined.

Attachment 4 Authorizing Document

Heather Hoskins, GeoComm Vice President of Finance and Administration is legally authorized by the Geo-Comm, Inc. board of directors to commit GeoComm contractually. A copy of the legal authorization is provided on the following pages.

GeoComm
www.geo-comm.com

WRITTEN ACTION BY BOARD OF DIRECTORS
OF
GEO-COMM, INC.

The undersigned, being all of the directors (the "**Board**") of Geo-Comm, Inc., a Minnesota Company (the "**Company**"), acting pursuant to the provisions of Minnesota Statutes, Section 302A.239, does hereby take the following actions in lieu of a meeting of the Board effective as of the June 26, 2013:

Election of Officers

WHEREAS, the Board of Directors desires to appoint new officers of the Company.

NOW THEREFORE, BE IT

RESOLVED, that the following persons are hereby appointed as the Officers of the Company, to hold the offices set forth opposite their respective names and authorize authority in such offices until their respective successors shall have been duly elected and qualified:

Name	Title
John Bryant	President and Chief Executive Officer
John Brosowsky	Vice-President
Jody Sayre	Vice-President
Heather Hoskins	Controller
William Syverson	Secretary

General Authorization

RESOLVED, that the Authorized Officers are, and each of them is, authorized to take any and all steps and to execute such documents and instruments as such officers deem necessary or appropriate to carry out the intent of the foregoing resolutions.

FURTHER RESOLVED, that all actions of the Company and the officers, directors and agents of the Company, including those persons acting in such capacity, relating to or in connection with the actions authorized by the foregoing resolutions or otherwise in connection with the transactions contemplated hereby or thereby are in all respects ratified, confirmed and adopted as the acts and deeds of the Company.

[Signature Page Follows]

GP:3418148 v2

IN WITNESS WHEREOF, the undersigned has executed this Action to be effective as of the date first written above.

DIRECTORS:

[Signature Page to Written Action of the Board of Directors]

Attachment 5 Subcontractors

GeoComm has engaged the services and expertise of Applied Geographics, Inc. (AppGeo): 33 Broad Street, Floor 4, Boston, Massachusetts, 02109, to ensure we can successfully meet and exceed the State's project requirements. GeoComm will partner with AppGeo to leverage their expertise and provide support throughout various project phases. AppGeo will receive project direction from the Overall Project Manager.

AppGeo is willing and committed to carrying out their responsibilities as documented in the proposal.

AppGeo, a C Corporation, is a firm dedicated exclusively to GIS technology. They provide a full range of high-quality GIS and Geospatial IT consulting services and innovative solutions. In their 29th year in business, they have completed more than 700 GIS consulting projects for government and private-sector clients in a number of markets and industries in more than 40 states and territories. They boast expertise across the entire spectrum of geospatial technology.

AppGeo is a nationally recognized leader in GIS strategy and planning. Since 2006, they have been at the forefront of assisting the Federal Geographic Data Committee (FGDC) and the National States Geographic Information Council (NSGIC) assisting states with planning, implementing, and advancing their spatial data infrastructures. Since 2007, AppGeo has assisted more than 25 states complete more than 35 FGDC-supported GIS strategic and/or business plans. They have applied these practical Guidelines to strategic planning at other levels of government and proven their utility as a guide to the strategic planning process for regional, county, and municipal GIS planning.

Directly relevant to the State's project is AppGeo's experience with a number of organizations collecting, standardizing, and merging data from disparate sources. These engagements include the design and build of a nationwide system for the National Fire Protection Association (NFPA) for merging and reporting a variety of fire incident and other data totaling millions of records from the nation's 30,000 fire services. The creation of the National Fire Data System (NFDS) is an ambitious project to collect and store data within an extensible and scalable data infrastructure, and provide timely, accurate, and complete data to NFPA analysts, fire fighters, researchers, and other stakeholders.

Teaming Agreement

An executed copy of the teaming agreement between GeoComm and AppGeo, including anticipated dollar amount from the subcontract, is provided on the following page.

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TEAMING AGREEMENT

This Teaming Agreement (the "Teaming Agreement"), entered into and made effective as of February 5, 2020 (the "Effective Date") by and between **Geo-Comm, Inc.** with corporate headquarters at 601 W. St. Germain Street, St. Cloud, MN 56301 (hereinafter referred to as "Prime Contractor"), and **Applied Geographics, Inc.**, with headquarters at 33 Broad St, Floor 4, Boston, MA 02109 (hereinafter referred to as "Subcontractor" or "AppGeo") sets forth the agreement of Subcontractor and GeoComm (each a "Party" and collectively, the "Parties") to develop and submit a proposal ("Proposal") to **Alabama 9-1-1 Board** (the "Customer") related to the Next Generation 9-1-1 GIS RFP (AL-GIS-RFP-19-002) issued November 22, 2019 by the Customer requesting such proposals, and in all amendments, supplements, schedules, exhibits, and modifications to and of that Request for Proposals (the "RFP").

WHEREAS, the Parties have expertise and experience related to the RFP within those areas identified and set forth in Exhibit A, Scope of Work (the "Scope of Work"), which is attached hereto and made a part hereof; and,

WHEREAS, the Parties intend to enter into a contractual relationship if the RFP is awarded to Prime Contractor as a consequence of the proposal submission,

NOW, THEREFORE, in consideration of the foregoing recitals, and the mutual premises set forth below, the Parties do hereby covenant and agree as follows:

1. Proposal Activities. Prime Contractor shall have overall responsibility for the Proposal, capture management and RFP management. Prime Contractor shall prepare and submit the Proposal, together with a supporting contribution from Subcontractor as set forth in the Scope of Work, and other suppliers/subcontractors responsive to the requirements delineated by the Customer in the RFP, in accordance with the following terms:

   A. Each of Prime Contractor and Subcontractor shall perform the obligations set forth in the Scope of Work attached hereto as Exhibit A.

   B. The Subcontractor shall furnish to the Prime Contractor, for incorporation in the Proposal, accurate and complete information required for the Subcontractor's obligations under the terms of the Scope of Work, pricing, references if required, company profile, customer responsibilities and deliverables, prime requirements/assumptions in order to deliver Scope of Work, and a Gantt chart including dates with approach (if applicable) and other information as may be required by Prime Contractor in order that a fully responsive proposal may be submitted in accordance with the requirements of the RFP.

   C. The Subcontractor understands that the RFP has certain sections, including those listed below, that must be agreed to in order to be included in the RFP response.

      - 1.12 Secretary of State Registration
      - 1.13 Compliance Certification
      - 1.14 Americans with Disabilities Act
      - 2.3.5 Contract Terms/Clauses (Attachment A) – acceptance of mandatory terms
      - 2.3.9 Subcontractors

   D. Each of the Parties shall assign the necessary and appropriate qualified personnel who shall assist the other Party in the planning, preparation and integration of the Proposal.

   E. The conduct of any negotiations with the Customer regarding the Proposal shall in all cases be handled by the Prime Contractor.

   F. Each of the Parties shall bear all expenses that they may respectively incur in connection with the Proposal, any negotiations that may follow, and all other efforts under this Teaming Agreement. Neither of the Parties shall have any right to reimbursement or compensation of any kind from the other in connection with this Teaming Agreement and all activities pursued hereunder.

   G. Each of the Parties agrees to use its best efforts to cause a prime contract to be awarded to the Prime Contractor as a consequence of the Proposal to be prepared, presented and submitted pursuant to this Teaming Agreement. Subcontractor agrees to participate in pre-sales activities, presentations and

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negotiations as needed.

2. Scope of Teaming Agreement. This Teaming Agreement shall relate only to this specific RFP.

3. Relationship of the Parties. This Teaming Agreement does not constitute, create, or give effect to a partnership, joint venture, or any other type of formal business entity. The rights and obligations of the Parties shall be limited to those expressly set forth herein. Neither Party is the agent of the other Party and neither Party may bind the other Party except as may be set forth herein. Subcontractor shall not solicit other work from the Customer that relates to RFP.

   A. In all matters relating to this Teaming Agreement, the Prime Contractor shall be acting as an independent contractor. Neither the Prime Contractor nor its employees are employees of the Subcontractor within the meaning or application of any federal, state, or local laws, including, without limitation, unemployment insurance laws and workmen's compensation laws. The Prime Contractor assumes all liabilities or obligations imposed by any such laws with respect to its employees. The Prime Contractor shall not have any authority to assume or create any obligation, express or implied, on behalf of the Subcontractor, or to represent itself as an agent, employee, or the representative of the Subcontractor.

   B. In all matters relating to this Teaming Agreement, the Subcontractor shall be acting as an independent contractor. Neither the Subcontractor nor its employees are employees of the Prime Contractor within the meaning or application of any federal, state, or local laws, including, without limitation, unemployment insurance laws and workmen's compensation laws. The Subcontractor assumes all liabilities or obligations imposed by any such laws with respect to its employees. The Subcontractor shall not have any authority to assume or create any obligation, express or implied, on behalf of the Prime Contractor, or to represent itself as an agent, employee, or the representative of the Prime Contractor.

4. Proprietary Data. Confidential or proprietary data, materials or information ("Proprietary Data") need be furnished by one Party to the other Party only as necessary to further this Teaming Agreement. Both parties agree to hold all Proprietary Data in trust and confidence and agree that it shall be used only for the contemplated purpose and shall not be used for any other purpose or disclosed to any third party.

5. Inventions, Patents, and Copyrights. Nothing contained in this Teaming Agreement shall be deemed, in implication, estoppels, or otherwise, to grant any right or license in respect of any inventions, patents, or copyrights owned by either Party. Except for such rights as may accrue to the Customer under the terms of the RFP, inventions, patents and copyrights resulting solely from the work of employees or contractors of the Prime Contractor shall belong exclusively to the Prime Contractor. Except for such rights as may accrue to the Customer under the terms of the RFP, inventions, patents and copyrights resulting solely from the work of employees or contractors of the Subcontractor shall belong exclusively to the Subcontractor. Inventions, patents, or copyrights resulting from the joint endeavors of the Parties in the course of the RFP shall be the subject of further agreement of the Parties.

6. Publicity. No publicity, public announcement, news release, or advertising shall be released by either Party in connection with this Teaming Agreement or any proposal contemplated herein without the prior written approval of the other Party. Neither Party, however, shall be precluded from revealing the contents of this Teaming Agreement to the Customer.

7. Award of Prime Contract and Subcontract. If a prime contract is awarded to Prime Contractor as a consequence of the efforts of the Parties, the Parties shall enter into good faith negotiations for a subcontract, consistent with Exhibit A, which subcontract or SOW/PO shall contain such terms and conditions as are mutually agreeable to the Parties. In that regard, it is agreed that all clauses and flow downs required by the prime contract and applicable laws and regulations that are applicable to the Sub-contractor and its Scope of Work shall be included in any such subcontract. If prior Customer consent to or approval of the subcontract is required, Prime Contractor shall exert its best efforts to secure such approval. In the event the Customer awards a contract under which work within the scope of the Proposal will be authorized only by specific orders to be issued by the Customer at its discretion, as a consequence of which the Customer does not guarantee that the total effort covered by the prime contract will be ordered, it is understood by the Parties that the Prime Contractor cannot guarantee that the total effort covered by the subcontract will be ordered.

8. Limitations on Liability; Disclaimer.

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A. EXCEPT AS RELATES TO ANY GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF A PARTY OR A BREACH OF SECTION 4 HEREUNDER, NEITHER PARTY SHALL BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES OF ANY KIND UNDER THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO, ANY LOSS OF PROFITS OR REVENUE, EVEN IF A PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

B. EACH PARTY'S SERVICES AND THE CONTENT AND MATERIALS PROVIDED BY EACH PARTY UNDER THIS TEAMING AGREEMENT ARE PROVIDED "AS IS," AND EACH PARTY DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT THERETO, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, INFORMATIONAL CONTENT, NON-INFRINGEMENT, AND ENJOYMENT. EACH PARTY'S USE OF THE OTHER PARTY'S CONTENT AND MATERIALS IS AT SUCH PARTY'S OWN RISK.

9. Governing Law, Venue and Attorney's Fees. This Teaming Agreement will be construed and the legal relations between the Parties will be determined in accordance with the laws of the State of Minnesota without regard to its conflicts of laws rules. Any proceeding to enforce or to resolve disputes relating to this Teaming Agreement will be exclusively brought before a court of competent jurisdiction in either the federal or district court in Minnesota. The Parties hereby expressly waive any right to a jury trial and agree that any proceeding hereunder will be tried by a judge without a jury. The prevailing Party in any such action, as determined by the court, will be entitled to recover its reasonable attorneys' fees from the other Party.

10. Lobbying Activity. Subcontractor agrees that it is not authorized to engage in communications or make any appearance with Customer or other government personnel on behalf of the Prime Contractor that are attempts to influence a contract award decision by the Customer with respect to the RFP.

11. Assignment. This Teaming Agreement or any interest therein shall not be transferred or assigned, in whole or in part, by either of the Parties without the prior written consent of the other Party.

12. Term and Termination. Except as expressly provided in paragraphs 3, 5 and 9 hereof, this Teaming Agreement and all rights, duties and obligations provided for therein shall terminate upon the earliest occurrence of any of the following:

A. Written notice from the Customer that the RFP has been cancelled or delayed more than twelve (12) months from the Effective Date of this Teaming Agreement; or,

B. Award of a prime contract for the RFP to a Party other than the Prime Contractor; or,

C. The written agreement of both Parties to terminate this Teaming Agreement; or,

D. The execution of a subcontract agreement or signed SOW/PO between the Parties in relation to the RFP that outlines final awarded terms and scope; or,

E. The refusal of the Customer to approve one of the Parties for the RFP; or,

F. The failure of the Parties to reach mutual agreement on a subcontract after a reasonable period of good faith negotiations; or,

G. The commencement, whether voluntary or involuntary, of proceedings in bankruptcy, including filing under Chapter 11 of the U.S. Bankruptcy Code, by or against either of the Parties.

13. Severability. In the event that any portion of this Teaming Agreement is deemed either invalid or unenforceable for any reason by a court of competent jurisdiction, the remaining portions of this Teaming Agreement shall remain in full force and effect.

14. Changes. Any change or amendment to this Teaming Agreement shall be in writing and signed by an authorized official of both Parties.

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15. Notices. Any notice to a party required or permitted by this Teaming Agreement shall, unless otherwise expressly provided herein, be in writing and shall be given to such Party at their address, e-mail address or fax number specified below or at such other address, e-mail address or fax number provided:

If to Subcontractor:
Applied Geographics, Inc.
Attn: Kate Hickey
33 Broad St, Floor 4, Boston, MA 02109
Boston, MA 02108
Email: khickey@appgeo.com

If to GeoComm:
Geo-Comm, Inc.
Attn: Heather Hoskins
601 W. Saint Germain Street
Saint Cloud, MN 56301
Email: hhoskins@geo-comm.com

16. Entire Agreement. This Teaming Agreement constitutes the entire, complete and final understanding and agreement between the parties concerning the RFP and supersedes any previous understandings, commitments, or agreements, oral or written with respect thereto. Each Party covenants that there is no agreement between it and any other person, firm, or corporation that would cause this Teaming Agreement not to have full force and effect.

IN WITNESS WHEREOF, the Parties have, through duly authorized representatives, executed this Teaming Agreement effective as of the day and year indicated in the preamble hereto.

Applied Geographics, Inc.

Kate Hickey
VP of Consulting Services

2/10/20
Date

Geo-Comm, Inc.

Heather Hoskins
VP of Finance & Administration

2/10/2020
Date

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Exhibit A – Scope of Work including Pricing

AppGeo will provide the following baseline services under this agreement.

- Assist in preparation and attend Project Initiation Meeting:
  - Assumes the Project Initiation Meeting and GIS Data Management Workflow Collaboration Meeting will occur during the same trip.
  - Assumes four (4) hour meeting, three (3) hours preparation, plus travel.
- Assist in preparation and attend GIS Data Management Workflow Collaboration Meeting
  - Assumes four (4) hour meeting, three (3) hours preparation.
  - Travel included in the Project Initiation Meeting estimate.
- Review the field mapping spreadsheet to ensure it meets the State's and NENA standards prior to distribution
  - Assumes four (4) hours; No travel.
- Co-lead the Educational Campaign – six (6) onsite regional sessions
  - Assumes GeoComm will take the lead
  - Co-lead the Educational Campaign (6 onsite regional sessions) and AppGeo will attend and play supporting role.
  - AppGeo will provide four (4) hours of preparation support.
- GIS Data Hub System training and GIS Data Management Workflow presentation, GIS Data Analysis review to regional groups of PSAPs; Regional onsite visits to groups of PSAPs.
  - Assumes one (1) day on-site with 4-5 counties at each meeting (14 regional meetings).
  - AppGeo would attend all meetings with GeoComm Project Manager.

Summary of Costs	
Labor	$31,040
Travel Costs	$10,425
TOTAL	**$41,465**

Attachment 6 State Governments Experience

GeoComm's experience serving local, regional, and state governments is extensive. We have been dedicated to providing public safety 9-1-1 software and GIS solutions to state, regional, and local governments since our inception in 1995. GeoComm is an experienced provider of state-level NG9-1-1 GIS data, first beginning in 2012. Since that time since, we have grown to serve numerous states, including Maine, New York, Vermont, North Carolina, Pennsylvania, North Dakota, South Dakota, Iowa, Kansas, Texas, California, Washington, Oregon, and Wyoming. Today, GeoComm has a national reputation as a leading provider of public safety GIS software solutions and services.

Since being founded, we have assisted our customers to implement public safety grade GIS solutions that includes data development, maintenance services, mapping and dispatch applications and NG9-1-1 core component such as ECRF, LVF, Spatial Interface (SI) and data validation solutions to offer the best possible emergency services. Our professional staff has diverse, comprehensive industry experience from their public safety involvement dating back to the advent of basic 9-1-1. This experience has grown substantially as we assisted hundreds of jurisdictions across the nation to deploy Enhanced 9-1-1 (E9-1-1) software and services. It continues to evolve today through innovation, customer engagements and active participation in industry groups who are helping to shape the future of NG9-1-1.

Attachment 7 Similar Clients Experience

GeoComm has extensive experience working with clients similar in size to the State to successfully execute projects similar to this project proposed by the State. Our experience is unrivaled in the industry; we have amassed a deep breadth of knowledge, expertise, and proven success not found elsewhere. This experience will directly benefit the State, knowing GeoComm has the skills and know-how required to successfully and efficiently collaborate with you to achieve NG9-1-1 GIS data readiness across the State, on time and within budget.

Specifically, our NG9-1-1 products and services have been delivered to states across the country, including Maine, New York, Vermont, North Carolina, Pennsylvania, North Dakota, South Dakota, Iowa, Kansas, Texas, California, and Washington. Of specific similarity to the project proposed to the State are the projects we executed with the states of North Carolina, Pennsylvania, North Dakota, South Dakota, Iowa, Texas, California, and Washington. In each case, our dedicated team of GIS and Implementation professionals worked to achieve NG9-1-1 GIS data readiness across the state.

In these projects, we have been both a subcontractor to an ESInet provider, providing the NG9-1-1 GIS services components of a larger NG9-1-1 solution, and have also been a prime vendor, working alongside other vendors to deliver their components of an NG9-1-1 solution. We have experience working with the ANGEN ESInet provider, INdigital, in the State of Vermont. Most recently, GeoComm began working with CalOES through the Atos PRIME NG9-1-1 project for the statewide GIS project.

As an example, last year GeoComm was selected by the North Carolina 911 Board for an NG9-1-1 GIS Project aimed at preparing the State for an NG9-1-1 system implementation. This statewide NG9-1-1 GIS Project includes:

- Statewide GIS educational campaign: This campaign was aimed at helping local agencies understand the goals of the statewide NG9-1-1 project, the processes that would be completed throughout the project, and the overall importance of the GIS data assessment phase. The educational campaign was completed throughout June 2019 when GeoComm completed four different sessions.
- GIS data assessment: GeoComm is in the process of completing a GIS data assessment of each county's GIS data to determine its readiness for an NG9-1-1 system. The GIS data assessment analyzes their existing GIS data schema, helps them understand the National Emergency Number Association (NENA) NG9-1-1 GIS data model standards, and recommends GIS data improvement items for achieving public safety grade GIS data.
- GeoComm GIS Data Hub: All of the participating North Carolina counties were onboarded to GeoComm GIS Data Hub for up to daily NG9-1-1 GIS data validation and merging of the data into a statewide dataset. Quality control check processing was also completed to provide data quality reports to each of the participating counties. In addition, GeoComm GIS Data Hub now transforms the various datasets into a common, usable schema for provisioning into the State's NG9-1-1 system.

North Carolina joined a growing number of states entrusting GeoComm as their 9-1-1 GIS partner of choice to meet the demands of NG9-1-1. To date, this project is on track with the timeline proposed to the State of North Carolina.

AL-GIS-RFP-19-002 - Attachment C - Cost Proposal Template

Per Item Costs	Quantity	Unit cost	Price	Indicate Frequency (i.e. one-time, monthly, annually, etc.)	Discount eligible? (Y/N)
Software License fees or costs	0	0	$0.00	Annual Subscriptic	Y
Base system software	0	0	$0.00	Annual Subscriptic	Y
Customization required or proposed addressing specification	0	0	$0.00	N/A	
Additional modules required or proposed addressing specifications	0	0	$0.00	N/A	
3rd party software, if any, required for the operation of the system	0	0	$0.00	N/A	
Technical and user documentation	0	0	$0.00	Annual Subscriptic	Y
Installation/conversion/integration/transition costs	1	$567,021	$567,021.00	One-time	Y
Training including training materials	1	$88,995	$88,995.00	One-time	Y
Maintenance costs	0	0	$0.00	Annual Subscriptic	Y
Existing software upgrade/integration/training	0	0	$0.00	Annual Subscriptic	Y
Updates to supplemental files	1	$17,442	$17,442.00	One-time	Y
Revisions to documentation	0	0	$0.00	Annual Subscriptic	Y
Utilities	0	0	$0.00	Annual Subscriptic	Y
New functionality compared to prior available functionality in the market	0	0	$0.00	N/A	Y
Technical support/customer service, per year	0	0	$0.00	Annual Subscriptic	Y
Unlimited phone technical support for the technical staff	0	0	$0.00	Annual Subscriptic	Y

Value added costs	Quantity	Unit cost	Price	Indicate Frequency (i.e. one-time, monthly, annually, etc.)	Discount eligible? (Y/N)
Consulting - hourly rate	1	$185	$185.00	per Hour	Y

Annual price*	Year 1	Year 2	Year 3	Year 4	Year 5
Spatial Interface	$319,512.00	$319,512.00	$319,512.00	$319,512.00	$319,512.00
QA/QC support	$712,681.00	$712,681.00	$712,681.00	$712,681.00	$712,681.00
Geodatabase management	Optional	Optional	Optional	Optional	Optional

**The expectation is that this will be a price based upon the number of PSAPs and will grow gradually over time to the maximum amount*

Cost Proposal Narrative and Assumptions

The following document provides additional detail and insight into GeoComm's prices in Attachment C.

One-time pricing is valid if all Counties in the State participate in the project at initial contract signing and the one-time installation/conversion/integration/transition services occur simultaneously. It is anticipated all counties would be onboarded over the course of 12-24 months as described in the RFP.

Pricing is negotiable and subject to change if fewer Counties participate and/or the State requests a different on-boarding approach than that described in GeoComm's responses Attachment D and Scope of Work.

Cost Worksheet Items	GeoComm Response Description
Per Item Costs	
Software License fees or costs	Included in annual subscription price. GIS Data Hub is a Software as a Service (SaaS). As such, there are no upfront software licensing fees or costs.
Base system software	Included in annual subscription price. GIS Data Hub is a Software as a Service (SaaS). As such, there are no upfront software licensing fees or costs.
Customization required or proposed addressing specification	This does not carry an additional cost outside of one-time GIS Data Hub fees. GIS Data Hub will be configured/setup to meet the State's needs. No customization will be required.
Additional modules required or proposed addressing specifications	There are no additional modules outside of GIS Data Hub required to meet the RFP specifications.
3rd party software, if any, required for the operation of the system	There is no third-party software required to operate GIS Data Hub.
Technical and user documentation	Included in the one-time and ongoing GIS Data Hub fees.
Installation/conversion/integration/transition costs	GIS Data Hub initial analysis and QC processing; Project Initiation Meeting and GIS Data Workflow Collaboration meeting (onsite); Educational Campaign; General Project Management tasks, including: Project planning, Internal and external status meetings, Project reporting; Miscellaneous project management (emails, conference calls with the State and PSAPs) Data QC and Aggregation during implementation phases, after a County has been onboarded to the system
Training including training materials	Onsite regional training; includes travel expenses.
Maintenance costs	All maintenance costs are included in the monthly GIS Data Hub subscription price.
Existing software upgrade/integration/training	Annual GIS Data Hub subscription pricing includes all product enhancements for no additional fee. Enhancements will be provided to the state as they are available, with detailed release notes.
Updates to supplemental files	GIS Derived MSAG Development one-time Services. Ongoing processing services are included in the GIS Data Hub Subscription price below.

Cost Worksheet Items	GeoComm Response Description
Revisions to documentation	Included with Project Management services.
Utilities	Not applicable
New functionality compared to prior available functionality in the market	Not applicable
Technical support/customer service, per year	Included in the GIS Data Hub subscription price.
Unlimited phone technical support for the technical staff	Included in the GIS Data Hub subscription price.
Annual Price	
Spatial Interface	Annual subscription price for cloud hosted GeoComm SI
QA/QC Support	Annual subscription price for cloud hosted GeoComm GIS Data Hub QC and Data Merging
Geodatabase management	Optional products and services as described below.

Optional Products and Services

In addition to the products and services outlined in the Cost Proposal, the State and Counties would have the option to purchase optional products and services to support and streamline ongoing GIS data submission, update, and maintenance tasks.

- Local County/PSAP GIS Data Remediation Tools
  - Maintainer GIS Data Manager for Local County/PSAP GIS Data Remediation: $1,800/user, per year subscription
  - Maintainer MSAG Manager add-on to Maintainer Data Manager; to build and update the MSAG: $600/user, per year subscription
  - Submitter: additional method to easily submit data into GIS Data Hub: $199/user, per year subscription
- Regional/State-level GIS Data Collaboration and Remediation Tools
  - Contributor: for use by outside users (non-data maintainers) to submit data feedback comments to GIS data maintainers for incorporation into the master GIS dataset: multiple use-levels and prices; pricing available upon request
- Local County/PSAP GIS Updates and Maintenance Services: Two map data update service levels are available, basic and standard. Maintenance is offered at one service level. Details about the services are included in the Scope of Work herein.

County Population	One Time Map Data Updates Options (one-time price)		Ongoing Annual Maintenance Service
	Basic Package Price	Standard Package Price	Price per year
Small: <30,000	$10,855	$27,260	$4,590
Medium: 30,000-100,000	$17,392	$39,842	$6,936
Large: 100,001-400,000	$24,670	$56,864	$11,424
Extra Large: 400,001-1,000,000	$34,415	$82,521	$14,280

ATTACHMENT D
TECHNICAL SPECIFICATIONS

Table of Contents

1 INTRODUCTION

1.1 Overview

The Alabama 911 Board is in the process of implementing the Alabama Next Generation 911 Network (ANGEN), a fully functional and standards compliant Next Generation 911 (NG911) system comprised of an interconnected and interoperable system known as an Emergency Services IP Network (ESInet). The ESInet operates as a "system of systems" and once completed will provide the framework for all PSAPs to enable NG911 capabilities.

Geographic Information Systems (GIS) and the databases, attributes and spatial information within GIS are used in 911 primarily at the PSAP. These systems allow for the legacy call location information systems to query the local maps and present a location for the dispatcher. All of this locally developed and maintained GIS information is bound to a single PSAP or a single jurisdiction. The data is managed and maintained by local resources and can reside in many disparate systems and formats. While this current implementation worked in E911 and legacy systems, changes associated with ANGEN implementation have the potential to drastically change how GIS operations are handled.

A simple way to understand the difference is displayed below:

E911 (Legacy)	PSAP "finds" the caller by asking for location
NG911	Caller "finds" the PSAP by looking for the PSAP location

Taking the two factors above a step further, the impact of GIS on NG911 call delivery becomes a question of Call Routing and Call Dispatch.

- Call Routing is utilized by the NG911 system to use the location as the means of routing the call to the correct PSAP.
- Call Dispatch happens after the correct PSAP receives the call and uses the local tools to manage the response to the incident.

Alabama 911 Board GIS Strategy:

The Board is using this method (Call Routing / Call Dispatch) to allow GIS efforts to be split into phases during the implementation of ANGEN.

Phase 1: NG911 Call Routing Platform Implementation

During Phase 1, the Board will collect all Authoritative PSAP Boundaries and deliver those to the ANGEN Service Provider. Because ANGEN is designed to gather the location of a caller immediately as a call enters the network, these boundaries will be used by the system to select the proper PSAP boundary in which to route the call. Implementing this first Phase will allow for ANGEN to route all calls based upon location of any PSAP in the State. The ANGEN Service Provider will ensure that the routing system will align with the existing ALI database to present ALI at the workstation as it currently operates.

Impact

The impact of Phase 1 is that all calls will utilize ANGEN as the call routing platform throughout the State. The reliance on Selective Routing can be decreased and, in many areas, will be replaced. Additionally, calls will be routed according to the location of the caller not a pre-determined route based upon ANI or an approximation.

Timeline

This stage will begin immediately and the Board requests that all PSAPs share their primary PSAP boundary in GIS format with the Board and the ANGEN System Service Provider. NG911 call routing will initially be transparent to the PSAP since the ALI, CAD, MSAG and database management will remain unchanged.

Phase 2: NG911 GIS Database Administration

Phase 2 will be performed as two linked stages of development and administration. The first stage will focus on the development of the Location Information System (LIS) database(s) that will be used to replace the ALI system. Working with the ANGEN Service Provider, the Board will gather the ALI records and ensure that the format structure meets the appropriate standards. This effort will allow for the replacement of legacy ALI at the PSAPs and use ANGEN to perform the delivery of location to the PSAP with the call.

During this process the Board, ANGEN Service Provider and potentially a GIS contractor will conduct analysis of all of the data available from the PSAPs. This will involve the reconciliation of the ALI, MSAG and GIS files to develop the standardized format and data structure. Discrepancies that are identified due to errors of one of the systems (ALI, MSAG or GIS) will be referred back to the PSAP GIS manager for correction.

The second stage in Phase 2 will be the implementation of a Statewide GIS System for all PSAPs. The GIS files will be located in a centralized system that PSAPs can access to maintain and manage the data. The Board will ensure that training and support is provided to the PSAPs to allow ongoing database management of the location information.

Impact

The impact of developing the GIS platform ensures that all PSAPs utilize a consistent, standardized Statewide database. Furthermore, the management of the database will be centralized with common tools and processes. Once the GIS platform is completed, ANGEN can fully implement the Location Validation Function / Emergency Call Routing Function (LVF/ECRF) and NG911 call routing system. Additional impacts include the ability to access GIS information for all PSAPs across the State (with proper authorization) between PSAPs.

Timeline

This stage will commence in 2020 and it is anticipated that it will take roughly 12-24 months to complete.

1.2 Scope of Services

The GIS portion of the 911 Board's project as outlined here shall include the use of all existing and available source data, GIS files and the coordination and management necessary to complete the Statewide aggregation of the digital base map.

1. Vendors must describe the GIS services and/or database services within their proposed solution that may allow transition to geodatabase routing to all PSAPs in cooperation with the State of Alabama NG9-1-1 System Service Provider.
2. Vendors must include a method and workflow to collect all of the available GIS and database information from the PSAPs to enable the development of a geographic database used for traffic routing within the NG9-1-1 core.
3. Vendors must provide a method for delivering a Spatial Interface that can allow PSAPs to manage the data contained in the Location Information Server(s).
4. Vendors may include a Location Information Server(s) as appropriate for their solution.

The Board desires that transition to NG9-1-1 Call Routing occur as quickly as possible, understanding that PSAP GIS systems and databases may require normalization and synchronization. Tools and processes that facilitate a rapid transition to a Statewide, NG9-1-1 Call Routing are required.

The minimal expectation is that the GIS and database contractor will be responsible for providing support to assist in implementing the Board strategy for Phased NG9-1-1 GIS database implementation identified in Section 1.1 and to ensure that the Scope of Work includes:

- Assessment of existing PSAP GIS database information
    - ALI to Centerline error identification and assistance to the PSAPs to make corrections
    - MSAG to Centerline error identification and assistance to the PSAPs to make corrections
    - Address Point (Site / Structure) error identification and assistance to the PSAPs to make corrections
    - Boundary gap analysis and review of gaps and overlaps with PSAPs to make corrections
    - Development of a single Statewide NG9-1-1 dataset to meet the NENA NG Data Model
    - Implementation of NG-GIS system in cooperation with the NG9-1-1 System Service Provider (SSP)
    - Process and workflow development and implementation for PSAPs to ensure data remains current
    - Update receipt and integration of geospatial data from each 9-1-1 entity's GIS resource
    - Ability for authenticated users to upload GIS edits and changes through a secure browser-based portal
    - Implementation of a Spatial Interface (SI) to align with the NG9-1-1 SSP
    - Perform quality control and assurance on the data to meet accuracy standards
    - Ability to facilitate, coordinate, and communicate resolution of conflicting geospatial datasets

  - Execute live provisioning of the GIS map data into the SSP ECRF/LVF system on a timely basis
  - Process and workflow to allow dynamic changes to routing geospatial data
  - Compliance with NENA Data Model standards NENA STA-015.10-2018 and NENA STA-006.1-2018

- Secondary Scope
  - Assistance and support for ALI replacement
    - Transition and migration to GIS data
  - Assistance and support for MSAG replacement
    - Transition and migration to GIS data

Comply.

GeoComm will provide one-time services to build a GIS derived Master Street Address Guide (MSAG), as well as MSAG delta processing services to assist the State with maintaining ongoing synchronization between the State's NG9-1-1 Road Centerline layer, and the aforementioned GIS derived MSAG used by the Location Database (LDB).

GIS Derived MSAG Development

GeoComm will take the statewide Road Centerline layer and build a tabular MSAG based of the attributes included (referenced above as GIS derived MSAG). This service includes QC and verification that the deliverable meets the needs of the LDB provider.

MSAG Delta Provisioning

Once the GIS derived MSAG has been built, the ongoing process of detecting and delivering MSAG deltas will begin. This process consists of:

- Gathering the most current GIS data from GeoComm GIS Data Hub for the Alabama project
- Generating MSAG deltas via the changes detected to the State level GIS data on a once daily basis
- Modifying the delta file to conform to NENA 2.x format
- Performing QC checks to ensure the GIS changes create logical MSAG modifications
- Passing the files to the LDB provider by copying to an agreed upon location, such as using email, SFTP, or a web portal location

We will work with the State the LDB provider to establish a regular schedule for these services.

We are willing to discuss other options that are outside the scope of this agreement.

The Vendor shall verify the completeness of the attribute information gathered and to identify the proposed solution to meet the intent of these specifications.

Exceptions to any facet of the specifications must be clearly stated within the Vendor's proposal. Exceptions shall include an alternative where applicable. Any alternative must include a thorough description of the configuration, implementation and operation of the alternative to assist the evaluation team in understanding the purpose of the exception, and alternative.

The Board wishes to engage with one single vendor. The single Vendor will be responsible for all services provided by their proposed subcontractors if so utilized. All subcontractors and their roles, responsibilities and accountable tasks should be identified in the response.

1.3 Specifications

Vendors must respond as either COMPLY, NOT COMPLY or ALTERNATE to all of the specifications defined in this RFP. Vendors are required to provide detailed responses immediately following each specification.

If a Vendor provides an ALTERNATE to a specification, they must explain how they intend to meet the specification. This includes areas where a Vendor's proposal does not fully meet defined specifications. In such event, the Vendor must label the response as an ALTERNATE and present an alternative to meet the specification. **It is strongly recommended that all submitted proposals meet all specifications identified in this RFP.**

Responses to this Request for Proposal shall be limited to no more than 200 pages, including appendices, diagrams, tables, attachments or similar documents.

1.4 Ownership of Data

All data and information provided and collected in conjunction with the project shall be returned to the State upon completion of the project. The Vendor shall not, without written consent, copy or use such records, except to carry out contracted work, and will not transfer such records to any other party not involved in the performance of the contract pursuant to this RFP.

1.5 GIS Map Data Aggregation

All GIS data layers aggregated for this project will be maintained as feature classes in an Environmental Systems Research Institute's (ESRI) file geodatabase in a WGS 84 Latitude/Longitude projection prior to provisioning and loading the data into the ECRF/LVF system.

The Vendor's geodatabase model must be in compliance with the NENA GIS Data Model (NENA STA-015.10-2018 and NENA STA-006.1-2018). Please refer to Appendix A and Appendix B. The GIS data layers listed below, and their associated attribute data represents the GIS map data to be aggregated and provisioned for the ECRF/LVF functions within the NG9-1-1 system.

- Road Centerlines
- Site/Structure Address Points
- PSAP Boundary

- Emergency Services Boundary
- Provisioning Boundary

Some municipalities or other PSAPs may have a need for additional GIS layers specific to their operation. In these situations, the Board would expect these layers to be required.

The GIS contractor will aggregate the specified GIS data layers and their representative attributes into a seamless Statewide dataset. The basis of this aggregated dataset will come from a combination of available source data from local PSAPs, County and Municipal governments, Alabama State agencies, and any specific or unique data capabilities and resources derived from the Vendor.

In the process of aggregating the Statewide GIS map dataset, the Vendor will conduct a gap analysis in which they shall identify errors and discrepancies within the various local datasets.

It is the Board's expectation that the actual remediation and normalization of the data and correction of discrepancies will be conducted by the PSAP or Authority responsible for addressing. The contractor shall provide sufficient information and guidance to the local entities during the remediation of their data.

Comply.

GeoComm conducts gap analysis for all data submitted for all data authorities in the state. The gap analysis will tabulate all errors or discrepancies identified in the submitted data. Gap analyses will be performed via GIS Data Hub. Validation checks within the system are used to perform a gap analysis of each dataset submitted for the first time as well as all subsequent data submissions. The checks are NENA compliant and are preconfigured by GeoComm staff with input from the State on any additional requirements so that each time data is submitted, consistent and reliable data validation is conducted. The data validation process is automatically initiated each time source GIS data is submitted to GIS Data Hub. GIS Data Hub will merge the submitted data and provide a detailed validation report containing errors and discrepancies related to the accuracy and synchronization of the GIS data, MSAG, and ALI database.

GIS Data Hub companion application GeoComm Resolver software would help GIS data maintainers and other stakeholders with the output (error and discrepancies) from GIS Data Hub. Though not a required component of the NG9-1-1 GIS Data Management system, Resolver would make it easier for data maintainers to reconcile QC validation reporting. Resolver is a well-designed, flexible, easy-to-use application which can be accessed from Esri ArcGIS desktop.

As part of the project, GeoComm will develop a workflow process and QC plan which will document workflow procedures for data submission to GIS Data Hub and data remediation. It will also serve as a standard operation procedure for the State in utilizing the tools and services provided by GeoComm.

A municipality can add specific layers to their GIS dataset based on their specific needs. For example, if the municipality needs Police Beats, Fire Districts, Hydrant or Storm Drain layers for their mapping system, these layers can easily be added to their data submissions and can either be made mandatory to the state dataset or not.

Some municipalities may want to have Hydrogeology layers included within their GIS dataset and other may choose not to – the state would not necessarily need to make these layers mandatory for all submittals for every municipality since they could be considered extra layers from some municipalities and not part of the NG9-1-1 program, but specific to their local mapping applications.

2 GIS Layer Specifications

2.1 Road Centerlines

The contractor must lead the development of a Statewide GIS database platform for road centerlines. This layer shall include the GIS files collected by the contractor that have been synchronized with the ALI and MSAG and normalized into the new NENA NG Data Model structure (NENA STA-015.10-2018 and NENA STA-006.1-2018).

When aggregating the road centerlines layer, the following specifications shall be applied at a minimum:

2.1.1 Layer Specifications

- Adherence to the NENA NENA-STA-006.1-2018standards.
- All road centerline segments shall be broken in the following circumstances:
    - At ESB, ESN, unincorporated town, municipal, PSAP, County, and State boundaries
    - All road centerline intersections with the exception of overpasses
    - At any change in primary street name
- A local 911 Authority may decide to break road centerlines in other instances at its discretion, however, unless there's a rational reason for breaking a line segment then no breaks will exist except at dead-ends or in the instances stated above.
- Road centerlines must not overlap with the exception of overpasses and must not have dangles with the exception of dead-ends.
- Address attributes will be compatible with the direction of digitizing for addressable road centerlines.
- Invalid dangle nodes shall be corrected.
- The Vendor shall identify all errors and discrepancies identified during the aggregation of this data layer and submit the identified errors and discrepancies to the local entity for remediation.
- The NENA NG9-1-1 United States Civic Location Data Exchange Format (CLDXF) Standard, NENA-STA-004.1.1-2014, details street naming requirements for NG9-1-1 and

the NENA CLDXF Standard should be referred to for questions pertaining to anything street name related that's not directly covered by this document.

Vendors shall describe their process for ensuring that road centerlines meet the criteria defined within the NG9-1-1 data standard and ensure that the database is prepared to transition into geographic / location-based call routing.

Comply.

Validation checks built into GIS Data Hub are based on NENA standards, common GIS practices, and GeoComm's extensive industry experience in GIS Data GIS data assessments and improvement projects for NG9-1-1. Each time data is submitted to GIS Data Hub, consistent standards-based validation will be conducted across all data. This ensures data meets industry standards and is prepared to transition into location-based call routing. GIS Data Hub includes quality control audits that check for compliance of each requirement under the Layer Specifications list.

It should also be noted that GIS Data Hub can perform specific data quality checks for unique data requirements for either the ECRF or LVF. Typically, the quality checks are set up to look for any data type errors that could cause a critical issue with the performance of the ECRF or LVF.

The Vendor must describe their methodology used to aggregate a Statewide road centerlines GIS data layer. The description shall include how the Vendor will adhere to the NENA standard for NG9-1-1 GIS Data Model.

Comply.

A statewide road centerline layer would be merged via GIS Data Hub through an automated process. Local jurisdictions would upload their data to GIS Data Hub and from there, the data would be transformed into a NENA-compliant unified data model. The datasets would then undergo defined validation checks to detect data quality issues prior to merging. Discrepancies identified during the validation process would be reported back to the local submitting agency for resolution and to the State for monitoring and management. Merging processing would then continue, including specific checks for merging data, unless predefined thresholds controlling what is acceptable for merging are exceeded, which would then be reported back the submitting entity for resolution.

Data passing initial validation checks is sent to a data merging process where they are compared to the last accepted data submittal. Then, changes are extracted and undergo additional validation checks to detect issues which could occur when merging takes place. For example, GIS Data Hub validates that road centerlines break at shared intersections, validates that no gaps or overlaps are in polygon boundaries, and validates that globally unique IDs are in fact unique. Upon automated acceptance, the change sets associated with the data merging event are deployed to the ECRF via GeoComm SI.

Merging processing may be automatically halted if acceptable tolerance thresholds are reached. Errors in the data would cause this to occur, and the State and the data submitting entity would be notified of the errors. The State could either reject the submittal in its entirety, which rolls back all the associated changes, or accept the data despite the warning, allowing it to be integrated into the coalesced authoritative dataset and subsequently provisioned into the ECRF and LVF. Note that there are certain threshold rules that would negatively impact call routing integrity and cannot be overruled.

2.2 Site/Structure Address Points

The Vendor shall provide Statewide address structure points within the GIS data layers. The description shall present how the Vendor will adhere to the NENA standard for NG9-1-1 GIS Data Model.

When aggregating the site/structure address points layer, the following specifications shall be applied at a minimum:

2.2.1 Layer Specifications

- Adherence to the NENA NG9-1-1 GIS Data Model standards.
- The Vendor shall identify all errors and discrepancies identified during the aggregation of this data layer and submit the identified errors and discrepancies to the local entity for remediation.

Vendors shall describe their process for ensuring that site/structure address points meet the criteria defined within the NG9-1-1 data standard and ensure that the database is prepared to transition into geographic / location-based call routing.

Comply.

Validation checks built into GIS Data Hub are based on NENA standards, common GIS practices, and GeoComm's extensive industry experience in GIS data assessments and improvement projects for NG9-1-1. Each time data is submitted to GIS Data Hub, consistent standards-based validation will be conducted across all data. This ensures data meets industry standards and is prepared to transition into location-based routing.

The vendor shall include a methodology for aggregation of Statewide address structure points within the GIS data layers. The description shall present how the Vendor will adhere to the NENA standard for NG9-1-1 GIS Data Model.

Comply.

The methodology for merging a statewide address points data layer follows the same merging process described above for the statewide road centerline layer merging.

A statewide address points layer would be merged via GIS Data Hub through an automated process. Local jurisdictions would upload their data GIS Data Hub and from there, the data

would be transformed into a NENA-compliant unified data model. The datasets would then undergo defined validation checks to detect data quality issues prior to merging. Discrepancies identified during the validation process would be reported back to the local submitting agency for resolution. Merging processing would then continue unless predefined thresholds controlling what is acceptable for merging are exceeded.

Data passing initial validation checks is sent to a data merging database where they are compared to the last accepted data submittal. Then, changes are extracted and undergo additional validation checks to detect issues which could occur when merging takes place, such as address duplication. Upon acceptance, the change sets associated with the data merging event are deployed to the ECRF and LVF via GeoComm SI.

Merging processing may be automatically halted if acceptable tolerance thresholds are reached. Errors in the data would cause this to occur, and the State and the data submitting entity would be notified of the errors. The State could either reject the submittal in its entirety, which rolls back all the associated changes, or accept the data despite the warning, allowing it to be integrated into the coalesced authoritative dataset and subsequently provisioned into the ECRF and LVF. Note that there are certain threshold rules that would negatively impact call routing integrity and cannot be overruled.

The street naming standards used for road centerlines are applicable to address points. Vendors shall ensure the street names and addresses associated with address point correspond to the street name and address ranges of the street segment they fall on. Unless otherwise noted, definitions are taken directly from NENA-STA-006.1-2018 unless they're self-explanatory or in the case of street name elements based on NENA-STA-004.1.1-2014.PSAP Boundary

Comply.

GIS Data Hub is configurable to check individual street name components in both address points and road centerlines and compare to an acceptable values list. In addition, address points are compared to the road centerlines to ensure synchronization and reports discrepancies in street names, ranging and side of a road between the two layers.

2.3 PSAP Boundary

Per NENA-STA-006.1-2018, the primary use for the PSAP Boundary is to route call/emergency requests for NG9-1-1. This layer depicts the polygon(s) and the related attribute information that defines the geographic area of all PSAP boundaries within a given 9-1-1 Authority's geographic coverage area. The PSAP Boundary layer may have one or many PSAP Boundaries contained in the layer. Each PSAP Boundary defines the geographic area of a PSAP that has primary responsibilities for an emergency request. This layer is used be the ECRF to perform a geographic query to determine the PSAP to which an emergency request is routed.

The Vendor shall aggregate the PSAP boundary information Statewide into a GIS boundary data layer containing State, County and Municipal boundaries. The Vendor shall describe the process

for aggregating the PSAP boundary information Statewide into a GIS boundary data layer containing State, County and Municipal boundaries. The methodology must meet the NENA standard for NG9-1-1 GIS Data Model.

When aggregating the PSAP boundary layers, the following specifications shall be applied at a minimum:

2.3.1 Layer Specifications

- Adherence to the NENA NG9-1-1 GIS Data Model standards.
- The Vendor shall identify all errors and discrepancies identified during the aggregation of this data layer and submit the identified errors and discrepancies to the local entity for remediation.
- There shall be no unintentional gaps or overlaps within a PSAP boundary or between a PSAP boundary and neighboring PSAP boundaries.

Vendors shall describe their process for ensuring that PSAP boundaries meet the criteria defined within the NG9-1-1 data standard and ensure that the database is prepared to transition into geographic / location-based call routing.

Comply.

Validation checks built into GIS Data Hub are based on NENA standards, common GIS practices, and GeoComm's extensive industry experience in GIS data assessments and improvement projects for NG9-1-1. Each time data is submitted to GIS Data Hub, consistent standards-based validation will be conducted across all data. This ensures data meets industry standards and is prepared to transition into location-based routing.

In addition, GIS Data Hub compares the PSAP boundary layer to the provisioning boundary to ensure no unintentional gaps exist. First this is done in the local dataset, then in the merged dataset. Any polygon boundary layer overlaps are reported because there should never be overlaps (intentional gaps are possible).

The Vendor shall describe the process for aggregating the PSAP boundary information Statewide into a GIS boundary data layer containing State, County and Municipal boundaries.

Comply.

The methodology for merging a statewide PSAP boundary data layer follows the same merging process described above for the statewide road centerline and address point layer merging.

A statewide PSAP boundary layer would be merged via GIS Data Hub through an automated process. Local jurisdictions would upload their data to Hub and from there, the data would be transformed into a NENA-compliant unified data model. The datasets would then undergo defined validation checks to detect data quality issues prior to merging. Discrepancies identified during the validation process would be reported back to the local submitting agency for

resolution. Merging processing would then continue unless predefined thresholds controlling what is acceptable for merging are exceeded.

Data passing initial validation checks is sent to a data merging database where they are compared to the last accepted data submittal. Then, changes are extracted and undergo additional validation checks to detect issues which could occur when merging takes place. Upon automated acceptance, the change sets associated with the data merging event are deployed to the ECRF and LVF via GeoComm SI.

Merging processing may be automatically halted if pre-configured tolerance thresholds are reached. Errors in the data would cause this to occur, and the State would be notified of the errors. The State could either reject the submittal in its entirety, which rolls back all the associated changes, or accept the data despite the warning, allowing it to be integrated into the coalesced authoritative dataset and subsequently provisioned into the ECRF and LVF. Note that there are certain threshold rules that would negatively impact call routing integrity and cannot be overruled.

2.4 Emergency Services Boundary

Per NENA-STA-006-1-2018, An Emergency Service Boundary (ESB) layer defines the geographic area for the primary providers of response services. Each of these layers is used by the ECRF to perform a geographic query to determine which Emergency Service Providers are responsible for providing service to a location in the event of a selective transfer is desired, to direct an Emergency Incident Data Document (EIDD) to a secondary PSAP for dispatch, or to display the responsible agencies at the PSAP. In addition, ESB's are used by PSAPs to identify the appropriate entities/first responders to be dispatched. Each ESB layer may contain one or more polygon boundaries that define the primary emergency services for that geographic area. There MUST be a separate ESB layer for each type of service.

- Law Enforcement
- Fire
- Emergency Medical Services

The Vendor must aggregate Statewide emergency services boundary GIS data layers containing PSAP service areas and Police, Fire, EMS service areas. The methodology shall include adherence to the NENA standards for NG9-1-1 GIS Data Model.

When aggregating the emergency services boundary layers, the following specifications shall be applied at a minimum:

2.4.1 Layer Specifications

- Adherence to the NENA NG9-1-1 GIS Data Model standards.
- The Vendor shall identify all errors and discrepancies identified during the aggregation of this data layer and submit the identified errors and discrepancies to the local entity for remediation.

Vendors shall describe their process for ensuring that emergency service boundaries meet the criteria defined within the NG9-1-1 data standard and ensure that the database is prepared to transition into geographic / location-based call routing.

Comply.

Validation checks built into GIS Data Hub are based on NENA standards, common GIS practices, and GeoComm's extensive industry experience in GIS data assessments and improvement projects for NG9-1-1. Each time data is submitted to GIS Data Hub, consistent standards-based validation will be conducted across all data. This ensures data meets industry standards and is prepared to transition into location-based routing.

Vendors shall describe how they will aggregate Statewide emergency services boundary GIS data layers containing PSAP service areas and Police, Fire, EMS service areas. The Vendor will describe how the methodology shall include adherence to the NENA standards for NG9-1-1 GIS Data Model.

Comply.

The methodology for merging a statewide emergency service boundary data layer follows the same merging process described above for the statewide road centerline, address point, and administrative boundary layers merging.

Statewide emergency service boundary layers would be merged via GIS Data Hub through an automated process. Local jurisdictions would upload their data to GIS Data Hub and from there, the data would be transformed into a NENA-compliant unified data model. The datasets would then undergo defined validation checks to detect data quality issues prior to merging. Discrepancies identified during the validation process would be reported back to the local submitting agency for resolution. Merging processing would then continue unless predefined thresholds controlling what is acceptable for merging are exceeded.

Data passing initial validation checks is sent to a data merging database where they are compared to the last accepted data submittal. Then, changes are extracted and undergo additional validation checks to detect issues which could occur when merging takes place. Upon automated acceptance, the change sets associated with the data merging event are deployed to the ECRF and LVF via GeoComm SI.

Merging processing may be automatically halted if acceptable tolerance thresholds are reached. Errors in the data would cause this to occur, and the State would be notified of the errors. The State could either reject the submittal in its entirety, which rolls back all the associated changes, or accept the data despite the warning, allowing it to be integrated into the coalesced authoritative dataset and subsequently provisioned into the ECRF and LVF. Note that there are certain threshold rules that would negatively impact call routing integrity and cannot be overruled.

2.5 Provisioning Boundary

Per NENA-STA-006.1-2018, this polygon layer defines the area of GIS data provisioning responsibility, with no unintentional gaps or overlaps. The Provisioning Boundary must be agreed to by all adjoining data provisioning providers. This Provisioning Boundary layer can be used by an ECRF to facilitate exclusion of erroneous features that lie beyond the boundary, for geoprocessing purposes and can also be used by the Forest Guide to determine coverage for a data provisioning authority.

2.5.1 Layer Specifications

- There shall be no unintentional gaps or overlaps within a Provisioning Boundary or between a 911 Authorities Provisioning Boundary and the Provisioning Boundaries of other neighboring 911 Authorities.

Comply.

GIS Data Hub ensures there are no unintentional gaps or overlaps as described above. GIS Data Hub can be configured to identify features that are outside of the provisioning boundary as critical and stop pushing this erroneous data to the SI.

2.6 Street Name Alias Table

Per NENA-STA-006-01-2018, the street name as assigned by the local addressing authority MUST be the name associated with the Road Centerlines. The street name assigned by the local addressing authority is the street name used for location validation and call routing. However, many roads are known by more than one street name and these are known as alias street names. Many 9-1-1 Authorities need to accommodate for alias street names during call taking and data sharing.

In legacy systems it wasn't uncommon to account for alias street names by creating multiple overlapping Road Centerlines with different street names. In NG9-1-1 this is unacceptable and will result in a discrepancy report. Instead, a table of alias street names is maintained that uses the NGUID of Road Centerline segments to associate alias names from the alias table with their respective Road Centerline segment. It's highly recommended that the GIS Provider review section 3.6 of NENA-STA-006.1-2018 prior to creating the alias table.

2.6.1 Layer Specifications

- The parsing of street name elements follows the CLDXF standard.

Comply.

GIS Data Hub will merge Street Name Alias tables collected from local GIS authorities following the CLDXF standard.

3 GIS Services

The Vendor shall be responsible for GIS management and maintenance and the Spatial Interface between the PSAPs and the Emergency Call Routing Function (ECRF) and the Location Validation Function (LVF) provided by ANGEN. This capability will be dependent upon coordination with the NG9-1-1 service provider (ESInet vendor) to integrate the operation of the ECRF with the complete NG9-1-1 system for the purpose of call routing.

The ECRF/LVF functionality will provide a fully developed GIS change detection/update process including a Spatial Interwork (SI) function capable of addressing data updates and discrepancy inquiries from the local 9-1-1 entities as a managed service. The system shall include the ability to perform QA/QC audit checks and data analysis on an on-going basis prior to the provisioning of GIS data into the ECRF/LVF.

The Vendor shall provide the implementation and management services for provisioning GIS data to the NG9-1-1 ECRF and LVF as defined in the NENA STA-010.3 Detailed Functional and Interface Standards for the NENA i3 Solution.

The Vendor shall be responsible for the implementation, system tools and processes, by which it will manage GIS data updates from the local 9-1-1 entities, provide for QA/QC auditing functions prior to provisioning the GIS data into the ECRF/LVF, and implement and manage a NG9-1-1 compliant ECRF/LVF system.

Based upon their previous experience(s) Vendors will describe how ECRF/LVF integration including change detection/update processes have been performed.

Vendors will describe their process for completing ECRF/LVF integration for this project.

Comply.

GIS data updates from the authoritative GIS database are transmitted and provisioned to the ECRF and LVF using GeoComm SI. The NENA i3 compliant Spatial Interface provisions change-only or bulk GIS updates in near real time on a scheduled or ad-hoc basis to GeoComm ECRF and LVF. However, GeoComm SI is compatible with any ECRF or LVF meeting industry standards. The data provisioning methodology may vary from that which would be executed with GeoComm ECRF and LVF. GeoComm SI also supports non-NENA-standard ECRF and LVF GIS database update formats such as Esri file geodatabase.

GeoComm has unique project experience, with ECRF and LVF implemented at three customer sites, with the earliest beginning in 2012. While our SI can function with any ECRF or LVF system, it is particularly seamless with GeoComm ECRF and LVF.

If the State deploys GeoComm's ECRF and LVF, the GIS data passing initial validation checks is sent to a data merging database where they are compared to the last accepted data submittal. Then, changes are extracted and undergo additional validation checks to detect issues which could occur when merging takes place. Upon automated acceptance, the change

sets associated with the data merging event are deployed to the ECRF and LVF via GeoComm SI.

Merging processing may be automatically halted if preconfigured tolerance thresholds are reached. Errors in the data would cause this to occur, and the State would be notified of the errors. The State could either reject the submittal in its entirety, which rolls back all the associated changes, or accept the data despite the warning, allowing the changes to be provisioned into the ECRF and LVF. Note that there are certain threshold rules that would negatively impact call routing integrity and cannot be overruled.

3.1 GIS Data Management Tools

- The Vendor shall provide the means for secure web-based portal for collection of all data required for Normalization activities:
  - PSAPs to submit GIS uploads
  - PSAPs to submit MSAG data
  - PSAPs to submit any additional layers relevant to their operation
- The Vendor shall provide process and usage training of the portal and the upload process.

Comply.

Users will submit GIS data uploads and additional data layers relevant to their operation to GIS Data Hub. GeoComm will provide a secure web portal for local jurisdictions to interact with GIS Data Hub to submit GIS data and download QC results.

GeoComm will develop process documentation and training sessions tailored to the State's needs based on quality control checks, data model requirements and workflow decisions. Per NENA standards, NG9-1-1 relies on GIS data for routing 9-1-1 calls and for pre-validating locations of communications service subscribers before 9-1-1 calls are placed. This changes traditional roles and responsibilities for local 9-1-1 entities' personnel involved in building and maintaining key 9-1-1 databases such MSAG and GIS data. As a result, and with respect to new roles and responsibilities for 9-1-1 GIS data contributors and editors, GeoComm will provide workflow analysis and training sessions for local 9-1-1 entities.

3.2 GIS Normalization Services

The Vendor shall supply GIS data normalization services, GIS database management and maintenance and transition support to ensure that the location-based call routing capability meets the NENA i3 and NG9-1-1 standards.

The Alabama 9-1-1 Board recognizes that GIS data requires normalization with the preferred GIS data schema prior to replication to the ECRF. The GIS vendor shall establish the baseline schema, comparing the GIS data with the existing data sets, identifying the discrepancies and delegating the correction of discrepancies to the PSAP or local GIS authority.

The Alabama 9-1-1 Board will work with the vendor to determine the most appropriate strategy for normalization of GIS data with the PSAPs. The GIS vendor shall synchronize all GIS data to ensure that the schema is followed, and that the data can be used to transition into an NG9-1-1 system. The normalization will follow a workflow similar to the one below.

During normalization, the GIS vendor shall ensure that the data passes the QA/QC test for meeting the GIS schema. This workflow will continue each time that GIS data is modified by a PSAP. The GIS vendor will identify all discrepancies and follow the discrepancy workflow for error resolution. GIS normalization will review and report on the following, at a minimum:

- Missing data layers.
- Missing attribute information.
- Standardization of GIS data attributes in adherence to relevant national standards, both centerline and site/structure location points following the FGDC-STD-016-2011, NENA NG911 GIS Data Model, NENA Site Structure Address Point.
- Synchronization of GIS data with MSAG and ALI (NENA 71-501 v1).
- Address range parity in centerline, as well as relating to site/structure location points and centerline.
- Duplicate address ranges.
- Direction and flow errors.
- Gaps and overlaps in PSAP and service boundaries and edge matching.
- Centerline breaks at intersections and boundaries.

The GIS vendor shall describe its process that ensures timely and accurate error resolution of GIS data discrepancies. Only GIS data that passes the normalization stage will be provisioned to the ECRF. GIS data that does not pass normalization will be pushed back to the PSAP for error resolution. Discrepancy logs and reports will be delivered to the PSAP with a copy available for the 9-1-1 Board that identify the error and potential correction activities required to ensure that GIS data can be validated and normalized. The PSAP will be lead resource in the correction of the data.

Vendors shall describe the GIS normalization service and identify the workflow for ensuring that all GIS data is verified, QA/QC'ed and prepared for ECRF operation. The description shall include any reference documentation, diagrams or architecture supporting information that ensures that the GIS services meet the specification.

Comply.

GIS Synchronization Services Workflow

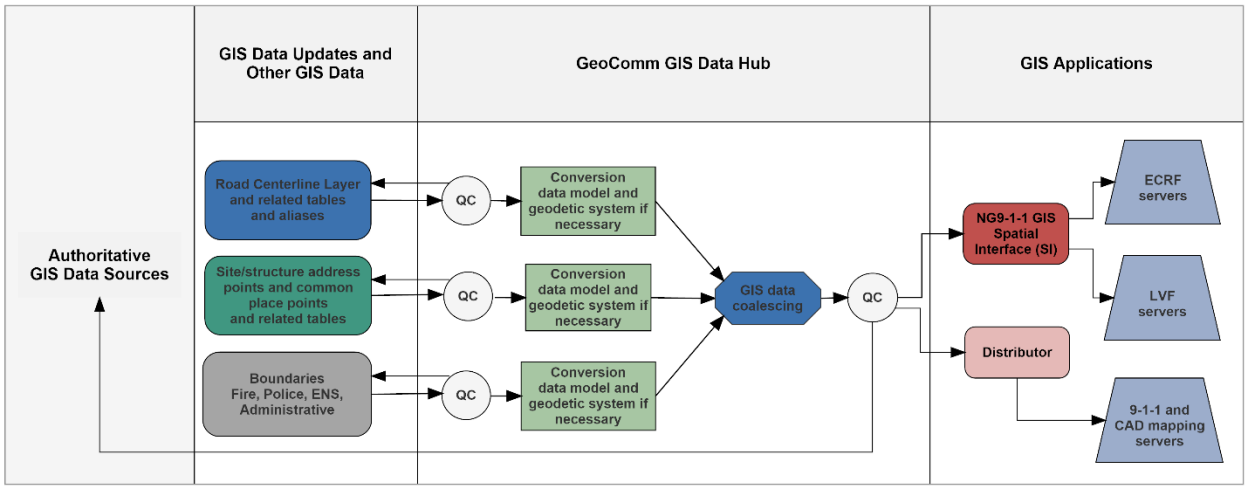
GIS Data Hub will provide on-going GIS data transformation, merging, QC, and reporting which will result in the progressive improvement toward a single NG9-1-1 GIS dataset. This will be accomplished through the following steps:

- Local jurisdictions upload GIS data to GIS Data Hub on an up to daily basis
  - The system automatically scans the received files to ensure they are not corrupt

  - Data would automatically be transformed into a schema and projection adhering to NENA GIS Data Model standards for the NG9-1-1 i3 requirements
- The data would automatically undergo configured QC checks
  - Multiple QC checks will be performed. They will ensure proper topology and data integrity, and ultimately ensure only accurate GIS data is included in the statewide NG9-1-1 GIS dataset.
- Spatial and attribute data is evaluated, based on compliance with the NENA GIS database model standard
- Data quality reports will be delivered to the submitting agency and optionally to the State
- The submitting agency will correct the GIS data errors outlined in the reports and resubmit updated data back to GIS Data Hub
- Data passing QC checks is merged to the statewide GIS dataset.
- Another round of validation is then executed to ensure the applied changes do not cause errors with adjoining datasets and GIS data already contained within the GIS database.
- Data is made available for provisioning to the ECRF and LVF

The workflow is depicted in the following diagram:

GeoComm GIS Data Hub Overview



This process would be followed for both initial and ongoing GIS updates, resulting in a continuous feedback loop of GIS data updates from local jurisdictions, GIS data performance measurements and reporting, and data transformation.

This will result in a stand-alone GIS function which serves as a repository from which GIS data can be provisioned to the ECRF and LVF via the SI to allow the system to validate records and ultimately route incoming calls to the correct PSAP. The processes and tools GeoComm proposes will continually improve the GIS data over time as local jurisdictions update their data,

ensuring the data provisioned to the ECRF and LVF is always the most current and accurate data available.

Once the system is cut over, data passing QC checks in GIS Data Hub will continue processing without interruption. Data will be provisioned within 24 hours after being processed through the QC checks. Datasets not passing validation checks will be returned to the submitting agency for remediation.

Synchronization with the MSAG and ALI Database

As part of every map data upload, GIS Data Hub will perform a comparison between the GIS data and the MSAG, and the GIS data and the ALI database for any data that has changed, and report results back to the State and local jurisdictions after each GIS data upload. The results will be a valuable resource for keeping GIS data synchronized with the MSAG and ALI database, as well as a metric for measuring progress toward required synchronization levels.

3.3 GIS Managed Services

- The Vendor shall provide for a secure web portal for PSAPs to submit GIS update/change requests and the Vendor to communicate error/discrepancy feedback.
- The Vendor shall provide the means for web-enabled reports, performance measurements, discrepancy tracking, for GIS quality assurance and system status.
- The Vendor shall provide the means for the State to view system and data metrics by means of a web-enabled viewer/dashboard.
- The Vendor shall provide process and usage training of the change management process to the local 9-1-1 entities.
- The Vendor shall provide 24x7x365 customer support
- Vendors shall ensure that GIS corrections are dynamically updated daily to the core routing platform.

Vendors shall describe the entire GIS service process. The description shall include any reference documentation, diagrams or architecture supporting information that ensures that the GIS services meet the specification.

Comply.

As described in response to the previous requirement, NG9-1-1 GIS data tasks and services will be completed utilizing GIS Data Hub. Regarding the specific services requested in this requirement, GeoComm offers the following response:

Secure Web Portal

GeoComm will provide a secure web portal for local jurisdictions to interact with GIS Data Hub to submit GIS data and Download QC results. If the State chooses to purchase the optionally

proposed GeoComm Contributor software, the workflow-based collaboration tool would be used for highlighting and identifying GIS data issues or required data edits.

In addition, GeoComm will provide a portal for the State to interactively view data status and functionality as it is processed through GIS Data Hub. Analytical and operational dashboards can be accessed and viewed through the portal, including historical data.

Performance Measurements

Performance, validation, and system status reports will be available on GeoComm's Web-enabled Dashboard or through downloadable reports. The dashboard in GIS Data Hub can be used interactively to view data status and functionality in near real time as it is processed through GIS Data Hub.

System and Data Metrics

GeoComm SI and GIS Data Hub will provide system and data metrics to State. GIS Data Hub is the primary system for calculating and reporting performance measurements and metrics on the 9-1-1 GIS datasets themselves, including but not limited to GIS data synchronization rate with ALI and MSAG databases measurements. There are over 80 general GIS data quality assurance checks which can be configured to report on 9-1-1-specific GIS data metrics.

Process Training

GeoComm will develop process documentation and training sessions tailored to the State's needs based on quality control checks, data model requirements and workflow decisions. Per NENA standards, NG9-1-1 relies on GIS data for routing 9-1-1 calls and for pre-validating locations of communications service subscribers before 9-1-1 calls are placed. This changes traditional roles and responsibilities for local 9-1-1 entities' personnel involved in building and maintaining key 9-1-1 databases such MSAG and GIS data. As a result, and with respect to new roles and responsibilities for 9-1-1 GIS data contributors and editors, GeoComm will provide workflow analysis and training sessions for local 9-1-1 entities.

The training sessions should be attended by local 9-1-1 entities and State representatives.

Training will include: Workflow diagram and QC plan review, preparing GIS data for submission, GIS Data Hub user training, and GIS Data Hub dashboard training.

Customer Support

GeoComm customer support consists of technical assistance and product coaching by trained, experienced specialists in an advisory capacity via a toll-free telephone number or e-mail. All calls for service are logged in NetSuite, GeoComm's customer relationship management software. Upon receiving communication regarding a software issue, the Technical Support

Analyst will work with you to resolve it. If all analysts are busy assisting other customers, a return telephone call will be made.

Emergency calls are addressed 24 hours a day, 7 days a week via a toll-free number/pager system based on mission critical nature of the GeoComm solutions implemented as indicated in the response table below. A technical staff member will return your emergency calls requiring immediate attention.

Dynamic GIS Correction Updates

Once the system is cutover, data passing QC checks in GIS Data Hub will continue processing without interruption. Datasets not passing validation checks will be returned to local authorities for resolution. Updates are not instantaneously provisioned to the ECRF due to the need for thorough quality control checks prior to provisioning to avoid introducing polygon gaps or overlaps, or range overlaps into the merged dataset. Entities may resubmit data as soon as critical errors are corrected, which will prompt the quality control, merging, and provisioning cycle to continue.

Turnaround times may vary if the State deploys an ECRF other than GeoComm ECRF as the ECRF determines the turnaround time.

4 Project Management

The Vendor shall provide project management and coordination to ensure the success of the overall project. The Vendor shall maintain regular contact with the 9-1-1 board, and the State project management office as well as the NG9-1-1 service provider to configure and implement the geographic (location based) call routing functionality.

Comply.

Project Team and Project Management Approach

GeoComm has assembled a project team with experienced, skilled industry professionals who are at the forefront of deploying NG9-1-1 GIS across the nation. Our project team will be led by two project managers: an overall Project Manager who will oversee the project and serve as a liaison between GeoComm and the State. The second project manager will serve as a liaison between the local jurisdictions (PSAPs) and GeoComm.

The proposed overall Project Manager is GeoComm GIS Project Manager Jessica Beierman, ENP, PMP, GISP. The proposed local project manager is Cheryl Benjamin, NG9-1-1 Subject Matter Expert, a subcontracted professional from Applied Geographics, Inc (AppGeo). Ms. Beierman and Ms. Benjamin will leverage their decades of industry experience to ensure the State's project receives superior oversight, keeping the project on time and within scope and budget.

The project management efforts will be overseen by GeoComm's director of Project Management Christy Hayes, PMP, ENP. The remainder of the project team is comprised of a combination of professionals from GeoComm's Client Services division, including GIS managers, technicians and trainers, Implementation managers, technicians, and trainers, with executive level support from the Vice President of Client Services, Todd Pieper, ENP. This team has worked together on dozens of NG9-1-1 GIS projects to successfully help our customers transition to GIS-based call routing for 9-1-1.

GeoComm Organizational Overview

GeoComm is a Public Safety GIS company dedicated to delivering GIS software and GIS data for geographic mapping systems to both small jurisdictions and large regional and Statewide 9-1-1 Systems. GeoComm implements and supports these systems through the Client Services Division at GeoComm. The Client Services Division is made up of five distinct work groups which focus on a specific set of priorities and functions. These five groups are:

- Project Management
- Software Implementation
- Technical Support
- GIS Project Team
- GIS Managed Services Team

Each team is overseen by a responsible manager who reports directly to the Vice President of Client Services. The teams manage their respective disciplines and assign team members to new projects or tasks as required. This cross-team coordination is managed by an assigned project manager from the project management group. Priorities are managed by each team member's direct manager while working with the project manager.

Project Team Overview

To accomplish highly technical projects such as that proposed to the State, GeoComm establishes a project team consisting of designated project management staff who are supported by established technical and GIS teams.

All assigned resources will functionally report to the Overall Project Manager who will have control over resource allocation to ensure the project is successfully completed. GeoComm plans to use experienced team members for GIS workflows, GIS consulting, and software implementation and training tasks. These team members have also implemented our current statewide NG9-1-1 GIS projects.

In addition, a project sponsor will be appointed from within GeoComm's Executive Team. The project sponsor will:

- Serve as a point of escalation for the project in the event changes need to be made to the project scope, timeline, or budget
- Have the authority to obtain new or additional resources for the project
- Serve as a point of contact to provide support to the Project Manager

GeoComm Project Management Overview

GeoComm's teams utilize project management processes with all projects. An emphasis on project management has become integral to our NG9-1-1 project successes. Based on over 24 years of project management practices within the company, and a legacy of strong project management consultants from across the industry embedded into our company, GeoComm established a Project Management Office under the leadership of Director of Project Management, Christy Hayes, PMP, ENP. Ms. Hayes has a strong, long-term project management relationship with Jessica Beierman, ENP, PMP, GISP, GeoComm's proposed project manager. Ms. Beierman will report to Ms. Hayes and will have authority and accountability for the project deliverables.

Subcontractor Involvement

GeoComm has engaged the services and expertise of subcontractor Applied Geographics, Inc. (AppGeo) to ensure we can successfully meet and exceed the State's project requirements. GeoComm would partner with AppGeo to leverage their expertise and provide support throughout various project phases. AppGeo will receive project direction from the Overall Project Manager.

AppGeo is a firm dedicated exclusively to GIS technology. They provide a full range of high-quality GIS and Geospatial IT consulting services and innovative solutions. In their 29th year in business, they have completed more than 700 GIS consulting projects for government and private-sector clients in a number of markets and industries in more than 40 states and territories. They boast expertise across the entire spectrum of geospatial technology.

AppGeo is a nationally recognized leader in GIS strategy and planning. Since 2006, they have been at the forefront of assisting the Federal Geographic Data Committee (FGDC) and the National States Geographic Information Council (NSGIC) assisting states with planning, implementing, and advancing their spatial data infrastructures. Since 2007, AppGeo has assisted more than 25 states complete more than 35 FGDC-supported GIS strategic and/or business plans. They have applied these practical Guidelines to strategic planning at other levels of government and proven their utility as a guide to the strategic planning process for regional, county, and municipal GIS planning.

Directly relevant to the State's project is AppGeo's experience with a number of organizations collecting, standardizing, and merging data from disparate sources. These engagements include the design and build of a nationwide system for the National Fire Protection Association (NFPA) for merging and reporting a variety of fire incident and other data totaling millions of records from the nation's 30,000 fire services. The creation of the National Fire Data System (NFDS) is an ambitious project to collect and store data within an extensible and scalable data infrastructure, and provide timely, accurate, and complete data to NFPA analysts, fire fighters, researchers, and other stakeholders.

In addition to any other necessary or suggested project management services, the Vendor will provide the following:

4.1 Single Point of Contact (SPOC)

The Vendor shall assign a single point of contact (SPOC) to serve as the vendor's primary project manager to coordinate all aspects of the project with the 911 Board and the Board's designees. The SPOC will coordinate and work as needed with the NG9-1-1 service provider to ensure deliverables can be utilized for call routing. The SPOC shall remain engaged for the duration of the contract period and only replaced with written approval by the 911 Board. The Board reserves the right of approval of the proposed project manager or any reallocation of project managers for the duration of the contract period.

The Vendor shall provide the name and background of the proposed individual and provide a brief description of the responsibilities of the SPOC. While not required a PMP certified PM is preferred.

Vendors shall include a named resource as the single point of contact and provide a description of their experience and responsibilities.

Comply.

GeoComm has assigned Project Manager Jessica Beierman, ENP, PMP, GISP to oversee and direct resources in the successful delivery of software and services outlined in this proposal. In addition to directing GeoComm resources to ensure tasks are being completed per specification and ensuring that timelines are met, Jessica will act as the main point of contact with the State and with the other vendor groups assigned to the project. At a minimum, it will be the Project Manager's responsibility ensure:

- All projects remain on schedule, within scope, and superior quality deliverables are provided
- The 911 Board and the Board's designees and other appropriate stakeholders are regularly updated in accordance with the project communications plan
- Configuration management processes are followed
- Project documents and resources are kept up-to-date and organized

Jessica's resume is provided on the following page.

Jessica M. Beierman, ENP, GISP, PMP

GIS Project Manager

With over a decade of public safety, GIS, and next generation 9-1-1 experience, Jessica ensures your data is ready for the next level.

Jessica's experience is specific to public safety, GIS, and NG9-1-1. She has a Master of Science (M.S.) degree in Geography, is a certified NENA Emergency Number Professional (ENP), GISP, and PMP, and has led the implementation of over 200 GIS and public safety software projects. As a Project Manager, she guides the NG9-1-1 transitions of states and local government agencies nationwide. You benefit from her expertise in all aspects of GIS data workflow development, maintenance, training, and analysis. A five-time presenter at the Esri User Conference and at NENA-APCO conferences in Wisconsin, Minnesota, and Washington 9-1-1, Jessica regularly:

- Helps clients understand the steps required to meet and exceed regulatory standards;
- Ensures quality control standards are met and that deliverables are on-time and on-budget;
- Utilizes and trains others in Esri ArcGIS Desktop tools;
- Efficiently manages the progress and quality control of GIS 9-1-1 based projects, including overseeing processing and quality checking of field data;
- Supports the set-up and testing of customer GIS data in GeoComm software;
- Utilizes quantitative analysis to ensure accuracy of map data, MSAG, and 9-1-1 databases;
- Creates GIS map data for use within E9-1-1 and NG9-1-1 software programs; and
- Coordinates with clients to tailor custom scope of services solutions

Experience

Geo-Comm, Inc. | Saint Cloud, MN | '06 – Present
GIS Project Manager
Saint Cloud State University | Saint Cloud, MN | '07 – '08
Graduate Assistant
Sherburne County | Elk River, MN | '08
GIS Intern

Distinctions

GISP Certification | Geographic Information Systems Certification Institute | '15
Emergency Number Professional (ENP) Certification | National Emergency Number Association | '15
Project Management Professional (PMP) Certification | Project Management Institute | '16

Education

Master of Science (M.S.), Geography | Saint Cloud State University | '12
Concentration: Geographic Information Systems
Bachelor of Applied Science (B.A.S.), Industrial Management | Minnesota State University Bemidji | '03
Minor in Business and German Language Studies

Project Highlights

State of Washington | Next Generation 9-1-1 GIS Implementation Services
Commission on State Emergency Services (CSEC), Texas | EGDMS II and III
State of North Carolina | NG9-1-1 GIS Services

4.2 Project Kick-off Meeting

The Vendor shall coordinate a project kick-off meeting with 911 Board representatives and additional project stakeholders as necessary. The Vendor's project manager shall attend the kick-off meeting in person at the Boards designated meeting point.

The project kick-off meeting shall serve as a session with the entire team to communicate the project objectives and distribute a firm action plan.

Vendors shall conduct a project kick-off meeting to outline the project action plan, assign areas of responsibilities, and create a common understanding of the project outcomes and schedules. All potential stakeholders must be identified, and every effort made by the vendor to conduct the kick-off to accommodate the stakeholders. Based upon the vendor's prior experience, scope of work, and size of the State the vendor will provide a "best effort" action plan here.

Comply.

The project will begin with an on-site Project Initiation kick-off meeting with 911 Board representatives, additional necessary project stakeholders, and GeoComm's Project Manager. GeoComm will work with the State to schedule the meeting at a mutually agreeable time. GeoComm's anticipated role in the Project Initiation meeting will be to:

- Introduce key personnel
- Review project objectives and goals
- Define mutual expectations
- Establish communication processes
- Discuss the project schedule, including frequency of periodic progress reporting
- Distribute a "best effort" action plan based on GeoComm's prior experience with projects such as those the State will undertake

4.3 Project Planning

The Vendor shall develop a project management plan that will be tailored to the specifications for NG9-1-1 implementation of this effort. With numerous stakeholders and parallel projects/activities in flight proper scoping, scheduling, communications and risk management will be paramount. At a minimum the vendor will provide the following management plans:

- **Scope Management Plan** (Includes: WBS development process, deliverable acceptance process)
- **Communications Management Plan** (Includes: Stakeholder Register, Stakeholder Communication Specifications, Communications Schedule)
- **Schedule Management Plan** (Includes: Performance Measurements Approach (i.e. Schedule Variance, Schedule Performance Index),
- **Change Management Plan**
- **Risk Management Plan** (Includes: Risk Assessment and Mitigation Methodology, Roles & Responsibility, and Timing of Risk Management activities)

In order to properly execute and control the project and in conjunction with the previous question the vendor shall address each bulleted plan above detailing the deliverables in each plan and explaining how they will be achieved. In addition, the vendor will provide the following project management documentation:

- Risk Register (Includes: Prioritized Risk List, Risk Response Strategies, and Risk Owners)
- Project Schedule with Critical Path(s) Identification
- Work Breakdown Structure

Comply.

GeoComm uses formal project management processes based on industry effective practices, specifically those prescribed by Project Management Institute (PMI) and documented in the Project Management Book of Knowledge, 5th edition. All project planning activities are formalized and well documented. The initial step in project planning is developing a project charter by gaining stakeholder requirements. The charter clearly defines the parameters of the project necessary for scope development. GeoComm will work with the State prior to project initiation to establish the project plan. The scope, budget, and schedule baseline will include:

- **Scope of Work and Work Breakdown Structure (WBS)**: specific tasks and resources needed; tasks will be matched with human and technical resources which will drive the project phases, milestones, and timelines.
- **Communication Plan**: developed to ensure effective and efficient team and stakeholder communications flow.
- **Risk Management Plan**: provides mitigation strategies for all known areas of risks.

All deviations from the baseline project plan are documented through the integrated change control process.

Scope Management

Effective control of the project scope will be fundamental to meeting the State's and GeoComm's expectations. Project scope management is necessary to ensure the project includes the work required, and only the work required, to successfully complete the project as defined by the project charter and contract. By organizing tasks, managing the level of effort, developing and monitoring the project schedule, and producing key tasks and deliverables, the project manager will deliver a quality project on time and within financial projections.

GeoComm procedures are designed to clearly define a project's scope at the proposal and negotiation phases. It is the responsibility of the project manager to effectively manage the project to ensure activities support development of contracted deliverables.

Project Communication

Ongoing communication is critical successful project completion. A formal communication plan is a key component to ensuring effective communication is maintained throughout the life of a

project. GeoComm will work with the State to establish a communication plan early in the project. The communication plan will include action items and expected completion dates for members of the GeoComm project team and the State.

Several different methods will be leveraged to ensure the project status is readily communicated to the entire team, including:

- One-site meetings with the various State groups and boards
- Written status reports distributed to the State project team for the duration of the project. Reports will include:
  - List of completed work
  - List of tasks/deliverables and/or milestones to complete
  - Responsibilities of the State
  - Issues which may impact the project
  - Deliverables timeline
- Regular conference calls
- Other communication methods the State prefers

Schedule Management

The WBS is maintained in Microsoft Project software. It breaks down the team's work into manageable sections. It will be used to identify potential risks which could affect the timeline of the project.

The WBS will be managed by GeoComm's Project Manager. It will be reviewed and updated throughout the project as deliverables are met and in collaboration with the State. If it appears a milestone may be missed, the project manager will notify the team member responsible for the milestone. A change request describing the milestone and reason for the time delay will be sent to the project sponsor for review and approval. This may result in the timeline being adjusted.

If a potential timeline adjustment affects a major deliverable, the State's project manager will be notified immediately via a Jeopardy Notice and appropriate action will be discussed. Any changes to the deliverable schedule will be reflected in the ongoing project status reports.

Change Control Process

GeoComm is committed to providing outstanding customer service during this project. Providing this level of customer service requires a strong commitment to the project timeline, deliverables, scope, and budget. Changes to any project are inevitable and should not be viewed negatively. Unmanaged change, however, can provide the basis for project failure. GeoComm has instituted a formal process for requesting changes to project scope, timeline, and/or budget. The integrated change control process is not designed to suppress change but to recognize the implications of project change. It is the Project Manager's responsibility to recognize the need for a project plan modification and request change approval through the formal change process.

A change request form must be submitted to request timeline adjustments or request additional resources (i.e., staff resources, additional site-visits, etc.). The change request will be reviewed by the project sponsor and assigned a unique number to be documented in the Record of Change table in the project management plan. All change requests will be considered and formally approved or denied. Any project delays, including missed deliverable deadlines (not applicable to sub-tasks) or scope changes must be authorized through this process prior to implementation. A project jeopardy notification will also be sent to the State's project manager for review and evaluation.

The change is considered by the GeoComm management team and if approved, a determination will be made whether a formal change order/contract addendum will be prepared for presentation to the State. All change requests, whether approved or rejected, will be placed in the project files. Formal change orders will be placed in the original contract file and posted to a project portal.

Risk Management

Every project has both known and unknown risks. At project initiation, GeoComm will conduct a thorough analysis of potential risks to ensure risks and uncertainties are properly managed. Through identification of potential risks, GeoComm will collaborate with the State to develop high level plans which identify risk mitigation or containment strategies and the impact of the risk and enacted countermeasures. GeoComm will conduct weekly reviews of the risk management plan to reevaluate the likelihood of identified risks and to recognize the emergence of new potential risks. In addition, risk identification and management will be a recurring topic in general status updates provided to the State.

4.4 Project Status Reporting

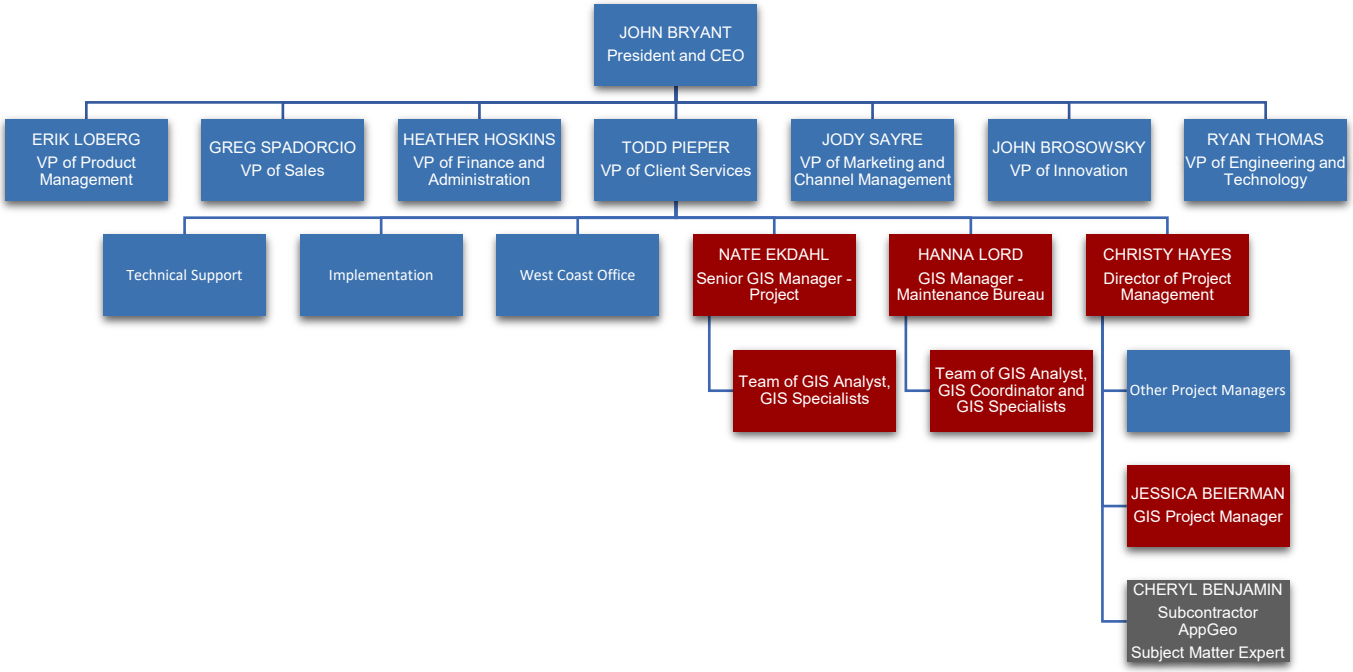
The Vendor shall prepare weekly progress/milestone reports for the Board, until otherwise advised. To ensure on-going communications, project planning and overall awareness of progress, project status reports shall include project progress, milestone achievement and status updates. The project status reports shall include references to any Board responsibilities, upcoming major task elements, deliverables and applicable quality assurance/quality control (QA/QC) metrics. The Vendor shall include a final QC report at the conclusion of the project.

The vendor will participate in update status teleconferences at the discretion of the Board. The vendor will also provide update status oral reports to the Board in person up to 3 times during the span of the implementation.

Vendors shall describe the Project status reporting framework and provide any samples necessary to adequately assess the response.

Comply.

GeoComm will provide project status reporting as requested above by the State. GeoComm's standard status template includes those metrics the state wishes to see in reports. Further, a live version of GIS data status is accessible via GIS Data Hub and can be exported and provided as a status update to the State. In other statewide GIS Data Hub deployments, we provide these updates both weekly and monthly. We will work with you to determine an update frequency schedule which best suits your needs.



GeoComm's Scope of Work

Introduction

GeoComm proposes to provide NG9-1-1 GIS implementation services paired with GeoComm GIS Data Hub to meet the State's NG9-1-1 GIS data management goals. GIS Data Hub is a user-friendly, fully integrated NG9-1-1 GIS data management application which provides a means to ingest, analyze, report, and merge GIS data. GIS Data Hub was developed to accomplish the following ongoing GIS data tasks:

- Submission of data to a centralized authority
- Quality Control (QC) processing
- Transformation to a common GIS data schema
- QC validation for NG9-1-1 call routing and NENA standards
- Merging multiple datasets into one seamless statewide dataset
- Quality reporting
- Provisioning to NG9-1-1 core components (the NENA Spatial Interface)

GIS Data Hub will be deployed with GeoComm Resolver. GeoComm Resolver is a: "one-stop issue resolution shop" for GIS data maintainers and other stakeholders. It consumes GIS Data Hub validation fallout lists, and is a flexible, easy-to-use application accessed from Esri ArcGIS Desktop.

NG9-1-1 GIS Implementation Services

The primary goal of the NG9-1-1 GIS Implementation Services will be to develop a repeatable workflow for processing GIS data, resulting in a continuous feedback loop on the quality of the GIS data updates from local jurisdictions. Project stakeholders will interact with GIS Data Hub in the following way:

- Local jurisdictions upload GIS data to GIS Data Hub, following a mutually agreed upon up to daily frequency schedule
- Data will undergo QC checks adhering to NENA and State-required standards
  - The State may choose to set processing thresholds customized to each layer that, if triggered, would prevent data from being incorporated into the merged dataset
  - The submitting agency will be notified and will receive a report explaining the reason for the failure
- Data quality reports will be delivered to submitting agencies via GIS Data Hub
- Local jurisdictions will correct errors outlined in the QC reports and resubmit updated data back to GIS Data Hub
- After the data is evaluated with the QC checks, it is transformed into the format required for NG9-1-1 and merged into the statewide dataset
- A final statewide GIS dataset will be provisioned to the ECRF and LVF

Project Team

GeoComm has assembled a project team with experienced, skilled industry professionals who are at the forefront of deploying NG9-1-1 GIS across the nation. Our project team will be led by two project managers: an overall Project Manager who will oversee the project and serve as a liaison between GeoComm and the State. The second project manager will serve as a liaison between the local jurisdictions (Counties) and GeoComm. The proposed overall Project Manager is GeoComm GIS Project Manager Jessica Beierman, PMP, ENP, GISP. The proposed local project manager is Cheryl Benjamin, NG9-1-1 Subject Matter Expert, a subcontracted professional from Applied Geographics, Inc. Ms. Beierman and Ms. Benjamin will leverage their decades of industry experience to ensure the State's project receives superior oversight, keeping the project on time and within scope and budget.

The project management efforts will be overseen by GeoComm's director of Project Management Christy Hayes, PMP, ENP. The remainder of the project team is comprised of a combination of professionals from GeoComm's Client Services division, including GIS managers, technicians and trainers, implementation managers, technicians, and trainers, with executive level support from the Vice President of Client Services, Todd Pieper, ENP. This team has worked together on dozens of NG9-1-1 GIS projects to successfully help our customers transition to GIS-based call routing for 9-1-1.

Project Approach

We will work with you to execute a series of specific GIS and technical tasks to successfully deploy GIS Data Hub at the State, including tasks to achieve a GIS dataset that meets requirements for geospatial call routing.

GeoComm will collaborate with local jurisdictions to ensure all data sources are identified and analyzed for readiness in GIS Data Hub and are merged into a Statewide dataset for ECRF and LVF operations. This will include identifying edge-matching resolutions recommended to create a seamless dataset for call routing.

The project will be completed in the following phases:

- Phase One: Project Initiation
- Phase Two: GIS Data Management Workflow Collaboration
- Phase Three: GIS Data Hub Configuration and Data Load
- Phase Four: Interoperability Testing
- Phase Five: Educational Campaign
- Phase Six: Field Mapping Review and Coordination
- Phase Seven: GIS Data Hub System and Process Training
- Phase Eight: Merged Geodatabase Creation
- Phase Nine: GIS Derived MSAG Development and Processing
- Phase Ten: Optional County GIS Data Correction Services
- Phase Eleven: Ongoing Operational Support

It is anticipated the phases will occur in a mostly chronological order as listed, though some will take place simultaneously. Throughout each phase, GeoComm will dedicate time to project management and ongoing communication. By partnering with GeoComm you will know the status of your project, that deliverables are being met, and have confidence your objectives are being carried out. GeoComm will provide regular status updates that will include:

- General progress updates
- Meetings held, planned, or needed
- Issues/problems encountered or anticipated
- Goals for the next reporting period
- Schedule review
- State and local jurisdiction responsibilities

A detailed description of each phase is provided below.

Phase One: Project Initiation

Project Initiation Meeting

An onsite Project Initiation meeting will be scheduled and conducted with the State's project team, GeoComm's Project Managers (Ms. Beierman and Ms. Benjamin), and a GeoComm GIS Specialist. The meeting agenda will include:

- Introductions and identification of project team members and roles
- Timeline and deliverable review
- Project approach review
- Project communication methods

Phase Two: GIS Data Management Workflow Collaboration

GIS Data Management Workflow Collaboration Meeting

While onsite for the Project Initiation meeting, GeoComm will conduct a GIS Data Management Workflow Collaboration meeting to document a GIS Data Hub GIS data workflow and QC plan. Policies for regular, ongoing GIS data submittal to GIS Data Hub will be established. A QC plan, including regular communication of QC results to counties, will be documented. The QC plan will detail quality control processes to be performed on GIS data submitted to GIS Data Hub.

The meeting will cover the following topics:

- GIS data submission and reporting interface demonstration
- Standard workflow procedures
- Review of the State's data schema and critical errors for ECRF and LVF

- Data schema field mapping processes
- Attribute standards
- QC error options review
- Initial workflow diagram development
- Seamless dataset development and maintenance process

In addition, GeoComm will work with project stakeholders to initiate data collection from the counties (GIS, MSAG, and ALI). GeoComm will assist counties with obtaining the required project data, but the counties will be responsible for all third-party fees which may be required to obtain copies of the required project data (i.e. MSAG and ALI).

After the meeting has concluded, GeoComm will execute a series of tasks to work with the State to draft, refine, and deliver GIS data workflows which incorporate steps needed for continual operation of GIS processing.

GIS Data Management Workflow Development

Following the GIS Data Management Workflow Collaboration meeting, GeoComm will develop preliminary NG9-1-1 management workflows which incorporate utilizing GIS Data Hub for NG9-1-1 GIS data tasks. Documentation, including diagrams depicting the workflows, will be provided to the State for review. The NG9-1-1 GIS workflows would cover roles, responsibilities, and activities including:

- Local QC error report and remediation management workflow
- Process overview, including merging GIS updates into the Statewide GIS dataset
- ECRF and LVF provisioning and error notification workflow

After project stakeholders have time to review the preliminary workflow documentation, GeoComm will conduct up to two additional conference calls and/or working web sessions to discuss and adjust the workflow diagrams.

Phase Three: GIS Data Hub Configuration and Data Load

After the GIS Data Management Collaboration meeting, GeoComm will begin configuring GIS Data Hub for the State. Industry standards, the State's required system deployment and system usage, and GeoComm's experience will be accounted for when configuring the final system.

Initial Data Load and Data Configuration

Before the State and local jurisdictions can leverage GIS Data Hub for data merging, QC, and reporting functions, local level GIS data must be loaded and configured in the system. GeoComm will work with the State and counties to import data into the system. Accounts for users authorized to upload data will be created and users will then upload their initial datasets. As part of this process, field mapping and QC check configuration tasks will be completed.

GIS Data QC Checks Processing

After local source datasets have been uploaded and configured in GIS Data Hub, the individual datasets will undergo QC checks processing. The QC checks will be executed prior to data being merged into the statewide dataset and will report concerns with topology and data integrity. They will also include evaluation of spatial and attribute data based on compliance with NENA and State data model standards.

Each local source data authority will receive a report with QC check findings. Local data authorities will update the data to adhere to applicable standards.

In instances where local resources are unable to resolve GIS data errors from the GIS Data Hub QC reports, GeoComm may perform updates on these counties' behalf. Please see details about this optional service below in Phase Nine: Optional County GIS Data Correction Services.

Phase Four: Interoperability Testing

GeoComm will coordinate testing measures to ensure interoperability between GeoComm SI and the ECRF.

GeoComm will work with project stakeholders to ensure all system functionality contracted for has been delivered. If any functionality gaps are identified, a plan for resolution will be developed.

Phase Five: Educational Campaign

Successfully implementing a statewide NG9-1-1 system requires cooperation from local jurisdictions. The foundation of a statewide GIS dataset is local GIS data and gaining support from each County at the onset of the project is crucial. GeoComm, in partnership with AppGeo, will assist the State in executing an NG9-1-1 educational campaign to promote local entity project cooperation. Our experience shows this is a valuable service to communicate the project objectives, showcase the work by local jurisdictions, and gain local buy-in to adopt the project across the state.

Each of our state-level NG9-1-1 GIS projects have had an element of an educational campaign to ensure alignment within the states by all stakeholders. This approach has proven to be very effective in the states of Iowa, South Dakota, Washington, North Carolina, Pennsylvania, and the Texas Commission on State Emergency Communication (CSEC).

GeoComm, in a joint effort with AppGeo, will offer up to seven onsite regional project introductory sessions co-hosted with the State to educate local stakeholders about NG9-1-1 and the GIS data workflow processes developed as part of the project. Representatives from counties and local GIS departments would be asked to attend the two-hour long session facilitated by GeoComm with assistance from the State. In addition, one recorded webinar would be offered for counties unable to attend in-person.

The overall message of the sessions would be discussed during the Project Initiation Meeting and the agreed upon approach, including a strategy for campaign promotion, would be incorporated into the formalized project plan.

Please note, we have seen our customers be successful by conducting the educational sessions as webinars only, with no onsite meetings; this is both an effective and cost-efficient approach the State may consider.

Phase Six: Field Mapping Review and Coordination

To control how GIS data is processed and ultimately written to the final data output, GIS data must be configured into GIS Data Hub. The one-time field mapping process will allow individual jurisdictions to continue working in their existing data structure as long as all mandatory and conditional fields are represented in the local dataset. Entities will each submit information about their data which GeoComm will then use to conduct field mapping. Information will be provided to GeoComm via a spreadsheet which will be distributed to jurisdictions following the GIS Data Management Workflow Collaboration meeting and instruction on completing the spreadsheet will be provided.

Phase Seven: GIS Data Hub System and Process Training

GeoComm will work in close collaboration with the State to develop a comprehensive training program that best suits the needs of local-level and state-level stakeholders. GeoComm's recommended training approach is onsite regional training.

GeoComm is flexible to work with groups of counties, by region, to deliver training courses. It is expected that onsite regional training courses would be up to four (4) hours in duration. Attendee limitations for onsite training courses would be defined during project planning when it is known how many attendees are anticipated. GeoComm will work with the State to ensure the number of requested attendees is accommodated.

The following topics will be covered.

- GIS Data Hub overview, including user roles and responsibilities
- Access to GIS Data Hub and GIS Data Hub Help
- Key data quality and provisioning processes review
- Roles and responsibilities for data management and system maintenance overview
- Submitting GIS data to GIS Data Hub
- QC results notification receipt and download
- Accessing the QC summary report
- QC Plan review
- Review of QC process results
- Correcting reported errors (note that actual data corrections will be a responsibility of the county, or provided by GeoComm for an additional fee)

- Detailed system user and management processes review
- Conflict Resolution
- Data Integration
- System Usage
- Login Methodology
- Process to contact customer service for support
- Q&A

Training Audiences

In all training scenario cases, it is important to note training is intended for groups who will be responsible for training local GIS Data Hub users (those managing data at the local level). It will ultimately be up to the State to determine who will attend the courses. Generally, user roles will be defined by responsibilities around GIS data QC and maintenance. GeoComm will work with you to define these roles and establish the best participants for whichever training courses are selected.

Phase Eight: Merged Geodatabase Creation

After local GIS data has passed the QC checks within GIS Data Hub, it will be merged into a statewide GIS dataset to support NG9-1-1 call routing.

Minimum GIS Layers Required to Achieve Geospatial Call Routing

As the State continues to plan and implement your NG9-1-1 deployment, it is important to understand it is possible to go live with geospatial call routing following a scaled back version of NENA requirements for GIS data. The following minimum GIS layers are required to achieve geospatial call routing functions:

- Street/Road Centerlines, with road ranges and NENA Civic Location Data Exchange (CLDXF)-compliant standardized attributes.
- PSAP Boundary, for initial call routing
- Emergency Service Boundaries, for call transfer functionality
- Provisioning Boundary to control overlaps and gaps in submitted datasets, and define the geographic area for which the ECRF will be routing calls

Additional functional elements and protocols would be utilized to facilitate the application of policy routing rules for call routing and transfers, such as the Policy Routing Function. The State could then go live with NG9-1-1 more quickly and in a capacity that equals the current legacy system's accuracy for call routing, which is achieved by the MSAG and selective router systems in place.

This approach could lead to reduced legacy costs, freeing up funds to assist local GIS authorities with data improvement efforts, and a steady increase of call routing accuracy over time.

Note that a Site/Structure Address Point layer would enhance call routing accuracy but would not be required initially to achieve call routing. NENA-STA-006.1-2018 identifies Site/Structure Address Points as a required layer, but also states there is no expectation of completeness of that layer. This layer can be used in tandem with Road Centerlines to validate locations, with Road Centerlines considered the priority for error resolution, and thus allowing a swifter timeline for NG9-1-1 geospatial call routing readiness.

Additional GIS Layers to Support Call Handling

Additional layers may also be integrated into the GIS dataset, but are not required to form an initial base dataset capable of routing live 9-1-1 calls. Per NENA-STA-006.1-2018, these layers may aide in the future functionality of the ECRF and LVF. Some examples of optional layers include:

- State boundaries
- County boundaries
- Municipal boundaries
- Unincorporated community boundaries
- Neighborhood boundaries (subdivisions, gated communities, etc.)
- Railroad centerlines

During the Project Initiation and GIS Data Collaboration meetings, GeoComm will work with the State to define the approach, agree upon which layers are initially included in the merged geodatabase, categories and priority of GIS QC checks, and error resolution strategies to support the NG9-1-1 deployment strategy ultimately adopted.

GIS Data Merging

Regardless of which layers are included in the initial statewide dataset, automated schema and geodetic transformation procedures will be executed to assimilate the source GIS data layers into an authoritative GIS data model compliant with the State's and NENA's evolving NG9-1-1 data standards. The GIS dataset will incorporate existing data from the local jurisdictions. The individual GIS data layers will then be merged into a statewide dataset.

After the data has been merged into a statewide dataset, it will again be processed through configured QC checks to determine the quality of the merged dataset. Results will be reported back to the State. Counties will be responsible for resolving errors found within their respective datasets and work with neighboring jurisdictions to resolve topology errors.

Phase Nine: GIS Derived MSAG Development and Processing

GeoComm will provide one-time services to build a GIS derived Master Street Address Guide (MSAG), as well as MSAG delta processing services to assist the State with maintaining ongoing synchronization between the State's NG9-1-1 Road Centerline layer, and the aforementioned GIS derived MSAG used by the Location Database (LDB).

GIS Derived MSAG Development

GeoComm will take the statewide Road Centerline layer and build a tabular MSAG based of the attributes included (referenced above as GIS derived MSAG). This service includes QC and verification that the deliverable meets the needs of the LDB provider.

MSAG Delta Provisioning

Once the GIS derived MSAG has been built, the ongoing process of detecting and delivering MSAG deltas will begin. This process consists of:

- Gathering the most current GIS data from GeoComm GIS Data Hub for the Alabama project
- Generating MSAG deltas via the changes detected to the State level GIS data on a once daily basis
- Modifying the delta file to conform to NENA 2.x format
- Performing QC checks to ensure the GIS changes create logical MSAG modifications
- Passing the files to the LDB provider by copying to an agreed upon location, such as using email, SFTP, or a web portal location

We will work with the State the LDB provider to establish a regular schedule for these services.

We are willing to discuss other options that are outside the scope of this agreement.

Phase Ten: Optional County GIS Data Correction Services

As stated in ATTACHMENT D TECHNICAL SPECIFICATIONS 1.2 Scope of Services,

"The Board desires that transition to NG9-1-1 Call Routing occur as quickly as possible, understanding that PSAP GIS systems and databases may require normalization and synchronization. Tools and processes that facilitate a rapid transition to a Statewide, NG9-1-1 Call Routing are required."

To that end, there may be cases where a county lacks sufficient local resources to accomplish normalization and synchronization in a timely manner and would benefit from GeoComm resolving data condition errors on their behalf. In these cases, we would work with local data authorities to update their GIS data to be compliant with applicable standards, based on the GIS Data Hub QC reports. This service is offered to each county and it is understood there will be counties who do not require this service.

GIS data updates could be provided as a one-time service to bring a county's data up to meet minimum standards at the onset of the project. However, counties may also choose to have GeoComm maintain their data, performing subsequent data updates thereafter, upon request.

The one-time data correction and recurring maintenance services are offered to county at two different service levels, Basic and Standard, based on desired level of call routing functionality, as described below.

- Basic: designed to encompass resolution of issues in the QC findings that have a direct impact on base call routing functionality. Included services are based on information in NENA-STA-006.1-2018
- Standard: an expanded version of Basic, includes the Basic service as well as error correction beyond base call routing and covers best practices to achieve more optimal routing decisions, with less dependency on policy routing rules

Note: Depending on the timeline and overall approach to geospatial call routing the State decides on, the tasks associated with the packages above may shift from Standard to Basic or vice versa.

Optional GIS Data Management Tools

To further facilitate a rapid transition to statewide NG9-1-1 call routing, having a powerful toolset to review, report on, and update the data will be invaluable. As an optional extension of the base GIS Data Hub system proposed to accomplish data QC and merging tasks, GeoComm offers GIS data management software applications to ensure local authorities have the tools to successfully prepare and maintain your GIS data to NG9-1-1 standards. These applications have been developed by GeoComm with the sole purpose of streamlining public safety GIS data maintenance tasks. They include:

Local County/PSAP GIS Data Remediation Tools	• **GeoComm Maintainer GIS Data Manager**: Esri-based GIS Data Management toolbar geared specifically for updating GIS data layers used in public safety mapping applications, such as road centerlines, address points, wireless cell sectors, community boundaries, and emergency response zones; deployed directly within your ArcGIS Desktop environment, exposing features and functions to increase the efficiency of GIS data editing tasks; QC audits to help keep data synchronized and free of errors • **GeoComm Maintainer MSAG Manager**: Add-on module to GeoComm Maintainer; used for building and updating the MSAG; a means to better manage the MSAG and GIS data synchronization levels • **GeoComm Submitter**: Provides an additional method to easily access GIS Data Hub and submit data in the fewest steps possible; an add-in for Esri ArcGIS Desktop
Regional/State-level GIS Data Collaboration and Remediation Tools	• **GeoComm Contributor**: Web-based application leveraged by outside users (non-data maintainers) to submit comments and data addition, deletion, and modification requests to GIS data maintainers for incorporation into the master GIS dataset; designed to be easily used by users with minimal or no training; configurable to generate two-way dialogue between users submitting information and contributions to the GIS dataset and the users maintaining the master GIS dataset.

When deployed and leveraged together with GIS Data Hub, these applications are a powerful, comprehensive 9-1-1 data management tools suite to assist you with identifying data condition and synchronization issues and a means to resolve them.

As GIS needs and skill levels may vary from county to county throughout the State, the options GeoComm offers provide solutions for varying GIS skillsets from no GIS experience to power users. Counties would have the option to leverage, some, all, or none of these tools depending on their needs.

Phase Eleven: Ongoing Operational Support

Ongoing GIS Data Transformation, Merging, QC, and Reporting

GIS Data Hub will provide ongoing GIS data transformation, merging, QC, and reporting which will result in the progressive improvement toward a single, seamless Statewide NG9-1-1 GIS dataset. Note that managed services will begin for each local jurisdiction after the initial load into GIS Data Hub is complete.

The ongoing services workflow will follow a similar workflow to that of the initial data upload, QC, and merging. As follows:

- Counties will upload GIS data updates to GIS Data Hub on an up-to-daily basis
- GIS data will undergo multiple configured QC checks
  - The QC checks will be executed prior to data updates being merged into the statewide dataset
  - The QC checks will report concerns with topology and data integrity, and ultimately ensure only accurate GIS data is included in the statewide NG9-1-1 GIS dataset used in ECRF and LVF
  - The QC checks will include evaluation of spatial and attribute data based on compliance with NENA and State data model standards
- Data quality reports will be delivered to each respective local jurisdiction. Local jurisdictions will be responsible for updating data to adhere to the applicable standards.
- Local jurisdictions or GeoComm (depending on the final contract) will correct the GIS data errors outlined in the data quality reports provided by the system and resubmit updated data back to GIS Data Hub
  - Local jurisdictions may find the data quality reports to be beneficial in determining the roles, responsibilities, authority, experience, training, and ongoing hours of effort it will require to improve the data for NG9-1-1
- After the data is evaluated with the QC checks, it is transformed and merged into the format required for the NG9-1-1 System

This process will result in a continuous feedback loop of GIS data updates from the local jurisdictions, GIS data performance measurements and reporting, data transformation, and merged.

Synchronization with the MSAG and ALI Database

As part of every map data upload, GIS Data Hub will perform a comparison between the GIS data and the MSAG, and the GIS data and the ALI Database and report results back to local authorities. The results will be a valuable resource for local authorities in keeping their GIS data synchronized with the MSAG and ALI database, as well as a metric for measuring progress toward required synchronization levels. Results will be compiled into reports and made accessible to the State and counties. A new ALI and MSAG are not required for each upload. Comparisons will be completed on the most recent data, ALI, and MSAG submitted. It is important to note that if end users update their MSAG and ALI databases as a result of reported discrepancies, the same discrepancies will continue to be reported until an updated MSAG and ALI are submitted for fresh comparison.

Merged NG9-1-1 GIS Database Provisioning

After the data has been merged and has passed required QC checks, it is transferred from GeoComm SI to the ECRF and LVF for geospatial call routing. GeoComm SI is a NENA i3 compliant Spatial Interface for transmitting GIS data updates from the authoritative GIS database system and applying to ECRF and LVF database, whether or not the ECRF and LVF are sourced by GeoComm. In addition, GeoComm SI supports non-NENA-standard ECRF and LVF GIS database update formats such as Esri file geodatabase. The State's merged GIS database would be made available via GeoComm SI to the ECRF vendor to provision to their ECRF system. If necessary, GeoComm can accommodate any Esri GIS format required by an ECRF and LVF vendor.

Conclusion

We are excited for the opportunity to collaborate with the State and counties for the successful planning, implementation, and operation of your 9-1-1 GIS Integration Solution Project.

GeoComm's project philosophy for over two decades has been about developing customer partnerships to achieve the requirements for improving 9-1-1 public safety service delivery – ultimately to improve the lifesaving 9-1-1 system through GIS implementation. Your project is important, and we are ready to get started.