PSAP Grant Program Grant Ranker

View Application--27--Data Visualization and Integration

Grant Period: 2010

Tier: Replacement of technically outdated wireless E-911 equipment or service to enable primary PSAP to maintain current service levels to the general public (**TECHNICALLY OUTDATED**)
Grant Program: Continuity and Consolidation **Grant Type:** Individual PSAP
Priority: Mapping System (**MAPPING**)

Primary PSAP Applicants:	Williamsburg Public Safety Communications Center
Jurisdictions Served:	Williamsburg, City of

Project Director:
Mark Barham
Information Technology Manager
401 Lafayette St Williamsburg, VA 23185
757-220-6189 (phone)
(fax)
MBARHAM@williamsburgva.gov

Project Description:

Total Project Cost	$150,000.00
Amount Requested:	$150,000.00

Statement of Need:
Statement of Need Successful accomplishment of this project will improve the participating PSAP / EMS entities ability to visualize wireless and wire line incidents and past cases. Successful accomplishment will also enable the integration of disparate data sources to better respond to incidents and will enable the participating PSAP to have a reliable and sustainable catastrophic backup resource. In addition, this project will be performed taking maximum advantage of the statewide VBMP data products thus enabling the efficient use of data within the State. Consequences of not receiving funding This project is reliant upon the award of the grant funding described in the budget section below. Should grant funding not be awarded or is significantly reduced from the requested amount, this project will not be undertaken. Impact on Operational Services The participating PSAP will benefit through the establishment of a common geospatial landscape and common framework for data management in the locality. Operationally, Task 1 will enable the automated update of roads, structures, addressing, etc. in a near-real time environment. This would aid call takers and dispatchers to locate wireless calls using current data within and outside their locality. In addition, this project will simplify the loading of data updates into the PSAP mapping systems through the use of standard data models. These data models provide the mapping update data in the specific format and content necessary to be consumed by the mapping system. With the utilization of an offsite backup in the format of a replicated database, a backup is readily available in a consumable format in the case of any catastrophic events. Task 2 will introduce a geospatial integration platform for incident and event data.

Without this solution in place it will be impossible to make important, potentially life-saving, decisions leveraging the numerous disparate data sources identified above. The integration of content from remote sources, local GIS content, border locality mapping content and information from the local PSAP/RMS and incident management solutions will greatly improve the localities ability to perform and respond appropriately.

Comprehensive Project Description:

Task 1 - Replication – Project Description The PSAP would like to implement a project that will streamline the process of sharing data between the GIS department and the PSAP. This can occur with near-real time geospatial updates of critical infrastructure and address layers using ArcGIS Server Replication. In addition, any disparate data sets can be consolidated using geoprocessing (GP) tasks and will be provided in a standardized format with a pre-defined schema, facilitating the consumption of these layers into the PSAP's mapping system. As part of the replication process, an off-site, bi-directional replica will be maintained. This replica will serve as an emergency backup and will allow rapid re-instatement of any data that may be lost or corrupt. This grant project will assist the GIS and/or IT department with the automation of some necessary database maintenance tasks. Reconciling and posting of user's versions, managing conflicts, database compress, and re-indexing of the database tables are several tasks that can be automated at the localities discretion. The automation of these tasks will ensure that the latest edits are getting transferred to the PSAP through replication, and will also help to maintain database integrity. This grant project will also enhance our PSAP's ability to provide backup emergency dispatch capability due to the quality control processes that will be run on the data during the replication process. A series of quality control tasks will be run to ensure the data integrity is maintained throughout the process – from the initiation of the replication to the final output product. The entire process will be logged to ensure that all criteria and tasks are met. Any critical issues will be delivered to the PSAP and GIS center staff to alert them of any problems that may have occurred during the process. The quality control process will evaluate the data structure and geometry, and ensure that all data that is processed meets pre-defined guidelines. The data structure will be evaluated on all replica databases to ensure that field name, field size, and field type are all the same. These checks are critical because of the stringent data requirements for the PSAP mapping system. The geometric integrity will also be evaluated, to ensure that the data is topologically correct and within the correct projection. All features will be evaluated to ensure that the number of records is also within a pre-determined threshold. Any inconsistencies will be flagged by the logging process and provided to the locality and PSAP. Implementation Strategy and Work plan We anticipate this project will include: 1. Securing a geospatial consultant to assist in project planning and execution 2. Assessment of the current PSAP and GIS systems and requirements to enable ESRI ArcGIS Server Replication 3. Data standardization to support the PSAP mapping / CAD systems 4. Development of work processes required to automate the data update from the locality, utilizing replication to the PSAP mapping systems 5. Procurement of necessary hardware and software to enable the successful project 6. Training and documentation on the installation, setup, and configuration of any GP tasks and replication services 7. Configuration of a Geodata service or GP task providing two way replication between the PSAP and an off-site storage location. Project Timeline – Task 1 (days from grant award) • 45 – Contract with consultant • 120 – Complete current PSAP and GIS systems and requirements assessment and specification • 210 – Complete data standardization and development of work processes. Procurement of necessary hardware and software. • 300 – Develop and Test solution • 320 - Implementation at PSAP / Locality • 340 – Project closeout and report Task 2 - Incident Integration and Visualization – Project Description Our PSAP and Emergency Management Professionals desire to implement a project that will enable the visualization of both current and past incidents in an effort respond more efficiently. Currently, integration and visualization between our incident and records management system is not possible. This inhibits our ability to respond to current events in context with past 911-incidents and patterns. This grant project will enhance our PSAPs ability to visualize and better respond to incidents through integrating our PSAP RMS and incident management systems into a single interface. Additionally, the grant will allow us to combine other ancillary information real-time, allowing us to better respond to events through the integration of incident data in context with live weather feeds, VDOT cameras, as well as perform analysis tasks. Support for other data types (local GIS, GeoRSS feeds, KMZ/KML) would be part of the overall solution allowing for better response and analysis capabilities to events and incidents. Implementation Strategy and Work plan We anticipate this project will include: 1. Securing a consultant to assist in project planning and execution 2. Assessment of the current PSAP, GIS systems, incident management and RMS systems 3. Development of a formal Functional Requirements Document (FRD) to support and clearly define the integration and visualization solution. 4. Development of

visualization components, based on the FRD, to support RMS visualization and integration. 5. Development of visualization components, based on the FRD, to support Incident Management software integration. 6. Development of visualization components, based on the FRD, to support the inclusion of “cloud” data feeds and remote data sources. 7. Configuration of the solution in the locality 8. Procurement of necessary hardware and software to enable the successful project 9. Training and documentation on the installation, setup, and configuration of all deliverables Project Timeline (concurrent with Task 1) – Task 2 (days from grant award) • 45 – Contract with consultant • 70 – Complete current PSAP and GIS systems assessment and specification • 90 – Complete FRD development • 110 – Complete procurement of any necessary hardware and software • 290 – Complete development of Visualization and Integration components • 310 – Complete configuration within appropriate locality facilities • 320 – Project closeout, training and report deliverables Project Sustainability It is anticipated that the solution will remain in place unless there is a significant industry change. The sustainability of the project will remain a central focus of the project participants by the driving force of need for geospatial data and integration. All entities involved are prepared to fund long-term changes of the system in the event of upgrades or product changes.

How will the equipment purchased will support future technologies for PSAP readiness?:
n/a

Budget and Budget Narrative:
Submitted as Attachment

Evaluation:
Evaluation data will be collected throughout the project as specific milestones are achieved. The data sources will include regular project status reports, milestone testing and acceptance documents, and final project acceptance documents. Milestones and project status reports will follow the phases associated with each task. Task 1 - Replication 1. Securing a geospatial consultant to assist in project planning and execution 2. Assessment of the current PSAP and GIS systems and requirements to enable ESRI ArcGIS Server Replication 3. Data standardization to support the PSAP mapping / CAD systems 4. Development of work processes required to automate the data update from the locality, utilizing replication to the PSAP mapping systems 5. Procurement of necessary hardware and software to enable the successful project 6. Training and documentation on the installation, setup, and configuration of any GP tasks and replication services 7. Configuration of a Geodata service or GP task providing two way replication between the PSAP and an off-site storage location. Task 2 - Incident Visualization and Integration 1. Securing a consultant to assist in project planning and execution 2. Assessment of the current PSAP, GIS systems, incident management and RMS systems 3. Development of a formal Functional Requirements Document (FRD) to support and clearly define the integration and visualization solution. 4. Development of visualization components, based on the FRD, to support RMS visualization and integration. 5. Development of visualization components, based on the FRD, to support Incident Management software integration. 6. Development of visualization components, based on the FRD, to support the inclusion of “cloud” data feeds and remote data sources. 7. Configuration of the solution in the locality 8. Procurement of necessary hardware and software to enable the successful project 9. Training and documentation on the installation, setup, and configuration of all deliverables As part of the overall project, a Project Management Document shall be developed that incorporates each stage of the project, and provides an audit trail associated with final outcomes, final project metrics, and achievement of specific project deliverables.

Attachments

Williamsburg-BudgetNarrative.pdf

Budget and Budget Narrative Section

Budget and Budget Narrative - Purpose

List the planned expenditures to be made with grant funds. In lieu of a line item breakdown, an itemized cost schedule or detailed vendor

Project Fee:

Project Task	Subtotal	Project Fee
Task 1 - Replication		
Complete current PSAP and GIS systems and requirements assessment and specification	**$2,500**	
Complete data standardization and development of work processes. Procurement of necessary hardware and software.	**$5,000**	
Develop and Test solution	**$55,000**	
Implementation at PSAP / Locality	**$10,000**	
Project closeout and report	**$2,500**	
Task 2 – Integration / Visualization		
Complete current PSAP and GIS systems assessment and specification	**$0**	
Complete FRD development	**$5,000**	
Complete development of Visualization and Integration components	**$60,000**	
Complete configuration within appropriate locality facilities	**$5,000**	
Project closeout, training and report deliverables	**$5,000**	
Total Project:		**$ 150,000.00**