



FY17

PSAP GRANT PROGRAM APPLICATION





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HOW TO APPLY/DEADLINE

The grant application is available and accessible from VITA ISP's website (<http://www.vita.virginia.gov/isp/default.aspx?id=8578>). Upon completion of the application, it is to be submitted to your Regional Coordinator. Any supporting documentation must also be submitted along with the application, including mandatory budgets for projects (if applicable).

After the close of the grant application cycle, a Grant ID and email receipt notification will be sent to the e-mail address listed on the application received.

All funding requests must be submitted using the grant application. Technical assistance is available from VITA's Public Safety Communications (PSC) staff throughout the grant process. The FY17 PSAP Grant Application Cycle starts July 1, 2015 and concludes on September 30, 2015 at 5:00 pm.

ALL APPLICABLE SECTIONS MUST BE COMPLETED IN ITS ENTIRETY OR THE APPLICATION WILL BE CONSIDERED INCOMPLETE AND NOT ACCEPTED FOR CONSIDERATION.



FY17 PSAP GRANT APPLICATION

PROJECT TITLE

Roanoke Valley NG-9-1-1 Shared Services Project

GRANT APPLICANT PROFILE/PROJECT CONTACT

PSAP/HOST PSAP NAME: County of Roanoke

CONTACT TITLE: GIS Manager

CONTACT FIRST NAME: David

CONTACT LAST NAME: Wray

ADDRESS 1: 5925 Cove Rd.

ADDRESS 2: 2T

CITY: Roanoke

ZIP CODE: 24019

CONTACT EMAIL: dwrap@roanokecountyva.gov

CONTACT PHONE NUMBER: 540-777-8564

CONTACT MOBILE NUMBER: 540-588-2861

CONTACT FAX NUMBER: 540-777-9772

REGIONAL COORDINATOR: Stefanie McGuffin

HOST PSAP AND PARTICIPATING PSAPS/LOCALITIES

County of Roanoke (Host)

City of Roanoke

City of Salem

GRANT TYPE

Individual PSAP

Shared Services



TIER

- | | |
|---|--|
| <input type="checkbox"/> Out of Service | <input type="checkbox"/> Non-Vendor Supported* |
| <input checked="" type="checkbox"/> Technically Outdated* | <input type="checkbox"/> Strengthen |
| <input type="checkbox"/> Not Applicable | |

If technically outdated or non-vendor supported, application MUST include age and/or version of hardware/software.

VERSION: ArcGIS 10.2.2. # YEARS of HARDWARE/SOFTWARE: 1 year

PRIORITY/PROJECT FOCUS NG 9-1-1 GIS EQUIPMENT & SERVICES

FINANCIAL DATA

Amount Requested: \$ 502,442.48

Total Project Cost: \$ 552,686.73

STATEMENT OF NEED

This statement should reference the relationship to the current funding priorities established by the Grant Committee and include evidence of any financial need, along with additional information on the impact on operational services; consequences of not receiving funding; inclusion of project in a long-term or a strategic plan; and local sustainability:

Geographic Information Systems (GIS) is vital to the success of NG 9-1-1. A dynamic and spatially correct homogenous NG 9-1-1 dataset is necessary for the entire Roanoke Valley area. Currently, there is no local funding available for this shared project and it is not likely to be completed without proper funding. Each partner will use their current IT infrastructure and personnel to support this project. The grant funding request is 90 percent of the total project cost. The other 10 percent of the project cost is the project time personnel from each locality to work on this venture. GIS is vital to the success of NG 9-1-1, therefore we are requesting the Commonwealth of Virginia fund this worthwhile endeavor.



Describe how the grant will be maintained and supported in the future, if applicable.

The grant will be maintained and supported in the future by current staff at each locality. Current infrastructure will be used to support the Roanoke Valley NG-9-1-1 Shared Services Project. The NG-9-1-1 final dataset should be less than 100 GB therefore having a minimal impact on current resources. Additional hardware including one Application Server (production), a second Application server (development), one SQL Server and one 750 Gigabyte hard drive (file share) will be required to perform the geoprocessing tasks for this project. **In the future, the County of Roanoke, City of Salem and City of Roanoke will need to maintain and replace all required hardware and software.** The hardware will allow Real-Time NG-9-1-1 valid seamless dataset for City of Roanoke, County of Roanoke and City of Salem. This project will support PSAP readiness for future technology and enhance the current efficiency of each PSAP.

COMPREHENSIVE PROJECT DESCRIPTION

Identify the longevity or sustainability of the project.

Once this project has been completed. The GIS tools, data and workflows will be in place to make this project sustainable over the long-haul. All partners will be aware of the sustainability plan and what services that we plan to sustain. In the future, it is possible to expand this project to nearby localities to create a regional Real-Time NG-9-1-1 valid seamless dataset. This project will support PSAP readiness for future technology and enhance the current efficiency of each PSAP.



Describe how this project supports the Virginia Statewide Comprehensive 9-1-1 Plan.

The goal of this project is to create a Real-Time NG-9-1-1 valid seamless dataset for City of Roanoke, County of Roanoke and City of Salem PSAP. The data will have the following feature datasets Road Centerlines, Address Building Points and/or Polygons, Emergency Service Zones, PSAP Boundaries, Authoritative Boundaries and County / Municipal Boundaries. This project will support PSAP readiness for future technology and enhance the current efficiency of each PSAP.

SHARED SERVICES (if applicable)

The relationship of the project to the participating PSAPs:

The project will use each PSAPs authoritative data to create a Real-Time NG911 valid seamless dataset. Road Centerlines, Address Building Points and/or Polygons, Emergency Service Zones, PSAP Boundaries, Authoritative Boundaries and County / Municipal Boundaries. The seamless dataset will be available for each PSAP in both CAD and GIS production environments.

Intended collaborative efforts:

The project will collaborate with County of Roanoke, City of Roanoke and the City of Salem. The following tasks will need to be completed.

- 1) Each locality will create and maintain a Real-time or near Real-time Rest Endpoint (Feature Service) of the GIS Data listed above.
- 2) Each dataset will be merged together to create one seamless dataset for the Roanoke Valley Area. Data manipulation, Verification and Enhancement will be completed during this process.
- 3) A New Rest Endpoint will be published of the seamless Roanoke Valley GIS Dataset including Road Centerlines, Address Building Points and/or Polygons, Emergency Service Zones, PSAP Boundaries, Authoritative Boundaries and County / Municipal Boundaries.
- 4) The New Rest Endpoint will be consumed by each locality's PSAP emergency Services mapping application. The data will either be Real-Time or Scheduled/On-Demand.



Resource sharing:

Each partner uses the Esri ArcGIS Platform for GIS production. This project will leverage this platform for interface compatibility and allow each partner to share and disseminate their Geographic Information in their compatible CAD format.

How does the project impact the operational or strategic plans of the participating agencies:

This project does not have an impact on the operational or strategic plans for each agency. This project does provide an additional disaster recovery capability by leveraging each agencies Esri ArcGIS Platform to share Geographic Information.



Provide a thorough, concise, and complete description of the project, including an outline of the goals and objectives, implementation strategy, and a work plan.

Description:

Location data has always been central to 9-1-1 to help direct response teams to the appropriate destination. Now, some of the same technological evolutions that inspired NG 9-1-1 can also be adopted to foster increased quality, reliability, and consistency in the underlying location data.

The ever increasing presence of GIS paralleled by advances in location technology offer an opportunity to streamline regional data management and access. Within the Roanoke Valley, three local governments share a vision for collaborative initiative to establish a dynamic, seamless, regional dataset designed to support the corresponding PSAPs.

Roanoke County, the City of Roanoke and the City of Salem are looking to leverage GIS to compile, manage and host web based map services that represent the most up-to-date versions of the datasets from each locality. The core data would be comprised of road centerlines, address points, building footprints, emergency service zones, PSAP boundaries, and authoritative administrative boundaries.

The challenge, of course, is that much of the data resides within disparate databases with varying data models (schemas) and diverse maintenance processes. As such, this proposal for grant funds would be leveraged to help accomplish the following:

- Facilitate the creation of a data service or feed at each locality containing the core datasets referenced above.
- Establish processes for the local data service/feed to be updated in real or near-real time.
- Develop automated data acquisition methods to consolidate data sources.
- Create a series of advanced scripts to extract, transform and load (ETL) each data source into a standard data schema.
- Accommodate programmatic validation and manipulation techniques to ensure an accurate, consistent and seamless merging of data.
- Construct the new regionalized version of the data as a centrally hosted service that can be generically consumed across communities.
- Facilitate distribution of the data back to each locality to serve as a multi-point failover strategy.

Implementation Strategy:

The implementation strategy underlying the proposed concept is a multi-faceted, highly collaborative process that spans five key phases:

- *Planning & Analysis:* This phase includes both preparatory activities (project authorization, RFP development/release, selection process) and project initiation and controls (kick-off meetings, working sessions, status meetings and progress reporting).
- *Design:* The Design phase is intended to identify and document the detailed approach through a highly collaborative process. The design will span technical coordination and logistics, data reviews and crosswalks, schema development, system infrastructure design and code framing.
- *Development:* Development is where the core work will be undertaken and where design is translated into operational solutions. Within this phase, the team will implement processes and access points, develop the automation procedures (scripts) to acquire and transform the data, establish logging and reporting, publish & distribute the data, and craft system and administrative documentation.
- *Testing & Acceptance:* With any solution, testing is a requisite step, but a multi-agency solution requires additional effort to ensure that all aspects of the solution are reviewed both together and independently. Within this phase, stakeholders from all groups will have the opportunity to participate in a review and feedback process that will, in turn, drive iterative refinements.
- *Implementation:* The final phase of core activities is comprised of deploying all infrastructure, data, scripts, services, and applications to the production environment. During implementation, the team will provide onsite knowledge transfer and deliver final documentation to support ongoing maintenance of the system, while simultaneously coordinating system release for day-to-day access.
- *Post-Implementation:* Post-implementation is intended to support the transitional period immediately following system release, during which both administrators and users may have questions, and to address any issues that arise from formal adoption or increased utilization.

The following table outlines the work plan in a structure consistent with the phases described above:

Planning & Analysis

Roanoke Valley NG-9-1-1 Prep Activities
Detailed Project Planning
Kick-Off, Status and Working/Review Meetings
Progress Reporting

Design

Collaborative Discovery Workshop
Data Acquisition, Review & Crosswalks
Schema Design, Review Meetings & Process Documentation
System Infrastructure Requirements & Design
Automation Methodology Development
Process Monitoring & Logging Approach

Development

Establish Data Access Controls, Structure & Technical Logistics
Software Installation, Configuration
System Deployment & Configuration
Schema Implementation & Database Administration
Manual Data Manipulation (One Time Process)
Manual Data Creation (One Time Process)
Develop Data Automation (Acquisition, Validation, ETL, Stitching, Error Handling, Logging)
Prepare Monitoring & Access Application
Analytical Reporting
Design & Publish Regional Map Service Design (Configuration, Cartography)
Draft Design Documentation Updates (per implementation)
Draft Administration Documentation

Testing & QA

Configure & Manage Feedback Tracking Solution (JIRA)
Onsite Coordination, Review, Training
Data Review & Validation
System/Process Review & Validation
Acceptance Testing Support
Script Revisions/Refinement
App Revisions/Refinement
Testing Coordination & Reporting Meetings

Implementation

Finalize Documentation
Knowledge Transfer
Production Environment Setup
Production Script/Service Deployment
Production App Deployments
Release Coordination
Post Implementation Support



**PROJECT TIMELINE FOR
SHARED SERVICES & INDIVIDUAL PSAP APPLICATIONS:**

For each applicable phase of the project, indicate the estimated completion date. Sample activities for each phase are included.

| PROJECT PHASE | ESTIMATED COMPLETION DATE |
|---|---------------------------|
| <input checked="" type="checkbox"/> INITIATION (Project approved by appropriate stakeholders) Sample activities: project concept is documented, local board or governing authority approval or endorsement is received, PSAP grant application is filed, local budgets are obtained, appropriated grant funds are approved, and budgetary estimates are obtained | 10 / 1 / 16 |
| <input checked="" type="checkbox"/> DESIGN/PLANNING (Project, system, or solution requirements are developed) Sample activities: requirements are documented, components to be purchased are identified, and general design is documented | 12 / 31 / 16 |
| <input checked="" type="checkbox"/> ACQUISITION (Selected system or solution is procured) Sample activities: RFP (or other bid related processes) are drafted, proposals are evaluated, contract is signed, purchase orders are issued, and quotes are obtained | 10 / 31 / 16 |
| <input checked="" type="checkbox"/> IMPLEMENTATION (Selected system or solution is configured and installed) Sample activities: purchased components are delivered and installed and training is performed | 6 / 30 / 17 |
| <input checked="" type="checkbox"/> TESTING/COMPLETION (Selected system or solution is tested and put in production) Sample activities: performance of system/solution is validated and system/solution goes "live" | 9 / 30 / 17 |



BUDGET AND BUDGET NARRATIVE

List the planned expenditures to be made with grant funds. (NOTE: In lieu of a line item breakdown, an itemized cost schedule or detailed vendor prepared quote may be submitted as an attachment. However, budgetary quotes received from a particular vendor(s) during the application process do not commit the PSAP to use that vendor(s) once the grant is awarded.) Briefly explain the reason for each requested budget item and provide the basis for its cost. In addition, if contingency cost has been added, please identify the amount.

Please see attached quote from GIS Inc. vendor for professional services. Also, below is each requested budget item and the basis for its cost.

| Item | Cost | Basis |
|--|--------------|---|
| Planning and Analysis (Prof. Services) | \$50,000.00 | Detailed project planning |
| Design | \$53,000.00 | Data acquisition, schema design, system infrastructure design, develop automation methodology and process monitoring and logging approach. |
| Development | \$155,000.00 | Perform technical logistics, install software, configure software, system deployment and configuration, database administration, create routable network dataset and develop data automation. |
| Application Server (Prod. & Dev.) | \$26,970.16 | Data Automation and Scripting |
| MS SQL Database Server | \$22,387.00 | Database Server and Storage |
| Personnel | \$69,030.00 | Data validation and coordination |
| Technology Equipment | \$6,029.49 | Precision Workstation and monitor |
| Small Equipment & Supplies | \$2,500.00 | Phone and office equipment |
| Travel | \$1,000.00 | Travel cost |
| Reimbursable Expenses | \$600.00 | Misc. Expenses |
| Testing & QA | \$44,000.00 | Test, track feedback, train, data validation, system validation, refine scripts, Refine application and coordinate testing. |
| Implementation | \$48,000.00 | Finalize documentation, knowledge transfer, setup production environment, deploy production service, deploy production application, release coordination and post implementation support. |
| Contingency(5 percent) | \$23,925.83 | |
| Total | \$502,442.48 | |

EVALUATION

How will the project be evaluated and measured for achievement and success:

This project will use the following measurements:

- PSAPs have adopted the mutually agreed upon processes for data sharing.
- Establish a hosting environment that meets the service level needs of the participating PSAPs.
- An automated, end-to-end data process with minimal periodic administrative oversight has been successfully established.
- Achieve a viable and consistent regional dataset that can support PSAP operations.
- Satisfy the collaboratively derived definition of "near real time" regional data.
- Demonstrate a fully operational, regionalized, seamless dataset to support that participating PSAPs.
- Transfer knowledge from the execution team to the administration team and user base.



CONSOLIDATION (Primary or Secondary) - (complete only if applicable)

How would a consolidation take place and provide improved service:

2T

How should it be organized and staffed:

2T

What services should it perform:

2T



How should policies be made and changed:

2T

How should it be funded:

2T

What communication changes or improvements should be made in order to better support operations:

2T



**GSA Contract Number:
GS-35F-0682R**

September 16, 2015

David Wray
GIS Manager
Roanoke County
5925 Cove Rd.
Roanoke, VA 24014

Dear David,

Geographic Information Services, Inc. (GISi) is pleased to submit the following Rough Order-of-Magnitude (ROM) estimate for services associated with the development of regional PSAP dataset for the Roanoke Valley, inclusive of Roanoke County, the City of Roanoke and the City of Salem.

Based on our conversations, we have established an approach consistent with the concepts and objectives of the regional initiative. Ultimately, the project would result in a centrally hosted dataset encompassing core data layers that are updated in "near real time" and which would be designed to facilitate transportation network-based routing (a routable network), along with the corresponding infrastructure, processes and procedures.

This ROM does not constitute a formal proposal, which we would be glad to submit at the request of Roanoke County upon award of the FY17 PSAP Grant.

I want to thank you for the opportunity to work together. If you have questions or need additional information please do not hesitate to contact me. We look forward to the opportunity to support you with this project!

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin Stewart".

Kevin Stewart
Managing Partner
Geographic Information Services, Inc.
2100 Riverchase Center, Suite 105
Birmingham, AL 35244
Phone: 205.941.0442 ext.135 | Cell: 205.807.8081
Email: kstewart@gisinc.com





I. Scope of Work

Roanoke County, as the lead participant in the pursuit of the FY17 PSAP Grant, has requested a budgetary estimate or rough order of magnitude (ROM) quote from GISi for services in support of the development of a regional PSAP dataset. The dataset is intended to be dynamically derived (“near real time”) from the disparate spatial data sources associated with each participating locality (Roanoke County, the City of Roanoke, and the City of Salem).

The approach proposes to bridge the gap between the logistics and the technical by adopting a highly collaborative process and leveraging contemporary location based technology. From the logistical or coordination perspective, each participating agency will contribute both data and input to guide a consolidated model that also conforms to NENA 19 standards. The resulting model may be optionally adopted as the operational structure by the localities, but this is not strictly required. Each locality will, however, need to provide access to data and attempt to employ procedures that assure the shared data is up-to-date.

Subsequently the team will programmatically retrieve the data, apply a series of advanced transformative scripts founded on concepts within the extract, transform and load (ETL) process, and dynamically publish the resulting dataset via web-based map services (REST). The parameters that guide the automated handling of the data will be identified and documented through a collaborative design process to ensure that all requirements are defined. The requirements will further solidify the baseline against which overall success will be measured.

Details of the design and subsequent implementation will have to be worked out through further discussion and within the strategy workshop. The final approach will be driven by the County with guidance and advice from GISi and the formally proposed implementation services costs will be adjusted accordingly.

GISi has provided a high-level scope of work (fine grain tasks are aggregated) outline for this project.

Planning & Analysis

- Detailed Project Planning
- Kick-Off, Status and Working/Review Meetings (On and Offsite)
- Progress Reporting

Design

- Collaborative Discovery Workshop
- Data Acquisition, Review & Crosswalks
- Routable Dataset Source Data Review
- Schema Design, Review Meetings & Process Documentation
- System Infrastructure Requirements & Design
- Automation Methodology Development



Process Monitoring & Logging Approach

Development

- Establish Data Access Controls, Structure & Technical Logistics
- Software Installation, Configuration
- System Deployment & Configuration
- Schema Implementation & Database Administration
- Manual Data Manipulation (One Time Process)
- Data Generation Oversight & Review
- Routable Network Data Creation Oversight, Review & Strategic Guidance
- Develop Data Automation (Acquisition, Validation, ETL, Stitching, Error Handling, Logging)
- Prepare Monitoring & Access Application
- Analytical Reporting
- Design & Publish Regional Map Service Design (Configuration, Cartography)
- Draft Design Documentation Updates (per implementation)
- Draft Administration Documentation

Testing & QA

- Configure & Manage Feedback Tracking Solution (JIRA)
- Onsite Coordination, Review, Training
- Data Review & Validation
- System/Process Review & Validation
- Acceptance Testing Support
- Script Revisions/Refinement
- App Revisions/Refinement
- Testing Coordination & Reporting Meetings

Implementation

- Finalize Documentation
- Knowledge Transfer
- Production Environment Setup
- Production Script/Service Deployment
- Production App Deployments
- Release Coordination
- Post Implementation Support



II. ROM Pricing

GISi will prepare a detailed and formal quote to be proposed as a firm fixed price project (leveraging rates from GSA contract number GS-35F-0682R) upon request of Roanoke County and follow grant award. The following table presents a best estimate for the anticipated tasking associated with each phase, as outlined above.

| | |
|-------------------------|-------------------|
| Planning & Analysis | \$+/- 50k |
| Design | \$+/- 53k |
| Development | \$+/- 155k |
| Testing & QA | \$+/- 44k |
| Implementation | \$+/- 48k |
| ESTIMATED TOTAL* | \$+/- 350k |

**This is a ROM estimate. Specific project requirements have not been provided and/or reviewed in great enough detail to create an actual project budget or quote. GISi provides a ROM level of effort estimate for general planning purposes only; a ROM does not constitute a quote and the actual project price will vary.*

ROM Terms and Conditions

This confidential ROM is valid for thirty (30) days unless otherwise stated and does not include shipping or tax unless otherwise stated. This ROM information is proprietary and may not be copied or released other than for the express purpose of system and service selection and purchase. This information may not be given to outside parties or used for any other purpose without written consent from Geographic Information Services, Inc. (GISi).



GRANT PROCESSING REQUEST FORM

Department of Finance

| | | | | |
|--|--------------|---|-------|---------------------------------------|
| DATE: September 22, 2015 | | | | |
| DEPARTMENT: Communications & Information Technology | | | | |
| GRANT PROGRAM: Public Safety Answering Point (PSAP) | | | | |
| GRANTING AGENCY: Virginia Information Technologies Agency | | AGENCY CONTACT: Stefanie McGuffin | | AGENCY PHONE NO: 540-579-4459 |
| IF FEDERAL GRANT... CFDA # | | EXAMPLE OF NUMBER Dept: Department of Education (Agency No.) 84.XXX (Grant Program No.) | | |
| PROGRAM TITLE: PSAP Grant Program | | | | |
| FUNDING REQUEST: | | | | |
| FEDERAL | STATE | LOCAL MATCH | OTHER | TOTAL REQUEST |
| \$0 | \$502,442.48 | \$0 | \$0 | \$502,442.48 |
| IF LOCAL MATCH IS REQUIRED, ARE FUNDS AVAILABLE IN DEPARTMENT BUDGET? Y/N | | | | |
| ACCOUNT TO WHICH THE MATCH WILL BE CODED: | | | | |
| INDIRECT COSTS? Y/N N | | AMOUNT | | |
| REIMBURSEMENT GRANT? Y/N Y | | | | |
| FINANCIAL & PROGRESS REPORTS PREPARED BY: Y Department Y Finance | | REQUEST FOR FUNDS SUBMITTED BY: Department Y Finance | | |
| PROJECT DIRECTOR: Bill Hunter | | | | |
| PHONE: 540-777-8552 | | FAX: 540-777-9772 | | EMAIL: bhunter@roanokecountyva.gov |

| | | |
|--|----------------------------------|-------------------------|
| DEPT. DIRECTOR OR THEIR DESIGNEE APPROVING SUBMISSION: <i>William F. Hunter</i> | SIGNATURE: <i>[Signature]</i> | DATE: <i>9/22/15</i> |
|--|----------------------------------|-------------------------|

| | | |
|---|----------------------------------|-------------------------|
| REVIEWED & APPROVED BY FINANCE: <i>Amy Huffman</i> | SIGNATURE: <i>[Signature]</i> | DATE: <i>9/22/15</i> |
|---|----------------------------------|-------------------------|

| | | |
|--|----------------------------------|-------------------------|
| REVIEWED & APPROVED BY COUNTY ADMINISTRATION: <i>Thomas Gates</i> | SIGNATURE: <i>[Signature]</i> | DATE: <i>9/25/15</i> |
|--|----------------------------------|-------------------------|