FY18

PSAP GRANT PROGRAM APPLICATION

VIRGINIA INFORMATION

TECHNOLOGIES AGENCY

Integrated Services Division

FY18 PSAP 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. 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 FY18 PSAP Grant Application Cycle starts July 1, 2016 and concludes on September 30, 2016 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.

FY18 PSAP GRANT APPLICATION

PROJECT TITLE

Preparation of Public Safety GIS and Location Data for NG911 Support

GRANT APPLICANT PROFILE/PROJECT CONTACT

PSAP/HOST PSAP NAME: *Hopewell PSAP*

CONTACT TITLE: *Administrative Services Manager*

CONTACT FIRST NAME: *Kimberly*

CONTACT LAST NAME: *Parson*

ADDRESS 1: *300 N. Main Street*

ADDRESS 2: Click here to enter text

CITY: Hopewell

ZIP CODE: 23860

CONTACT EMAIL: *kparson@hopewellva.gov*

CONTACT PHONE NUMBER: *804-541-2272*

CONTACT MOBILE NUMBER: Click here to enter text

CONTACT FAX NUMBER: *804-541-2345*

REGIONAL COORDINATOR: *Sam Keys*

HOST PSAP AND PARTICIPATING PSAPS/LOCALITIES

Hopewell PSAP, City of Hopewell	

GRANT TYPE

☒ Individual PSAP   ☐ Shared Services

TIER

☐ Out of Service   ☐ Non-Vendor Supported*

☐ Technically Outdated*   ☐ Strengthen

☐ Not Applicable

If technically outdated or non-vendor supported, application MUST include age and/or version of hardware/software.

VERSION: # YEARS of HARDWARE/SOFTWARE:

PRIORITY/PROJECT FOCUS   NG 9-1-1 GIS

FINANCIAL DATA

Amount Requested: $ **125,760**

Total Project Cost: $ **125,760**

PROJECT DESCRIPTION

Provide a detailed description of the project for which funding is being sought, including the impact on operational services and consequences of not receiving funding; the relationship to local strategic and capital improvement plans; and sustainability:

See Attached 2 page document

PSAP GRANT PROGRAM APPLICATION FY18

PROJECT DESCRIPTION

The focus of this project is to augment, update and remediate public safety GIS and other location related data to enhance current and anticipated public safety operations and establish ongoing methodologies and procedures to position its public safety datasets for persistent NG911 readiness and alignment with the Commonwealth of Virginia Statewide 9-1-1 Comprehensive Plan.

NG9-1-1 Data Readiness

This set of proposed tasks is focused on evaluating, standardizing, updating, correcting and synchronizing key public safety datasets, including that of the GIS, MSAG and ALI. To this end, the following work is proposed to be performed:

Data Standardization

Road centerline and site address GIS data models and content will be evaluated and modified for compliance with current *NENA Standard Data Formats for 9-1-1 Data Exchange & GIS Mapping* (NENA-02-010, Version 9, December 16, 2010, or latest available). Where necessary, configuration changes will be made to current PSAP mapping applications to accommodate the new model, or if configuration changes cannot be readily made, extract / transform / load (ETL) operations will be established, automated and tested to retain compatibility with legacy systems. This will ensure that critical GIS data is maintained in a NENA-compliant format for future use—in, for example a statewide or regional Spatial Database Management System (SDBMS)—even if other PSAP systems currently in operation are not. As part of this task, these datasets will be checked for completeness and accuracy as well as validated and formatted for compliance with the abovementioned NENA standard.

Geospatial Data Validation

Using automated GIS data analysis tools, centerline geospatial data will be analyzed for fundamental geometric and attributional quality. Issues identified by the extension will be investigated, exceptions noted, and valid errors corrected. Validation checks to be performed include, but are not limited to the following:

Address Points	
Attribution	**Geometry**
• Unique feature IDs • Non-zero, non-null address / street name • Unique, non-duplicate addresses	• Valid, non-empty geometry • Unique, non-duplicate features • No multipart features

Centerlines	
Attribution	**Geometry**
• Persistent use of unique IDs • Non-duplicate address ranges • Non-zero / non-null address range values • Address / line directionality agreement • Non-overlapping address ranges • Side of road odd/even address agreement	• Valid, non-empty geometry • No multi-part features • Unique, non-duplicate features • Intersection snapping and segmentation • Gap / dangle validation • Connectivity

Address Data Validation

Various authoritative repositories for public safety addressing information will be compared, reconciled, and synchronized to assure consistency between them. More specifically, the following tasks are proposed to be completed:

- **Site Address / Centerline** – For this validation check, tabular address data derived from the site address GIS feature class will first be geocoded against GIS centerlines with a very high (98-100%) minimum match score threshold, then reviewed. Address instances where that fails to find a match or find multiple matches will be investigated and corrections made to the appropriate feature class, then verified through re-geocoding. Following these fundamental geocoding checks, addresses will be assessed using the results of "fishbone" analysis. Under this method, GIS- sourced site address attribute table values are geocoded against site addresses, then the each "interpolated" address range based location is connected to its corresponding mapped site address points via a straight line. The length and

Continued on next page

arrangement of these lines will then be used to identify potential problems such as out-of-sequence addresses, address range irregularities, side- of-road inconsistency, and erroneous geocoder location assignments. Flagged addresses will then be investigated, and where appropriate, corrections made to relevant features. Technically correct, but non-standard or irregular addresses will be referred for review and determination of action by public safety and addressing managers.

- **MSAG / GIS** – Street name and address range information stored in the Master Street Address Guide (MSAG) will be compared with corresponding values in GIS road centerlines. Instances of disagreement between the two will be investigated and inaccuracies corrected in the appropriate dataset.

- **ALI / GIS –** Addresses stored in the Automatic Location Information (ALI) database will be geocoded against GIS site addresses and road centerline address ranges with a very high (98-100%) minimum match score threshold, then reviewed. Disparities between the two will be investigated and inaccuracies corrected within the appropriate database(s).

ESN / ESZ Reconciliation

Emergency Service Number (ESN) information stored in the MSAG will be compared against mapped service areas and first due emergency service zone assignments. Discrepancies will be noted, investigated and corrected within the appropriate dataset(s).

Addressable Structure Field Verification

In order to ensure that the site address GIS feature class is up-to-date and accurate, all addressable structures will be visually field verified. During the verification process, instances where mapped data deviates from observed real-world conditions will be noted, investigated if necessary, and corrections applied to the data. New addressable structures will be photographed and linked to their site address feature in the GIS.

Ancillary Thoroughfares

As a supplemental navigational aid to public safety personnel with access to GIS mapping resources, centerlines representing key ancillary roadways will be reviewed, and where necessary, mapped. These key pathways will consist primarily of the most direct privately or publicly maintained thoroughfares that lead to the entrances and loading docks of major retail and commercial buildings, industrial facilities and institutions.

Intra-jurisdictional Boundaries

Geospatial data pertaining to jurisdictional boundaries, and emergency service zones will be evaluated for compliance with geometric and topological rules (e.g., complete coverage; slivers, overlaps, or duplicate features), as well as for consistency with MSAG and road centerline address ranges. Geometric and topological errors will be corrected and discrepancies between adjacent boundaries will be investigated and corrected to ensure accurate representations of boundaries.

Maintenance Processes & Procedures

To guarantee the continued value of the investment made in the abovementioned data improvements and dataset synchronization efforts, it is essential to implement sustainable practices for their ongoing maintenance. To this end, a set of workflows, policies and procedures will be established and documented to enable ongoing system maintenance. Wherever practical, these procedures will employ automation through scripting and models, as well as data review tools, to simplify maintenance tasks, minimize manual effort and assure the quality and consistency of relevant public safety datasets.

PROJECT GOAL

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

This project meets current locality needs by improving the accuracy and analytical capabilities of its public safety data sets, with immediate consequent enhancement of its capability to protect human lives and property. At the same time, these improvements better integrate GIS into PSAP operations and position it to more smoothly transition into a statewide Next Generation 911 system. These outcomes are consistent with Goals 3 & 7 of the Commonwealth of Virginia's Statewide 9-1-1 Comprehensive Plan and findings of the Statewide NG 9-1-1 Feasibility Study.

Project Goals
- *Prepare public safety datasets for future NG9-1-1 integration*
- *Improve the overall accuracy and consistency of public safety data*
- *Enhance the analytical capabilities of the PSAP*
- *Provide for ongoing maintenance and quality of public safety datasets*

PROJECT OBJECTIVES

Describe the objectives that will support the goals identified above:

Project Objectives
- *Establish a NENA standards compliant public safety geospatial dataset*
- *Create consistency and parity between GIS, MSAG and ALI databases*
- *Institute sustainable processes for continued data maintenance and synchronization*

SHARED SERVICES (if applicable)

Describe the relationship of the project to the participating PSAPs:

N/A

Describe the intended collaborative efforts and resource sharing opportunities:

N/A

IMPLEMENTATION PLAN
SHARED SERVICES & INDIVIDUAL PSAP APPLICATIONS:

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

PROJECT PHASE	PLANNED COMPLETION DATE
INITIATION – 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.	05 / 31 / 17
DESIGN/PLANNING - Requirements are documented, components to be purchased are identified, and general design is documented.	06 / 30 / 17
ACQUISITION - RFP (or other bid related processes) are drafted, proposals are evaluated, contract is signed, purchase orders are issued, and quotes are obtained.	08/ 31 / 17
IMPLEMENTATION - Purchased components are delivered and installed and training is performed	12/ 31 / 17
TESTING/COMPLETION - Performance of system/solution is validated and system/solution goes "live"	02 / 28 / 18

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.

The following is a non-binding cost estimate for all services proposed to be performed by WorldView Solutions in support of the draft grant application above, and is inclusive of all anticipated travel, time and materials.

Task	Estimated Cost
1. Validate Centerlines and Format for NENA Standards Compliance	$12,760.00
2. Reconcile / Validate Address Data	$17,600.00
3. Intra-Jurisdictional Boundary Alignment	$1,930.00
4. Update / Create Emergency Service Number Boundaries	$2,180.00
5. Addressable Structure Field Verification	$26,760.00
6. Map ancillary thoroughfares	$5,840.00
7. Establish, automate and document update procedures	$18,680.00
8. Maintenance and Support for 5 years, including addresses, centerlines, ancillary roads and ESNs	$40,000.00

EVALUATION

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

- *Use of a geospatial consultant for planning and execution of project tasks*
- *Review and acceptance of design documents*
- *Review and acceptance of pilot, draft and final deliverables*
- *Validation testing of data in existing PSAP systems*

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

How would a consolidation take place and provide improved service:

N/A

How should it be organized and staffed:

Click here to enter text

What services should it perform:

Click here to enter text

How should policies be made and changed:

Click here to enter text

CONSOLIDATION (Primary or Secondary) - (complete only if applicable) – con't

How should it be funded:

Click here to enter text

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

Click here to enter text