PSAP Grant Program Grant Ranker

View Application--36--Improving Geospatial Services for E911

Grant Period: 2009

Tier: Strengthen current equipment and service delivery capability by upgrading existing wireless E-911 related equipment or services (**STRENGTHEN**)
Grant Program: Enhancement **Grant Type:** Individual PSAP
Priority: Personnel - recruitment (**RECRUIT**)

Primary PSAP Applicants:	Page County EOC
Jurisdictions Served:	Town of Luray Town of Shenandoah Town of Stanley Page

Project Director:
Amy Ozeki
GIS Coordinator
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Project Description:
The Page County GIS Department is a developing department that needs funding to help the Emergency Operations Center build, edit and maintain its 911 mapping system and emergency endeavors that require accurate spatial information. In order for E-911 to have a successful mapping system, funding is necessary in order to pay for qualified personnel and purchase equipment. This grant proposal encompasses the following needs: 1) Wage for GIS Technician with a University Degree 2) ESRI ArcGIS Upgrade from ArcView to ArcInfo 3) Trimble GPS and Terrasync Professional 4) Geocomm Software Extension Until 2010 5) In-Vehicle Mapping Software (MobiLynx)

Total Project Cost	$141,950.00
Amount Requested:	$113,560.00
Matching Funds:	$28,390.00
Additional Local Funds:	

Statement of Need:
The Page County GIS Department is a developing department that needs funding to help the Emergency Operations Center edit, maintain and build its 911 mapping system for 911-related endeavors that require accurate spatial information. The data layers that currently exist have extensive errors, particularly in the 911 address points layer. Also, errors exist in the currently existing road centerline layer obtained from VGIN as well as inconsistencies in the shapes and lengths of the roads that the GIS displays when compared to the actual roads in reality. In addition, the emergence of new roads and addresses must be entered in order to maintain the accuracy of data layers. Also, the GIS Department needs personnel to

handle various 911-addressing-related problems, questions and requests from its citizens and answer the questions or communicate the problems to the GIS Team. Currently, the Page County GIS Department has one full-time GIS Coordinator who started employment in mid-March 2007. With the GIS Coordinator, the department has received sporadic part-time assistance from interns from James Madison University since April 2007 in order to keep up with new 911 address applications, new road names and the basic upkeep of the roads and address points data layers. In addition to supporting 911 services, the GIS Department personnel supports other departments (Building and Zoning, Commissioner of the Revenue, Environmental Services, etc.)and the towns in Page County (Luray, Shenandoah and Stanley) with GIS data and mapping services as well as requests from its citizens. In order for the GIS Department to create a successful mapping system for Emergency Services, funding is necessary in order to pay for skilled personnel and equipment purchases. With the estimated 15,000 address points to check, edit, add or delete and approximately 1040 roads, the current GIS Department does not have adequate staffing to fix the 911 addressing problems in a timely fashion. Also, equipment and software is needed for the project. In addition, funding is necessary for in-vehicle mapping for the emergency response personnel at the Emergency Operations Center. The Page County EOC currently has Geocomm mapping. In 2007, the dispatchers logged 23,752 calls for service. When these calls are dispatched the emergency response personnel are depending on the dispatcher to provide them with detailed directions to the location of the call. The County is growing with new streets, addresses, and subdivisions are being added all the time. If the responding units had the capability to look at an in-vehicle mapping system they would save time as well as valuable time of the dispatcher. The in-vehicle mapping would eliminate the need for the dispatcher to provide detail radio communications and give the responding unit the ability to see the location first hand. Having the in-vehicle mapping would speed up the response time because they would be able to see where they are in correlation to the address. This grant proposal encompasses the following needs: 1) Funding for wage for GIS Technician(s) with a university degree and experience in 911 addressing and/or GIS design and analysis (or qualified personnel) to edit and work on the address points and roads layers on a GIS. 2) ESRI ArcGIS Upgrade from ArcView to ArcInfo 3) Trimble GPS and Terrasync Professional 4) Geocomm software extension (1 year) 5) In-vehicle mapping (30 licenses)

Project Impact:
This project impacts the quality of the day-to-day operations of Emergency Services with up-to-date and accurate address points and roads layers as well as the GPS unit, GIS upgrades and E911 software extension (to stay in sync with Emergency Operations Center). In addition, in-vehicle mapping would provide the personnel responding to an emergency to receive mapping data quickly and efficiently using Geocomm's in-vehicle mapping.

Consequence of Not Receiving:
The 911 system will have extensive errors in the roads and addresses, which, when responding to an emergency, may cost unnecessary time and/or resources. Having the personnel to help detect and repair the errors is urgently needed as well as personnel to maintain the ongoing changes in addressing and road name changes and creations. No funding will mean that the extensive errors in the address points and roads layers will not be fixed as quickly as needed. No upgrade to ArcInfo will prevent the GIS department from having the tools that are necessary to edit and modify and use functions that are necessary for 911 services. Examples of beneficial applications included in ArcInfo include Spatial Analyst, COGO (for parcel editing), 3D Analyst, creation of raster catalogs in a multi-user geodatabase, data manipulation and analysis, among many other features not available in ArcView. Without the Trimble GPS with Terrasync Professional, emergency services, the other departments and the towns (Luray, Shenandoah and Stanley) that need GIS/GPS projects done need to share one GPS unit that the GIS Department currently has, which may cause delays. Also, a back up Trimble unit will not be in place in case one unit fails. Without funding for Geocomm 911 software, the GIS Department will need to request from other sources for funding for 911 software to keep the 911 software running and in sync with Emergency Services. Currently, the GIS Department holds the maintenance contract with Geocomm through November 2008. Without funding for in-vehicle mapping, the technology to receive wireless map data from the Page County PSAP would not be available, and the dispatcher will need to provide detail radio communications to the personnel traveling to the emergency. Without in-vehicle mapping would make responding to an emergency more time consuming and less efficient.

Part of Long Term or Strategic Plan?: Yes

Likelihood of Completion Unfunded?: 30%
Other Available Funding Sources?: Yes
Percent of Grant Funding Requested To Total Funding Cost?: 80%
Is Project Locally Sustainable?: Yes

Comprehensive Project Description:
The project will improve the accuracy of 911 addresses and roads. In order to improve the accuracy of our current 911 system, verifying existing 911 addresses is imperative. In the current Address layer many omissions, duplications and mis-addressed address points exist. Also, there are errors in the street data as well. In order to work effectively, up-to-date software and maintenance of existing software is needed. The Page County GIS Department is interested in three ESRI ArcInfo licenses to upgrade the functionality that the ArcView licenses does not have. Examples of beneficial applications included in ArcInfo are Spatial Analyst, 3D Analyst, COGO (for parcel editing), creation of raster catalogs in a multiuser geodatabase, feature class data manipulation and analysis, among many other features. Currently, we have two ArcView licenses. The current licenses do not have the tools that are necessary to edit, modify, and to create the databases that are necessary for 911 services. The Page County GIS Department uses Geocomm software (extension within ArcGIS) for updating the 911 addresses, which is the same software the Emergency Operations Center uses. Extending the maintenance service until April 2010 will keep the GIS Department in sync with the Emergency Operations Center which currently has its Geocomm software services extend through April 2010. Geocomm Maintenance includes the SyncroLynx Client, SyncroLynx Server and Geosnap, which costs $4,888.00 (according to an estimate done in 4/24/2007). In addition, the GIS Department needs a Trimble GPS unit that will be used exclusively for 911 addressing. Currently, the department has one Trimble unit with Terrasync Professional that is being used to support 911 addressing as well as other GIS projects for other departments (Building and Zoning, County Planning, Economic Development, Environmental Services, County Registrar, Commissioner of the Revenue, etc.) and the towns (Luray, Shenandoah and Stanley) in Page County. The additional GPS unit is necessary in order to cover the workload for the Emergency Operations Center for 911 addressing and maintenance. There is also a need to have a second unit as a back up in case one unit fails. The in-vehicle mapping is only one phase of a multiple phase project. The Page County EOC updated their mapping in 2004 when they became Phase II compliant. Then the emergency response agencies in Page County purchased lap-tops to meet the requirements for in-vehicle mapping. In the past year the Page County Economics Committee has been working on grants for Broadband service throughout the County. The first grant was received and the Committee has started the needs and assessment study. One of the uses of the Broadband would be to provide wireless data to the emergency responders and provide near real time updates. Providing funding for the in-vehicle mapping would be another phase completed in this project. Once there is Broadband throughout the County and in-vehicle mapping, the final phase is Automatic Vehicle Location (AVL). This would provide polygons on the mapping to show the closest unit to the incident. Without grant funding for the in-vehicle mapping this project would be delayed.

What type of interface or compatibility solution will be used between existing equipment and/or software and that which you intend to purchase?:
The equipment and software will be upgrades or additions to what we currently have to better help 911 services and correct data. These upgrades will enable more advanced GIS functions and analyses to help EOC's endeavors. In-vehicle mapping will use the currently existing Geocomm software that is used for mapping at EOC to relay mapping information to the responders traveling via vehicles without the dispatcher having to explain the location of the emergency.

What is the overall relationship of your project to your PSAP or locality's established long-range future plans?:
The project will form accurate data layers that will be the foundation for future data layers. Having accurate data enables EOC to query accurate information, and accurate data is the base of making accurate decisions—which is particularly important in emergency situations. In-vehicle mapping provides an efficient way for responders in vehicles to locate emergency areas without the dispatcher having to provide them with detailed directions to the location of the call.

How will the equipment purchased will support future technologies for PSAP readiness?:
The equipment will supplement work done for EOC for PSAP readiness by having a GPS unit specifically for

911 addressing. Even with a perfect address points and roads data layers, the department expects to always work on 911 addressing of new addresses and road creations in the future with new housing and development. In addition, GPS coordinates will be collected for other emergency services-related work, like x,y locations of fire hydrants, emergency landing zones, stop lights, among others. Currently, the department has one Trimble unit with Terrasync Professional that is being used to support 911 addressing as well as other GIS projects for other departments (Building and Zoning, County Planning, Economic Development, Environmental Services, County Registrar, Commissioner of the Revenue, etc.) and the towns (Luray, Shenandoah and Stanley) in Page County. The additional GPS unit is necessary in order to cover the workload for the Emergency Operations Center for 911 addressing and maintenance. There is also a need to have a second unit as a back up in case one unit fails. In-vehicle mapping provides efficiency and minimizes confusion to responders in vehicles to locate emergency areas without the dispatcher having to provide them with detailed directions to the location of the call.

Budget and Budget Narrative:

The figures below are estimates of the funding requested. For further details regarding the reasoning of these requests, please refer to the attachments. Address Points Layer: $71,250.00 Roads Layer: $6,650.00 Address Changes to Existing Addresses to Conform to the Page County E-911 Ordinance: $2,850.00 Trimble GPS Unit: $5295.00 Terrasync Professional With Pathfinder Office: $2995.00 ESRI Upgrade to ArcInfo: $20,060.00 Geocomm 911 Software Maintenance for one year: $3450.00 Geocomm In-Vehicle Mapping (MobiLynx, 30 licenses): $29,400.00 TOTAL: $141,950.00 Currently, there is a high percentage of errors in the address points with many addresses missing or addressed incorrectly. A QC process must be put in place where each address is checked. Using a GIS and/or a GPS, errors and omissions must be corrected. In addition, the Roads layer must be verified, added and/or modified on the GIS based on how they appear in reality. The lines must have correct address ranges, they must snap correctly to one another with a vertex at each intersection. In addition, numerous adjustments must be made to several verified 911 addresses structures with no 911 addresses in order for them to conform to Page County's E-911 Ordinance. In order to make these adjustments, the person(s) working on it must 1) investigate the problem and make sure that the problem areas do not conform to the E-911 Ordinance, 2) notify the residents of the problem, 3) make changes on the GIS (upon approval from the Board of Supervisors) and 4) notify the residents of the official changes. Page County needs qualified personnel to check and correct the address points and roads layers. The budget estimates are based on $19/hour. The number comes from an average per hour estimate for a GIS Technician with a degree in GIS or related field as well as experience in working on addressing and/or a GIS. The reasoning of the funding request is detailed in the attachments to this grant application. Although there is the option to use independent contractors to do the checking and editing of the 911 address points and roads layers, the GIS Department prefers to do the work “in house” so that the department can better control and monitor how the work is done and to what standards the work is done. The Page County GIS Department is interested in three ESRI ArcInfo licenses to upgrade the functionality that the ArcView licenses does not have. Examples of beneficial applications included in ArcInfo are Spatial Analyst, 3D Analyst, COGO (for parcel editing), creation of raster catalogs in a multiuser geodatabase, feature class data manipulation and analysis, among many other features. Currently, we have two ArcView licenses. The current licenses do not have the tools that are necessary to edit, modify, and to create the databases that are necessary for 911 services. In addition, the GIS Department needs a Trimble GPS unit that will be used exclusively for 911 addressing. Currently, the department has one Trimble unit with Terrasync Professional that is being used to support 911 addressing as well as other GIS projects for other departments (Building and Zoning, County Planning, Economic Development, Environmental Services, County Registrar, Commissioner of the Revenue, etc.) and the towns (Luray, Shenandoah and Stanley) in Page County. The additional GPS unit is necessary in order to cover the workload for the Emergency Operations Center for 911 addressing and maintenance. There is also a need to have a second unit as a back up in case one unit fails. The Page County GIS Department uses Geocomm software (extension within ArcGIS) for updating the 911 addresses. Extending the maintenance service for one year will help keep the GIS Department in sync with the Emergency Operations Center which currently has its Geocomm software services extend through April 2010. Geocomm Maintenance includes the SyncroLynx Client, SyncroLynx Server and Geosnap, which costs $3450.00 for one year (according to an estimate done in 4/24/2007). Geocomm’s in-vehicle mapping software will allow Page County’s Emergency responders to have the software to locate emergency areas without having to go through the dispatcher. Thirty licenses cost $29,400.00 according to a recent estimate from Geocomm.

Ongoing Expenses:
1) Page County Board of Supervisors, 2) regional universities for internship opportunities and joint projects, 3) Page County Sheriff's Department, 4) Page County GIS Department

Evaluation:
Once proper personnel is in place, a detailed plan will be created with deadlines. In addition, the GIS Technicians will be be required to keep a detailed daily task log that will be turned in twice a month with timesheets. The GIS Coordinator and Emergency Services Coordinator will evaluate the overall progress done as well as pinpoint areas that need more work (i.e., localities that require address changes or new road names). The evaluation will encompass the following: 1)A description of duties will be created for the GIS Technician(s) 2)New fields in each data layer (address points) will be created. In the fields, the GIS Technician(s) will be required to fill in what was checked, what was changed and who made the changes 3)The GIS Coordinator and GIS Technician(s) will be required to design a work flow of the procedures taken to check and edit addresses and roads on the GIS. After implementation, any changes made to the work flow documentation will be discussed beforehand. 4)The GIS Technician(s) will be required to deliver a task log that details what work was done each day and the duration of each task. The task log will be delivered with the time sheets twice a month. 5)A creation of a list of edits which will be turned in with the task log to the GIS Coordinator. The GIS Coordinator will turn in the list to the Emergency Services Coordinator for his review. 6)A log of all correspondence done, if any, with the citizens in obtaining information regarding addresses or roads. 7)Integration of Spatial Analyst, 3D Analyst and other ArcGIS tools to create a variety of maps to serve the 911 personnel. 8)The daily use of the GPS unit during the grant period is expected. 9)The daily use of Geocomm's E-911 software is expected.

What are the short term, intermediate, and/or long-term outcomes desired for this project?:
Short term: 1) More accurate data layers to help emergency personnel with better GIS technology when an emergency call is placed. 2) Ability for in vehicle emergency personnel to locate emergency areas with in-vehicle mapping without having the dispatcher give directions. Intermediate term: 1) Ability to rely on the address points and roads data layers without concerns of data accuracy and make decisions based on them without concerns. 2) Ability to improve 911 services with additional accurate GIS data layers (emergency landing zones, emergency shelters, fire hydrants, buildings) Long term: 1) Creation of a permanent position to help continue 911 addressing, which includes adding new addresses and new roads and maintaining the quality of the 911 roads and address points layers and future layers. 2) Innovations make the GIS more efficient and effective for 911 services with accurate data layers. An example includes creating 3D layers to analyze the the terrain of locations and the type of roads on the terrain. This is particularly helpful, since Page County has a lot of mountainous and hilly terrain with narrow, rough roads that may be hazardous for non-4WD vehicles. 3) Ability to make better analyses based on accurate data, rather than flawed data. 4) With in-vehicle mapping and when broadband service throughout the county is implemented, the final phase, Automatic Vehicle Location (AVL), is expected to be complete. AVL provides polygons on the mapping to show the closest unit to the incident.

What measures will be used to determine outcomes?:
Each person working on the 911 projects will be required to keep a detailed task log, which is a documentation of work done. The task log will be turned in with timesheets (twice a month) so that the GIS Coordinator can monitor the progress of work done and make plans for improvements. In addition, a database that records all checks and changes made will be designed and kept. Also, a quality check procedure will be placed to check the validity of the editing of the addresses and roads. For the in-vehicle mapping software, through the use of the CAD system, statistics will be reviewed regularly for response times to the scene. The most important measurement is feedback from the actual responders.

How will data be collected and how will evaluations be conducted?:
Data will be collected by the GIS Technician(s) with the aid of a Trimble GPS unit as well as aerial photos and other GIS layers including, but not limited to, parcels. With the use of the Trimble GeoXH unit and Terrasync and Pathfinder Office software, the personnel will be able to differentially correct the GPS points up to sub-foot accuracy. This feature is particularly important in wooded or spacious areas where the boundaries cannot be seen. Each person working on the 911 projects will be required to keep a detailed task log (documentation of work done). The task log will be turned in with the time sheet so that the GIS Coordinator can monitor the progress of the work done. In addition, regular meetings will be held with the

technician(s) working on the 911 projects and the GIS Coordinator and, at times, the Emergency Services Coordinator. The technician(s) will report any problems (i.e., duplicate addresses, inconsistencies in the road layout) with proper documentation. The GIS Coordinator and the Emergency Services Coordinator will then determine what actions to take and follow the E-911 Ordinance (i.e., request address change approval from the Board of Supervisors). In addition, 911 personnel will report any inconsistencies found in the GIS data to the GIS Department so that changes may be made as soon as possible. Final evaluations will be conducted by the GIS Coordinator and Emergency Services Coordinator in determining the accuracy of the data layers and functionality of the data layers (i.e., fields filled out appropriately).

How will data be presented?:

The data will be presented in shapefile and geodatabase feature class format. Changes will be documented in fields in the attribute table along with the initials of the person/people making them. Metadata will be created to document the address points and roads layers. The data layers will be sent in shapefile format to EOC's E-911 system that uses Geocomm's software.

Attachments

Documentation.PDF
Screenshots_of_Errors.doc
911_PSAP_Grant_Specs_FINAL.doc

Sources and Relevant Documents

Salaries for Geospatial Technology-Related Careers

Salaries vary depending on the person's experience, education, position, employer and location. GeoSearch listed the following salary ranges in the nationwide 2003 Salary Survey for the Geospatial Sciences. See the complete report for additional job titles, job descriptions and instructions to calculate the salary ranges for your area.

Job Title	Lowest Salary	Actual Average Salary	Highest Salary
GIS Manager / Coordinator	$51,850	$69,528	$81,516
GIS Project Manager	48,023	58,869	75,834
GPS / Survey Manager	50,390	62,994	76,772
Stereoplotter Operator (all levels)	25,790	43,013	47,784
GIS Programmer (Junior & Senior)	37,010	63,903	75,995
GIS Specialist (Junior & Senior)	38,765	57,462	68,255
GIS Technician	31,028	34,801	45,848
GIS Database Manager	51,750	64,500	74,450
Raster/Vector Technician	35,840	41,530	50,020
Digital Ortho Image Technician	27,287	34,336	45,268
Quality Assurance Analyst	38,862	49,164	64,487
GPS Surveyor/Technician	29,236	38,171	47,410
GPS Programmer	53,138	63,800	74,500
Aerial Photographer	30,347	36,806	39,341
Programmer/Analyst (Junior & Senior)	39,544	70,732	79,560

The U.S. Bureau of Labor Statistics published these 2002 salary statistics:

1. Half of all cartographers and photogrammetrists earned between $32,580 and $55,610.
2. Half of all surveyors earned between $29,320 and $53,440.
3. Half of all surveying and mapping technicians earned between $22,640 and $39,070.

2003 Federal Government Average Salaries:

- land surveyors - $62,980
- cartographers - $67,989
- geodetic technicians - $55,374
- surveying technicians - $33,316
- cartographic technicians - $43,517

You may also be interested in several informal salary surveys available at the following web sites: Clark University, GISLounge.com, GISJobs.com, and the University of Florida.

GIS TECHNICIAN
Public Utilities Department
Salary: $33,605 - $42,007

Under regular supervision, performs responsible technical work to assist the Public Utilities Engineering department in the development, implementation, management and operation of a geographical information system (GIS). Work involves handling the responsibility for creating, maintaining, and verifying the accuracy of all digital map data included in the City GIS database which includes but is not limited to the conversion of the subdivision plats, the maintenance of the Centerlines Address Range Information, the maintenance of the Imperious Surfaces inventory (buildings, parking lots, pavement, etc.) and all appropriate attribution required by the layers; coordinating with representatives of other City departments and the general public to assure that the use of the GIS data is appropriate and accurate which takes the form of participation in and leading of GIS User training seminars, Users Groups, and informal training sessions; producing custom map products for City staff and citizens, Council and City Mangers which are typically very specifically themed and have short turn-around time.

Requirements:

- Requires a Bachelor's degree in GIS, geography, planning or related field supplemented by two to three years of progressively responsible experience in GIS system design, programming and/or mapping, or an equivalent combination of education, training, experience to provide the required knowledge, skills and abilities.
- Must possess a valid driver's license.

Apply Now!

ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE, INC.
ESRI, Inc.
380 New York Street
Redlands, CA 92373-8100
Phone: 909-793-2853
Fax: 909-307-3049

To expedite your order, please attach a copy of this quotation to your purchase order.
Quote is valid from: 12/03/2007 To: 03/02/2008

Quotation # 20307758

Date: December 3, 2007
Customer # 305097
Contract # 2003MPA2064

COUNTY OF PAGE
GIS DEPT
101 S COURT ST
LURAY, VA 22835

ATTENTION: AMY OZEKI
PHONE: 540-743-7316
FAX:

Material	Qty	Description	Unit Price	Total
88925	2	ArcInfo Upgrade from ArcView Single Use	6,273.00	12,546.00
52382	1	ArcInfo Concurrent Use License	7,514.00	7,514.00
105598	1	ArcGIS 9.2 with USB Key Installation Package	0.00	0.00
			Item Total:	20,060.00
			Subtotal:	20,060.00
			Estimated Shipping & Handling (2 Day Delivery) :	0.00
			Contract Pricing Adjust:	0.00
			Total (excludes applicable sales tax):	$20,060.00

The prices quoted herein are reflective of the State of Virginia's MPA contract # 030700-ESRI.

The prices quoted herein (Contract # VA030700-ESRI) are applicable if the purchase is made through the eVA system (http://www.eva.state.va.us/).

Shipping and handling included.

Quoted By: Geoffrey Walker, (800) 447-9778 x2931
Email: gwalker@esri.com

Account Manager: Robert Rike
Email: rrike@esri.com

Acceptance of this quotation is limited to the ESRI License Agreement and the Quotation Terms and Conditions
This Quotation is made in confidence for your review. It may not be disclosed to third parties, except as required by law.

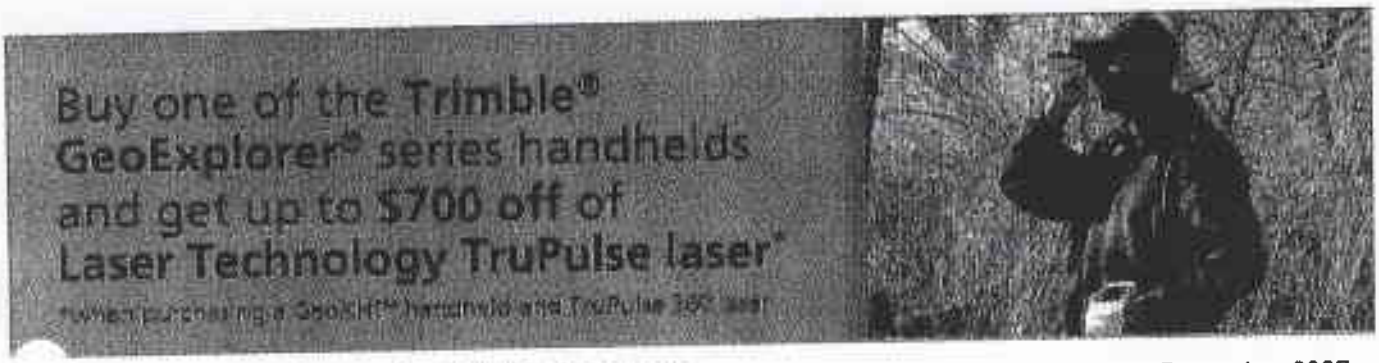
If sending remittance, please address to: ESRI, File No. 54630, Los Angeles, Ca 90074-4630

WALKERG

This offer is limited to the terms and conditions incorporated and attached herein.

GeoExplorer 2005 Series

GeoExplorer® 2005 series handhelds are advanced systems for GIS data collection and mobile GIS applications, integrating a Trimble® GPS receiver with a handheld computer running Microsoft® Windows Mobile™ Version 5.0 software.



Any customer who purchases a GeoXH™ handheld from the Trimble Store between now and 21 December 2007 will receive $500 off the list price of a TruPulse 200 or $700 off of the list price of a TruPulse 360. Any customer purchasing a GeoXT™ handheld during the same time will receive $400 off the list price of a TruPulse 200 or $600 off the list price of a TruPulse 360. Simply take your Trimble invoice to a local Laser Technology reseller to receive the discount off the purchase of a TruPulse laser. To find your local Laser Technology reseller click here.

See below for related products.

Add to Cart

Configurations

GeoXH Handheld P/N 61000-00 $5295.00

Rugged handheld with subfoot GPS receiver and Microsoft Windows Mobile Version 5.0 software

GeoXH Handheld (Gray) P/N 61000-80 $5295.00

Rugged handheld with subfoot GPS receiver and Microsoft Windows Mobile Version 5.0 software (Gray)

GeoXT Handheld P/N 61000-20 $4295.00

Rugged handheld with submeter GPS receiver and Microsoft Windows Mobile Version 5.0

Welcome

Guest
Login

Register

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GeoXT Handheld (Gray)	P/N 61000-70	$4295.00

Rugged handheld with submeter GPS receiver and Microsoft Windows Mobile Version 5.0 software (Gray)

GeoXM Handheld	P/N 61000-50	$2595.00

Rugged handheld with 1-3 meter GPS receiver and Microsoft Windows Mobile Version 5.0 software

GeoXM Handheld (Gray)	P/N 61000-75	$2595.00

Rugged handheld with 1-3 meter GPS receiver and Microsoft Windows Mobile Version 5.0 software (Gray)

Related Products

Software

TerraSync Professional Software with GPS Pathfinder Office Software	P/N 50538-00	$2995.00
TerraSync Professional Software with GPS Analyst Software	P/N 56914-00	$2995.00
GPS Analyst Extension for ESRI ArcGIS Software	P/N 52726-04	$1995.00
GPS Pathfinder Office Software	P/N 34191-32	$1995.00
TerraSync Professional Edition Software	P/N 45955-05	$1295.00
GPScorrect Extension for ESRI ArcPad Software	P/N 46837-05	$495.00
TerraSync Standard Edition Software	P/N 45950-05	$295.00

Optional Antenna Accessories

Zephyr Antenna Kit	P/N 55407-00	$2195.00
Hurricane Antenna Kit	P/N 52446-00	$695.00
Pole Mountable Groundplane for Patch Antenna	P/N 39705-00	$175.00
Magnetic Mount	P/N 56008-00	$100.00
External Patch Antenna (5 m)	P/N 56237-07	$75.00
External Patch Antenna (1.5 m)	P/N 56237-08	$75.00
Hurricane/Zephryr Antenna Cable (1.5m)	P/N 50643-08	$70.00
Hurricane/Zephyr Antenna Cable (5m)	P/N 50643-07	$70.00

Geo comm

Customer: Page County, VA
Date: 04/24/07
Expires 11/30/07

Products and Services Quotation

7 SyncroLynx Client	November 30, 2007	$350
1 SyncroLynx Server	November 30, 2007	$1,000
1 GeoSnap	November 30, 2007	$2,100

Dec 2007 - Nov 2008	$3,450	
Dec 2008 - Nov 2009	$3,450	
Dec 2009 - April 2010	$1,438	(Annual fee prorated to 5 months)

=$4888.00
to be insync with EOC

Pricing Notes:

1) Support & Maintenance includes one year of 8:00 AM to 5:00 PM CST unlimited call-in support, 365/24/7 emergency support, all version upgrades, and system service releases, as necessary.

Prepared by: Jon Greene
Account Manager
423.202-6497
jgreene@geo-comm.com

In-Vehicle Mapping [20 licenses]

Qty	Description	Price/Unit	Total Price
1-10	MobiLynx Mobile Mapping System-one license needed per mobile unit	$800	$8,000
1-10	MobiLynx Support and Maintenance each license per year	$200	$2,000
11-20	MobiLynx Mobile Mapping System-one license needed per mobile unit	$600	$6,000
11-20	MobiLynx Support and Maintenance	$120	$1,200
20	MobiLynx Installation & Training (see note)		$4,000
	In-Vehicle Mapping [20 licenses] Total		**$21,200**

Note: MobiLynx Installation and Training price is for an Implementation Specialist to be onsite for no more than two day. During that time, the Implementation Specialist will install 10 mobile licenses and will train a county designee to install the remaining licenses.

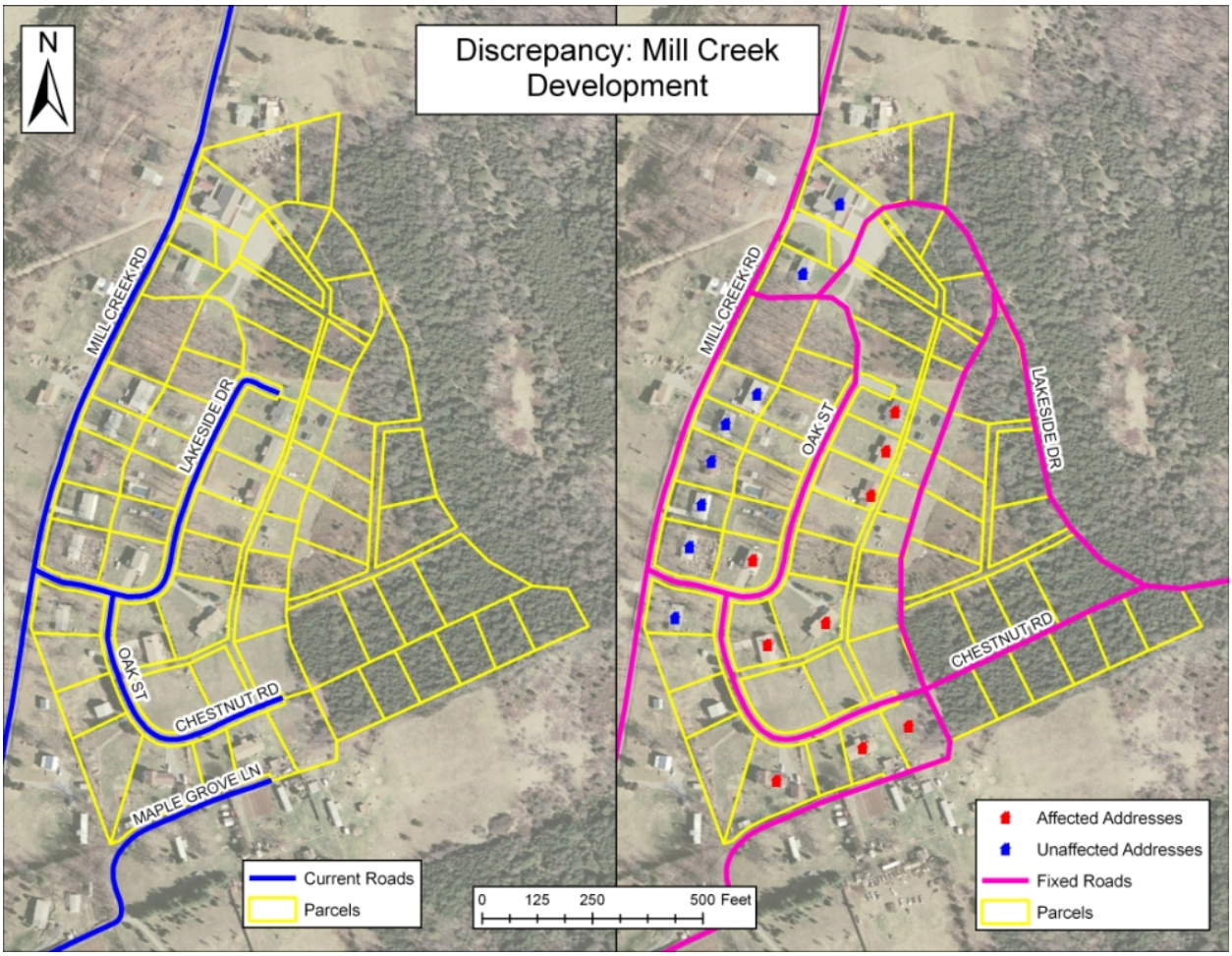
In-Vehicle Mapping [30 licenses]

Qty	Description	Price/Unit	Total Price
1-10	MobiLynx Mobile Mapping System-one license needed per mobile unit	$800	$8,000
1-10	MobiLynx Support and Maintenance each license per year	$200	$2,000
11-20	MobiLynx Mobile Mapping System-one license needed per mobile unit	$600	$6,000
11-20	MobiLynx Support and Maintenance	$120	$1,200
21-30	MobiLynx Mobile Mapping System-one license needed per mobile unit	$600	$6,000
21-30	MobiLynx Support and Maintenance	$120	$1,200
30	MobiLynx Installation & Training (see note)		$5,000
	In-Vehicle Mapping [30 licenses] Total		**$29,400**

Note: MobiLynx Installation and Training price is for an Implementation Specialist to be onsite for no more than three day. During that time, the Implementation Specialist will install 15 mobile licenses and will train a county designee to install the remaining licenses.

On the GIS, there are many address points not addressed or addressed incorrectly. An extensive QC must be done for the whole county to ensure that the address points data layer is consistent to what is on the field as well as with the official plat. The roads layer also needs to be checked for proper shape and location, since inconsistencies have been found in the roads layer when compared to findings on the field.

In addition, we have found errors in the roads on the GIS by comparing the fieldwork findings to the GIS and the official plats. A QC must be done on the roads layer to make sure that the road names, distances and locations are consistent with the field and with the official plats. In the image below, the map on the left is how the roads layer currently looks. The map on the right is how the road should be. Several addresses points will also need to be changed to be consistent with the Page County E-911 Addressing Ordinance.



PSAP Grant Request ($141,950.00) Updated 2008-01-08

The Page County GIS Department is a developing department that needs funding to help the Emergency Operations Center build, edit and maintain its 911 mapping system and emergency endeavors that require accurate spatial information. In order for E-911 to have a successful mapping system, funding is necessary in order to pay for qualified personnel and purchase equipment.

This grant proposal encompasses the following needs:

- Wage for GIS Technician with a University Degree
- ESRI ArcGIS Upgrade from ArcView to ArcInfo
- Trimble GPS and Terrasync Professional
- Geocomm Software Extension Until 2010
- In-Vehicle Mapping Software (MobiLynx)

Wage for GIS Technician(s) with a University Degree

According to the US Department of Labor, surveying and mapping technicians working for local governments in May 2004 had a median annual salary of $34,810 (http://stats.bls.gov/oco/ocos040.htm) which calculates to about $19.13/hour for a 35-hour week for a 52-week time period. Geospatialcareers.net lists the average at $34,801 a year (geospatialcareers.net), which amounts to about $19.12/hour for a 35 hours/wk for a 52-week time period. In Virginia, an advertisement was found for the City of Suffolk where they are searching for a GIS Technician with a salary range between $33,605-$42,007, which calculates to about $18.46/hour - $23.08/hour.

The calculations above are made using the following formula:
Yearly Salary ÷ 52 weeks ÷ 35 hours = Approximate Wage Per Hour

Based on the research above, the GIS Department estimates $19.00/hour for a qualified GIS Technician with a university degree in GIS or related field. Prior experience in 911 addressing, GIS design and/or mapping is required. This person will maintain databases in ArcGIS, Microsoft Access and Microsoft Excel and solve discrepancies and holes in the 911 addressing by following the guidelines of the E-911 Ordinance. The candidate will conduct fieldwork throughout Page County and possess advanced skills using a GPS unit and exporting GPS data onto a GIS. Experience using Terrasync and Pathfinder Office is required. Also, the person must have excellent skills in communicating with the citizens regarding address changes and new 911 address as well as making detailed, organized documentation of work done to facilitate the GIS Coordinator, Emergency Services Coordinator and Page County in making decisions based on 911 address changes as well as other decisions that require well documented 911 addresses.

Although the GIS Department may consider independent contractors to help edit and correct the Address Points layer and Roads layer, it prefers to work with personnel internally so that the the

department can better control and monitor how the work is done and to what standards the work is done.

ESRI ArcGIS Upgrade from ArcView to ArcInfo

The Page County GIS Department is interested in three ESRI ArcInfo licenses to upgrade the functionality that the ArcView licenses does not have. Examples of beneficial applications included in ArcInfo are Spatial Analyst, 3D Analyst, COGO (for parcel editing), creation of raster catalogs in a multiuser geodatabase, feature class data manipulation and analysis, among many other features. Currently, we have two ArcView licenses. The current licenses do not have the tools that are necessary to edit, modify, and to create the databases that are necessary for 911 services.

Trimble GPS and Terrasync Professional and Pathfinder Office

In addition, the GIS Department needs a Trimble GPS unit with Terrasync Professional and Pathfinder Office that will be used exclusively for 911 addressing. Currently, the department has one Trimble unit with Terrasync Professional and Pathfinder Office that is being used to support 911 addressing as well as other GIS projects for other departments (Building and Zoning, County Planning, Economic Development, Environmental Services, County Registrar, Commissioner of the Revenue, etc.) and the towns (Luray, Shenandoah and Stanley) in Page County. The additional GPS unit is necessary in order to cover the workload for the Emergency Operations Center for 911 addressing and maintenance. There is also a need to have a second unit as a back up in case one unit fails.

Geocomm Software Extension Until April 2010

The Page County GIS Department uses Geocomm software (extension within ArcGIS) for updating the 911 addresses. Extending the maintenance service for one year will help keep the GIS Department in sync with the Emergency Operations Center which currently has its Geocomm software services extend through April 2010. Geocomm Maintenance includes the SyncroLynx Client, SyncroLynx Server and Geosnap, which costs $3450.00 for one year (according to an estimate done in 4/24/2007).

Geocomm In-Vehicle Mapping (MobilLynx, 30 licenses)

In 2007 the dispatchers of the Page County EOC logged 23,752 calls for service. When these calls are dispatched the emergency response personnel are depending on the dispatcher to provide them with detail directions to the location of the call. The County is growing with new streets, addresses, and subdivisions are being added all the time. If the responding units had the capability to look at an in-vehicle mapping system they would save time as well as valuable time of the dispatcher. The in-vehicle mapping would eliminate the need for the dispatcher to provide detail radio communications and give the responding unit the ability to see the location first hand. Having the in-vehicle mapping would speed up the response time because they would be able to see where they are in correlation to the address.

Overview of Funding Requested

Address Points Layer	Reasoning: To help 911 personnel find the addresses accurately on the map. Currently, we have a high percentage of errors on the mapping system with many addresses missing or not addressed correctly. Each address needs to be verified, added and/or edited using a GPS and/or GIS.
Numbers	Approximately 15,000 addresses
Hourly wage for GIS Technician with GIS skills	$19/hour
Approximate Work Load	4 address checked/added/corrected per hour 28 addresses per 7-hour day 3750 total hours (approximately 536 7-hour days) to complete 15,000 addresses
Numbers	$19/hour x 7 hours = $133.00/day 3750 (total hours) x $19/hour = **$71,250.00**

Roads Layer	Reasoning: To help 911 personnel with accurate and up-to-date roads layer. Each road needs to be verified, added and/or modified on the GIS based on how they are in reality.
Numbers	Approximately 1050 roads
Hourly wage for GIS Technician with GIS skills	$19/hour
Approximate Work Load	3 roads verified/edited/created in an hour 21 roads per 7-hour day 350 hours total (or 50 7-hour days) to complete 1050 roads
Numbers	$19/hour x 7 hours = $133.00/day 350 (total hours) x $19/hour = **$6,650.00**

Address Changes	Reasoning: To make adjustments to existing verified addresses or structures with no 911 addresses in order for them to conform to the Page County E-911 ordinance.
Numbers	10% of 15,000 addresses or 750 addresses
Hourly wage for GIS Tech with GIS skills	$19/hour
Details	Find/Correct/Inform 5 addresses/hour 150 hours total (21.43 7-hour work days)
Numbers	$19/hour x 7 hours = $133.00/day 150 (total hours) x $19/hour = **$2,850.00**

Trimble GPS Unit	Reasoning: To have a GPS unit used for 911 addressing purposes
Estimate	**$5295.00 Trimble GeoXH Handheld** (from Trimble Online Store, accessed 11/29/2007)

Terrasync Professional with Pathfinder Office	Reasoning: To be able to collect, maintain and process GPS data, such as the Roads and GPS points layers for 911 addressing.
Estimate	**$2995.00** (from Trimble Online Store, accessed 11/29/2007)

ESRI Upgrade to ArcInfo	Reasoning: To be able to use advanced features such as spatial analyst and make analyses and create 3D to assist 911 personnel in determining slope and finding areas that are better for 911 vehicles in case of an emergency. Page County is hilly with several undeveloped roads that are not optimal for regular vehicles without 4 wheel drive. Other useful features include data manipulation and analysis tools and COGO, which are also not available in ArcView.
Estimate	**$20,060.00** (Estimate from ESRI Customer Service Contact Geoffrey Walker) Estimate includes $12,546.00 for upgrading two ArcView licenses to ArcInfo and $7,514.00 for a new ArcInfo license.

Geocomm Software Maintenance Extension	Reasoning: To be in sync with the Emergency Operations Center who use have a Geocomm 911 software (SyncroLynx and Geosnap) maintenance contract for one year (2008-2009)
Estimate	**$3,450.00** (Quote from April 24, 2007)

Geocomm In-Vehicle Mapping Software	Reasoning: To provide an efficient way for responders in vehicles to locate emergency areas without the dispatcher having to provide them with detailed directions to the location of the call.
Estimate	**$29,400.00** (Estimate fromGeocomm) Estimate includes 30 licenses of the MobiLynx Mobile Mapping system and maintenance, training and support.