

PSAP Grant Program Grant Ranker

View Application--81--FY09 PSAP Grant Program

Grant Period: 2009

Tier: Replacement of out of service wireless E-911 equipment to enable primary PSAP to maintain current service levels to the general public (**OUT OF SERVICE**)

Grant Program: Continuity and Consolidation **Grant Type:** Individual PSAP

Priority: Mapping system (**MAPPING**)

Primary PSAP Applicants: Louisa County Sheriff's Office

Jurisdictions Served: Louisa

Project Director:

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Project Description:

Louisa County is interested in converting its addressing data from a proprietary Computer Aided Dispatch (CAD) file format to an enterprise GIS format, along with the provision of GIS applications to maintain the address data in-house. This County also desires to adjust its current data to conform with the State's VBMP program data by conflating street centerline data to the VBMP RCL and adjusting inaccurate address mapping data to the VBMP imagery. This shall enable the County's CAD operations center to receive more timely and current updates as well as conform the County's address data to a regional/statewide data standard.

Total Project Cost \$87,500.00

Amount Requested: \$70,000.00

Matching Funds: \$17,500.00

Additional Local Funds: \$0.00

Statement of Need:

This project represents a continuity of services whereby the County desires to fully support its replacement of the existing Eagle Dispatch system with Positron's dispatch solution. There is a critical need to support the new CAD system. The County currently utilizes EAGLE, a Computer Aided Dispatch Mapping product from MSAG data Consultants. Due to EAGLE's proprietary nature, the PSAP has limited options regarding the maintenance and currency of their data. Address information is obtained through a maintenance contract with MSAG. The current workflow and process for addressing is as follows: The County's Planning/GIS office submits address information in paper form by fax to MSAG. This form contains GPS'd

coordinates and a limited description of the type of structure. The information is taken from the form by an MSAG employee, and the x-y coordinate is used to generate an address within a proprietary system. The address value is then provided back to the County. The GIS Department's current maintenance procedures are based on an outdated address maintenance system in AutoCAD format, which is limited in capabilities, and is not compatible with the PSAP's ESRI-based Dispatching software. The County does not currently have any AutoCAD licenses, and the only reason the data remains in AutoCAD is for the convenience of the previous vendor. Typically, the current workflow can result in information at the PSAP being as much as 3-4 months out of date. Therefore, three months worth of critical E-911 and land information data is unavailable to Dispatchers. It is cost-prohibitive for the County to transfer E-911 data more frequently given the existing maintenance workflow and reliance on consultants to complete this work. The County desires to decrease this data latency significantly by bringing the E-911 data management process in-house. This project is part of our long-term commitment to improve local and regional response capability through establishment of a common base data set using the VBMP imagery and roads. Assistance gained from the PSAP Grant Program will enable us to complete the initial project implementation. The County will provide operation and maintenance funding through annual budget allocations.

Project Impact:

Full GIS data Migration – The current GIS data resides in a proprietary vendor format that is difficult to update. The process requires the County to utilize the vendor to generate addresses and GIS data, which is cumbersome and results in significant time lags between address changes and their availability to the Emergency response system. Converting the data for in-house maintenance enables the County to perform more timely and controlled updates to critical dispatch and response systems. The benefit to the County can be expressed in several areas. First, the County has already selected a CAD vendor to replace the existing EAGLE system. Because of the proprietary nature of the current data format, the County must rely on MSAG to provide new addresses. This results in a considerable delay in updating the data. The proposed project will eliminate any reliance on MSAG to maintain the data.

Consequence of Not Receiving:

The County has some available funding for address maintenance but lacks the in-house time and expertise to convert the CAD data to an Enterprise Geodatabase. Since the County has already undertaken the steps to replace the EAGLE CAD system with Positron's CAD package, it is imperative to ensure the legacy EAGLE data is converted, and in a form that can be utilized by the new system.

Part of Long Term or Strategic Plan?: Yes

Likelihood of Completion Unfunded?: 10%

Other Available Funding Sources?: Yes

Percent of Grant Funding Requested To Total Funding Cost?: 80%

Is Project Locally Sustainable?: Yes

Comprehensive Project Description:

In order to address this immediate need and to modernize its GIS/E-911 program, the County intends to replace its current geospatial data maintenance systems, and migrate all geospatial data used in the PSAP to an ESRI Geodatabase environment. This will enable the County to edit their information in a more timely manner, versus the current several month lag. GIS Department staff will complete several additional maintenance and conversion procedures to prepare E-911 for Dispatcher's use during the initial project implementation. Once the County has successfully transferred the CAD data, it intends to adopt the Commonwealth's RCL as its new street data model. The County intends to conflate the existing centerline data and attributes (the scale and accuracy of which is suspect, but far less accurate than the VBMP data) to the VBMP RCL. Additionally, the County intends to adjust/conflate all other address features to match the accurate 2007 VBMP orthoimagery and features. To support the system migration, the County is interested in purchasing an "off-the-shelf" address management application (Road LoGISTICS) that will enable timely updates by reducing the current paper trail. The addressing software affords the County the ability to generate E-911 addresses directly into the County's standard Geodatabase. The software will further enable the County to optionally assign E-911 addresses in the field using the Road LoGISTICS application's integrated GPS capabilities. Additionally, the Software will support the future development of the County's E-911 dispatch map books through configuration of Road LoGISTICS map book generator features. Finally, the applications will provide the County with a direct export to the County's new CAD

system on an as-required basis. Address maintenance software containing these features will empower the GIS office to provide updates to the PSAP's mapping system in a much more timely fashion, possibly on a weekly or even daily basis. The proposed project can be summarized in four (4) distinct phases: Migrations of legacy CAD data to ESRI Geodatabase, adaptation of VBMP RCL as the new street centerline with subsequent conflation of address data from the legacy CAD roads to VBMP RCL roads, the conflation and adjustment of E-911 features (address points, hydrants, cell towers, annotation, etc.) from the current less accurate spatial quality to the high quality VBMP features and Orthoimagery, and the provision of software and field computing capabilities to enable office and/or field based address updates to the County's E-911 mapping data. This effort shall be a phased approach, intended to take approximately 4 to 6 months to reach full implementation. The resulting efforts shall become and remain part of the County's GIS data management strategy, which serves a variety of functions to include E-911 dispatch, community development and planning, tax and revenue, economic development, and regional preparedness.

What type of interface or compatibility solution will be used between existing equipment and/or software and that which you intend to purchase?:

The County, in conjunction with our appointed project manager, plan to use industry standard GIS and mapping software that consumes and produces industry standard data files and formats.

What is the overall relationship of your project to your PSAP or locality's established long-range future plans?:

This project is part of our long-term commitment to improve regional response capability through the establishment of a common base data set using the VBMP imagery and roads. As the County has already invested in migrating to a newer and more reliable product and vendor, the dependability of the data and the ability to maintain it is paramount to the success of the migration to the Positron CAD/response products.

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

This project proposes to adapt the State Standards VBMP data model as the basis for new and future CAD dispatch capabilities. The resulting data will be compatible with the State's data standards for street addressing data, which will result in better regional response through more seamless and efficient data sharing across jurisdictional boundaries.

Budget and Budget Narrative:

The budget and budget narrative appears in .pdf format in the attached documentation submitted with the on-line grant request.

Ongoing Expenses:

The County intends to perpetuate the results of the project through a combination of general funds and funding associated with annual allocations to the County's emergency operations budget.

Evaluation:

Evaluation of the proposed project will consist of the timely delivery of E-911 address information to the PSAP, reducing the critical lag from several months to as little as one week. The PSAP will become self-sufficient in performing address management for emergency response purposes, as well as maintain reliable and prompt updates to the system for use across multiple County departments. Once the time lapse between data acquisition and integration into the system has been decreased, the Agency will then recognize complete project success.

What are the short term, intermediate, and/or long-term outcomes desired for this project?:

Short Term Outcomes: • The County does not require outside support to perform its basic addressing responsibilities. • The County can fully support the new CAD system by providing timely updates for E-911 based GIS data, enabling the County to update data in the CAD system with significantly increased currency. • The County shall have a single, seamless GIS database that can be leveraged across a number of other County Departments. Intermediate/Long term Outcomes: • The County developed a GIS program that is compatible with other data sets at a State and regional level, and provides seamless integration with the State VBMP program.

What measures will be used to determine outcomes?:

There are four components to this project that can be measured to ensure that the project objectives have been successfully achieved, in conjunction with the following categories: 1.) Migration of legacy CAD data to ESRI Geodatabase. Successful migration of legacy mapping data related to E-911 Computer aided dispatch. Successful implementation will be defined in terms of project milestones and final project deliverables. The ultimate success of the conversion generally depends upon the existing and proposed data formats, but the fundamental assumption is that the data in its proposed form contains the same look and feel as in its previous form and has functionality and ease of use and maintenance greater than that of the previous format. Project milestones for Full E-911 GIS Data Migration will include: 1. Project Management Plan 2. Project Kick-off 3. Work process definition 4. Data migration 5. Software installation and testing 6. Training 7. System approval and acceptance 2.) Adaptation of VBMP RCL as the new street centerline, with subsequent conflation of Address data from the legacy CAD roads to VBMP RCL roads. Success is measured by the incorporation of existing CAD-based address information that does not contain intelligence into the Standard VBMP RCL data that has geocodable information and spatially aligns with other VBMP and imagery. Successful implementation will be defined in terms of project milestones and final project deliverables. Project milestones for VBMP Migration/Adjustment will include: 1. Project Management Plan 2. Project Kick-off 3. VBMP Imagery acquisition 4. Pilot area production 5. County Review of pilot data 6. Data delivery by batch area 7. County acceptance by batch area 8. Final data delivery and acceptance 3.) The conflation and adjustment of E-911 features to the high quality VBMP features and Orthoimagery. Location of new roads, structures, and address points that overlay the location as shown on the 2007 imagery within the accuracy standards for the given area (1"=200' and 1"=100' scale mapping standards). Successful implementation will be defined in terms of project milestones and final project deliverables. Project milestones for VBMP Migration/Adjustment will include: 1. Project Management Plan 2. Project Kick-off 3. VBMP Imagery acquisition 4. Pilot area production 5. County Review of pilot data 6. Data delivery by batch area 7. County acceptance by batch area 8. Final data delivery and acceptance 4.) Provision of data E-911 Data Maintenance software and field addressing capabilities. Successful implementation, training, and use of the data update tools, enabling the County to perform its own updates at will without 3rd party involvement, achieving significantly greater currency than the current processes. Successful implementation will be defined in terms of project milestones and final project deliverables. Project milestones for RL/PL tools will include: 1. Project Management Plan 2. Project Kick-off 3. Work process definition 4. Data migration 5. Software installation and testing 6. Training 7. System approval and acceptance

How will data be collected and how will evaluations be conducted?:

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.

How will data be presented?:

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

[Louisa Budget narrative.pdf](#)



Louisa County Wireless Grant Program Budget Narrative

The following is a line by line narrative related to each line item in the budget, followed by a total project cost spreadsheet.

CAD to Geodatabase Migration (Address Files) – Item 1 in the Scope of Work

- Extract Transform Load (ETL) Process Setup – This step develops the transformation model between AutoCAD features and Geodatabase features.
- Pilot Conversion – Typically a smaller subset of the conversion area (Pilot Area) is chosen to test the process and required output.
- Full Conversion – Once the Pilot is accepted, the entire county is converted through the ETL process.
- Final Data QA and Delivery – the Resulting Geodatabase requires a complete quality Control pass to ensure the features have been converted properly and contain the same look and feel. This is an iterative process involving the County's Project manager's input and acceptance.

Data Migration to VBMP RCL - Item 2 in the Scope of Work

- Conflate Road Attributes – Attributes information from the County's less accurate centerlines are migrated from the old geometry new the newer and more accurate VBMP data.
- QC Names and Address Ranges – Once the Conflation process is completed, a manual and automated QC process is required to ensure the address information on the roads is consistent with "real world" conditions, including proper road naming, connectivity, feature representation, and address range consistency and correct parity.

Adjustment of E-911 GIS data to VBMP Orthoimagery - Item 3 in the Scope of Work

- Develop and Run Link Adjustment – the older planimetric data requires an initial automated "bulk conflation" in order to spatially adjust features at a global level. This initial step enables the data set to conform better at an overall level to the more accurate data.
- Manual Feature adjustment – After the automated adjustment is complete, localized adjustment is required.
- Address Annotation Adjustment – as features move, annotation related to the features requires movement as well. There is some work anticipated related to ensuring descriptive annotation is truly associated with the feature(s) it is designed to describe.
- Final QC and Delivery – The iterative process of review and acceptance by the County is required to ensure a quality product delivery.

Maintenance Applications - Item 4 in the Scope of Work

- Road LoGIStics Addressing Application (Office) – Desktop extension to ESRI's ArcGIS product that contains tools to maintain the County's E-911 GIS data.
- Road LoGIStics Field – Version or Road LoGIStics software the includes a GPS field capability for Trimble Receiver control and integration and external data sensor (i.e. rangefinder) support
- Tablet Computer – Pen based field computer necessary for the deployment of Road LoGIStics in the field.
- Address Application Configuration and Documentation – Necessary initial configuration and documentation to assist the County in it's ongoing data management efforts.
- Incorporate Map Book Elements into Map Book Generator – Map Book Generator component configuration necessary to enable the continuation of the development of E-911 map book changes and book production.
- Addressing Training – Training necessary to efficiently utilize Road LoGIStics E-911 data maintenance software.



Louisa County Wireless Grant Program Budget Narrative

Total Project Budget Estimate

The following itemized task list represents the total anticipated cost of the entire proposed continuity project for which Wireless Services Program grant funds are being requested:

Required Task	Subtotal	Task Total
CAD to Geodatabase Migration (Address Files)		\$ 20,000.00
Extract Transform Load (ETL) Process Setup	\$ 4,000.00	
Pilot Conversion	\$ 4,000.00	
Full Conversion	\$10,000.00	
Final Data QA and Delivery	\$ 2,000.00	
Data Migration to VBMP RCL		\$ 15,000.00
Conflate Road Attributes	\$10,000.00	
QC Names and Address Ranges	\$ 5,000.00	
Adjustment of E-911 GIS data to VBMP Orthoimagery		\$ 30,000.00
Develop and Run Link Adjustment	\$10,000.00	
Manual Feature adjustment	\$12,000.00	
Address Annotation Adjustment	\$ 6,000.00	
Final QC and Delivery	\$ 2,000.00	
Maintenance Applications		\$ 22,500.00
Road LoGIStics Addressing Application (Office)	\$ 2,500.00	
Road LoGIStics Field	\$ 3,500.00	
Tablet Computer	\$ 5,000.00	
Address Application Configuration and Documentation	\$ 2,500.00	
Incorporate Map Book Elements into Map Book Generator	\$ 6,000.00	
Addressing Training	\$ 3,000.00	
Total Project:		\$ 87,500.00