



**FY19**

# **NG-911 GRANT PROGRAM APPLICATION**



VIRGINIA INFORMATION  
TECHNOLOGIES AGENCY  
Integrated Services Division



## FY19 NG-911 GRANT PROGRAM APPLICATION

### 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 the electronic mailbox for grant applications - [psapgrants@vita.virginia.gov](mailto:psapgrants@vita.virginia.gov). Any supporting documentation must also be submitted along with the application when making your grant application submission.

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 FY19 NG-911 Grant Application Cycle starts July 1, 2017 and concludes on October 2, 2017 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.**



## FY19 NG-911 GRANT APPLICATION

### PROJECT TITLE

2T

### GRANT APPLICANT PROFILE/PROJECT CONTACT

PSAP/HOST PSAP NAME: Buckingham County 9-1-1  
 CONTACT TITLE: E-911 coordinator  
 CONTACT FIRST NAME: Kevin  
 CONTACT LAST NAME: Flippen  
 ADDRESS 1: 13380 W James Anderson Hwy  
 ADDRESS 2: P. O. Box 252  
 CITY: Buckingham  
 ZIP CODE: 23921  
 CONTACT EMAIL: kflippen@buckinghamcounty.virginia.gov  
 CONTACT PHONE NUMBER: 434-969-7734 2T  
 CONTACT MOBILE NUMBER: 434-392-7774  
 CONTACT FAX NUMBER: 434-969-1638  
 REGIONAL COORDINATOR: Stefanie McGuffin

### HOST PSAP AND PARTICIPATING PSAPS/LOCALITIES

<b>Buckingham County 9-1-1-</b>	

### GRANT TYPE

- Individual PSAP                       Shared Services



**Non-vendor supported application MUST include age and/or version of hardware/software, **along with a copy of the notice from the vendor.****

VERSION:

# YEARS of HARDWARE/SOFTWARE:

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**PRIORITY/PROJECT FOCUS** NG 9-1-1 GIS

**FINANCIAL DATA**

Amount Requested: \$ \$23,900

Total Project Cost: \$ 23,900



## PROJECT DESCRIPTION

This project will validate the County's Roads, ESN, MSAG, Address Point, and Boundary data and also validate against these layers the MSAG report and ALI database for 9-1-1 services. Buckingham County's map data has gone years without such review and checks. With the coming of NextGen 9-1-1 it is important to us to have our data checked and cleaned so that we are prepared for the migration to it.

The purchase services for this project directly supports the continuity and enhancement of wireless E-911. **The project is perfectly aligned with long-term strategies for NG911 by updating GIS data to NG911 standards and the impact on operational services is significant.** According to the Virginia Statewide Comprehensive Plan and the perspective of all citizens, "the establishment and adoption of 9-1-1 service ensured that in an emergency any caller throughout the country could dial three easily memorized digits and quickly have local first responders come to his or her aid." However, quality GIS data is critical to this vision. This project would restore GIS data accuracy, and brings us reliable geographic data that citizens expect when they dial 9-1-1.

Buckingham County is very rural and funds for budgets are very limited. We hope to obtain this grant so that we can continue to provide the best possible emergency services.

Below is a summary of services we desire to obtain for this project:

### Project Services Summary

King-Moore, Inc. will complete several GIS Services to assist Buckingham County VA in meeting anticipated GIS requirements for Next Generation 9-1-1 (NG9-1-1). Services include:

- 9-1-1 Data Analysis* to provide an overview of accuracy and synchronization issues within Buckingham County's GIS Data, MSAG, and Automatic Location Identification (ALI) database.
- Recommendations Reporting* to document enhancements that will help prepare the region's GIS data for use in a mission-critical NG9-1-1 system.
- GIS Data Remediation* to execute recommended enhancements and resolve a portion of the issues identified in the 9-1-1 data analysis report.
- Advanced GeoLynx DMS Training* to prepare Buckingham County staff to identify, investigate, and resolve GIS data errors using existing GeoLynx DMS software.
- GIS Workflow Consulting* to develop QA/QC workflows that will ensure Buckingham County GIS data remains accurate, up-to-date, and NG9-1-1 compliant after project completion

In addition to the services listed, we are also seeking an upgrade to our hardware and software to better work with the GIS data sets and enhancements.



## PROJECT GOAL

Describe how this project addresses locally identified need(s) and supports the Virginia 9-1-1 Comprehensive Plan:

The purchase services for this project directly supports the continuity and enhancement of wireless E-911. **The project is perfectly aligned with long-term strategies for NG911 by updating GIS data to NG911 standards and the impact on operational services is significant.** According to the Virginia Statewide Comprehensive Plan and the perspective of all citizens, “the establishment and adoption of 9-1-1 service ensured that in an emergency any caller throughout the country could dial three easily memorized digits and quickly have local first responders come to his or her aid.” However, quality GIS data is critical to this vision. This project would restore GIS data accuracy, and brings us reliable geographic data that citizens expect when they dial 9-1-1.

## PROJECT OBJECTIVES

Describe the objectives that will support the goals identified above:

The objectives of this project is to obtain a 98% to 99% match rate between the 911 mapping data and the MSAG/ALI database. It is also to cleanup issues with topology and data attribution and the relationship between the data layers so that in preparing for NG-911 the data is ready and accurate for routing calls to Buckingham and responding to calls. The workflow portion of the project has the objective of establishing the process and procedures for county staff to continue the maintenance of good data quality. It is also mean to help staff become more unified in identifying issues as they occur in the future and resolving in a timely accurate manner.



**SHARED SERVICES (if applicable)**

Describe the relationship of the project to the participating PSAPs:

2T

Describe the intended collaborative efforts and resource sharing opportunities:

2T



**IMPLEMENTATION PLAN  
SHARED SERVICES & INDIVIDUAL PSAP APPLICATIONS:**

For each applicable phase of the project, indicate the planned completion date.

<b>PROJECT PHASE</b>	<b>PLANNED COMPLETION DATE</b>
<b>INITIATION</b> – Project concept is documented, local board or governing authority approval or endorsement is received, NG-911 Grant application is filed, local budgets are obtained, appropriated grant funds are approved, and budgetary estimates are obtained.	<b>04 / 15 / 18</b>
<b>DESIGN/PLANNING</b> - Requirements are documented, components to be purchased are identified, and general design is documented.	<b>05 / 15 / 18</b>
<b>ACQUISITION</b> - RFP (or other bid related processes) are drafted, proposals are evaluated, contract is signed, purchase orders are issued, and quotes are obtained.	<b>07 / 15 / 18</b>
<b>IMPLEMENTATION</b> - Purchased components are delivered and installed and training is performed	<b>11 / 01 / 18</b>
<b>TESTING/COMPLETION</b> - Performance of system/solution is validated and system/solution goes “live”	<b>12 / 01 / 18</b>





## BUDGET AND BUDGET NARRATIVE

List the planned expenditures to be made with grant funds. 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.

**NOTE:** In lieu of a line item breakdown, an itemized cost schedule or detailed vendor prepared quote may be submitted as an attachment, but a narrative is still required. 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.

See attached quote

The attached quote for \$19,400 covers the 911 data analysis, recommendations report, clean up of said data, training, and maintenance.

\$4,500 – Dell ruggedized laptop and newest version of ArcGIS.

TOTAL \$23,900

## EVALUATION

How will the project as identified in the project description be evaluated and measured for achievement and success:

2T



**PHYSICAL CONSOLIDATION - (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



**PHYSICAL CONSOLIDATION - (complete only if applicable) – continued**

How should it be funded:

2T

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

2T



Kevin Flippen  
Emergency Services Coordinator  
1360 West James Anderson Hwy  
Buckingham VA 23921

Date: 9/25/2017

**RE: Quote for NG-911 Data Workflow, Analysis, and Validation**

Below is a quotation for the purpose of conducting a NG-911 data workflow, analysis, and validation. Below is a summary of the services involved and pricing. Attached to this quote is an exhibit that explains in more detail the scope of the work involved and deliverables.

Project Services Summary

King-Moore, Inc. will complete several GIS Services to assist Buckingham County VA in meeting anticipated GIS requirements for Next Generation 9-1-1 (NG9-1-1). Services include:

- 9-1-1 Data Analysis to provide an overview of accuracy and synchronization issues within Buckingham County’s GIS Data, MSAG, and Automatic Location Identification (ALI) database.
- Recommendations Reporting to document enhancements that will help prepare the region’s GIS data for use in a mission-critical NG9-1-1 system.
- GIS Data Remediation to execute recommended enhancements and resolve a portion of the issues identified in the 9-1-1 data analysis report.
- Advanced GeoLynx DMS Training to prepare Buckingham County staff to identify, investigate, and resolve GIS data errors using existing GeoLynx DMS software.
- GIS Workflow Consulting to develop QA/QC workflows that will ensure Buckingham County GIS data remains accurate, up-to-date, and NG9-1-1 compliant after project completion

Project Pricing

Description	Price	
Project Initiation and Local Project Coordination	\$1,800	
9-1-1 Data Analysis	\$1,500	
Recommendations Report	\$2,600	
Execution of Recommended Enhancements and Data Cleanup	\$7,500	
Staff Training	\$2,000	
Maintenance Workflow Consulting	\$4,000	
	\$19,400	Total

Respectfully submitted,

Brandon Moore, GIS President  
King-Moore, Inc.  
276.356.8224 or [moore@king-moore.com](mailto:moore@king-moore.com)

## Appendix A

### Project Detail

The Buckingham County Map Validation project will be executed in the following six phases to ensure timely project completion:

- Phase One: Project Initiation
- Phase Two: 9-1-1 Data Analysis
- Phase Three: Recommendations Report
- Phase Four: Execution of Recommended Enhancements
- Phase Five: Transition and Training
- Phase Six: GIS Maintenance Workflow Consulting

Additional details about each phase are included on the following pages, along with a summary of King-Moore deliverables.

### Phase One: Project Initiation

#### Project Preplanning Teleconference

King-Moore's Project Manager will conduct a project preplanning meeting conference call with Buckingham County's project manager to discuss the scope of the project, request resources, and identify project stakeholders. This information is essential to King-Moore in planning for additional information gathering, on-site meetings, and for the timely and successful project completion. During the preplanning teleconference, a more in-depth project initiation meeting will be scheduled for a mutually agreeable time.

#### Internal Team Meeting

Following the Project Preplanning Teleconference, the King-Moore project team will hold an internal meeting to make certain the entire project team has a solid understanding of Buckingham County's project goals. The King-Moore project manager will provide the King-Moore team with information regarding any nuances in the scope of work, anticipated schedule, and their individual responsibilities for the project. This is an effective step to ensure the project's successful and timely completion.

#### Project Initiation Meeting

After the teleconference and internal meeting, an on-site project initiation meeting will be conducted. During this meeting, the King-Moore project team will present our specific approach to the project and the anticipated project schedule. King-Moore will work with Buckingham County's project manager to finalize the agenda for this meeting. At this and subsequent on-site meetings, King-Moore will be represented by our Local Project Manager, Brandon Moore; the rest of the project team will participate via teleconference.

#### Interviews and Data Collection

After the conclusion of the planning meeting, King-Moore's GIS Project Manager will conduct individual meetings and interviews with project stakeholders and other relevant personnel involved with GIS data maintenance to understand existing processes.

During these meetings and interviews, King-Moore will undertake the following activities to gather information regarding current maintenance processes:

- Collect information regarding the current software in place
- Meet with relevant stakeholders to gather their steps used throughout the current processes
- Interview managers and staff relative to the perception of current processes
- Compile lists of future needs and requests by the stakeholders
- Discuss technical parameters of the existing systems

### Phase Two: 9-1-1 Data Analysis

King-Moore will perform an analysis that will provide an overview of issues related to the accuracy and synchronization of your GIS map data, MSAG, and ALI database. Various reviews will be completed to identify issues that could adversely affect emergency response; for example, wireline 9-1-1 calls plotting in the wrong location, emergency service personnel being directed to the wrong location, and/or

emergency calls being routed to the wrong PSAP. Potential problems will be identified by first reviewing each component individually and then by evaluating the synchronization of all three. Analysis results will then be summarized in a final report and provided to assist you in updating these components so they can function to their full potential in your existing and future 9-1-1 systems. The following sections describe the specific processes that will be completed as part of King-Moore's analysis.

### **ALI Database Review**

King-Moore will review the ALI database to identify incorrect, incomplete, or inconsistent addresses or community names. The ALI database schema will also be reviewed for compliance with NENA standards.

### **MSAG Review**

King-Moore will review the MSAG to identify:

- Incorrect, incomplete, and inconsistent street names, address ranges, Emergency Service Numbers (ESNs), and community names
- Overlapping address records that could be problematic
- Compliance with NENA standard document format

### **GIS Data Schema Review**

King-Moore will review the GIS data schema of provided GIS layers to determine conformance with existing industry best practices and compliance with evolving NENA standards for NG9-1-1 GIS data. A side by side comparison of the existing and recommended GIS data structure will be provided, similar to this:

As part of this review, King-Moore will also identify any missing GIS data layers that would enhance public safety in the Buckingham County Service Area.

### **Road Centerline Layer Review**

King-Moore will review the road centerline layer to identify:

- Inaccuracies, incompleteness, and inconsistencies in street name and address range attributes
- Road centerlines that are unbroken at true intersections, ESN, and community boundaries
- Road centerlines line direction consistency
- Road centerlines that are incorrectly broken at overpasses/underpasses and ramps for routing purposes (if resources are provided)

### **ESN and MSAG Community Boundary Layers Review**

King-Moore will review the ESN and MSAG community boundary layers to identify:

- Inaccuracies, incompleteness, and inconsistencies in ESN and MSAG community name attributes
- Overlapping boundaries
- Duplicate boundaries
- Polygons not snapped to road centerlines

### **Site/Structure Layer Review**

King-Moore will review the site/structure layer to identify:

- Duplicate addresses
- Inaccuracies, incompleteness, and inconsistencies of address information
- Addresses which are not MSAG-valid

### **Synchronization Review**

First, the synchronization of the ALI database, MSAG, and GIS map data layers will be reviewed. This will provide a list of all ALI database records that are not MSAG-valid, as well as a list of ALI database records that do not match the GIS map data.

Second, King-Moore will evaluate the synchronization of the MSAG and the GIS map data. This review may produce a list of inconsistencies or possible errors in the MSAG and GIS map data.

### **Phase Three: Recommendations Report**

After the analysis is complete, results and lists of errors will be compiled into a digital report. Along with this report, King-Moore's GIS Project Manager will include specific recommendations for updates that will increase the quality and synchronization of the data, ensuring its suitability for NG9-1-1 call routing.

Analysis results and update recommendations will be presented during a web meeting with Buckingham County. During this meeting, the following topics will be discussed:

- High level overview of analysis results
- Recommendations for working through fallout including explanation of result code priority
- Observations specific to Buckingham County's GIS data and results
- Anticipated remediation workflow
- Tools that will enable Buckingham County to routinely run through similar analysis procedures

#### **Phase Four: Execution of Recommended Enhancements**

Using King-Moore's Recommendations Report as a guide, King-Moore will work to remediate issues identified during the 9-1-1 Data Analysis. The goal of these updates will be to correct the GIS map data issues identified, to bring the data in line with NG9-1-1 GIS data standards, and to achieve a 98 percent synchronization rate between the GIS map data, ALI Database, and MSAG.

The scope of the GIS Data Remediation work may include:

- NG9-1-1 Field Structure Updates
- Street Centerline Layer Updates
- Address Point Layer Updates
- Emergency Service Zone Layer Updates
- Community Boundary Updates

King-Moore will provide up to 70 hours of GIS Data Remediation Services during this Phase. GIS data issues not resolved within this timeframe will be Buckingham County's responsibility.

Note: MSAG and ALI database updates may be required to achieve a 98 percent match rate. Suspected ALI database or MSAG errors will be provided to Buckingham County for review. Buckingham County is responsible for any updates needed in the ALI database or MSAG.

#### **Phase Five: Transition and Training**

Upon completion of Phase Four, King-Moore will travel on-site to train Buckingham County staff on advanced data management techniques using the region's existing GeoLynx DMS software. This training will cover more advanced GeoLynx DMS GIS tool concepts; specifically how the tools can be used for identifying, investigating, and resolving GIS data errors. Training will be accomplished through a lecture and hands-on based training session. Upon completion of this training, Buckingham County staff will be able to correct any remaining GIS data errors from the analysis, and can better leverage GeoLynx DMS for ongoing maintenance of the NG9-1-1 GIS data.

#### **Phase Six: GIS Maintenance Workflow Consulting**

King-Moore will work with Buckingham County to develop and document maintenance workflows that will help the region maintain 9-1-1 GIS data that is accurate, up-to-date, and NG9-1-1 compliant.

#### **GIS Maintenance Workflow Development**

King-Moore's GIS Project Manager will analyze the data gathered during Phase One, with the goal of gaining a thorough understanding of Buckingham County's existing maintenance processes. The GIS Project Manager will then design revised workflows geared towards maintain ongoing compliance with NG9-1-1 standards.

Preliminary copies of revised workflow diagrams will be provided to Buckingham County for review.

Maintenance workflow diagrams will include:

- Map Maintenance process coordination
- Recommended Quality Assurance/Quality Control (QA/QC) processes
- Spatial and attribute standards