



FY18 PSAP GRANT APPLICATION

PROJECT TITLE

BTW2 and Floyd Geocom Server Solution

GRANT APPLICANT PROFILE/PROJECT CONTACT

PSAP/HOST PSAP NAME: Twin County 911

CONTACT TITLE: 911 Coordinator

CONTACT FIRST NAME: Jolena

CONTACT LAST NAME: Young

ADDRESS 1: PO Box 510

ADDRESS 2: 353 N Main St

CITY: Galax

ZIP CODE: 24333

CONTACT EMAIL: jyoung@galaxva.com

CONTACT PHONE NUMBER: 276-236-5122 opt 2

CONTACT MOBILE NUMBER: 276-233-3231

CONTACT FAX NUMBER: 276-236-2965

REGIONAL COORDINATOR: Tim Addington

HOST PSAP AND PARTICIPATING PSAPS/LOCALITIES

Bland County	Wythe County
Floyd County	Twin County

GRANT TYPE

Individual PSAP

X Shared Services



TIER

Out of Service

Non-Vendor Supported*

Technically Outdated*

X Strengthen

Not Applicable

If technically outdated or non-vendor supported, application MUST include age and/or version of hardware/software.

VERSION: Geocom Desktop/ARCGIS 10.2 # YEARS of HARDWARE/SOFTWARE: _____

PRIORITY/PROJECT FOCUS MAPPING SYSTEMS

FINANCIAL DATA

Amount Requested: \$ 560,526

Total Project Cost: \$ 560,526



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:

GeoComm's proposes a shared, redundant GeoLynx Server System to the counties of Bland, Floyd, and Wythe, and the Twin County E-911 Commission. Each host site will utilize one large server for virtualization of servers. Each host site will have one active and one passive GeoLynx Server license, and one load balancer.

Sites which are not host sites, will have a basic server for processing any 9-1-1 call, CAD, or AVL information into the system.

Local boundaries, RCL and address point data along with other layers for Bland County, Floyd County, Wythe County, and Twin County E-911 GIS datasets will be aligned and aggregated into one seamless GIS dataset to allow for use of the shared GeoLynx Server system.

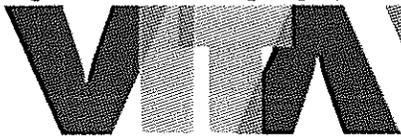
The server will enable more timely data transfer of data from GIS into Communications, and between surrounding counties to eliminate border addressing issues.

The 3 jurisdictions are in economically challenged areas. Without grant funding the jurisdictions will continue to operate on desktop geolynx, and will not be able to take advantage of the latest ArcGIS capabilities. Data transfer will still be manual. Each jurisdiction will continue to utilize their own layouts for boundary, RCL and address point data.



This project supports the regional strategic plan to enable like systems so the PSAP's could operate from one or both of the other two PSAP's in the event of a disaster. It also supports the strategic direction of reducing costs by sharing technological infrastructure, and implementing procedures and systems utilizing NG911 standards.

The jurisdictions currently pay maintenance for Geocom. By sharing technology, the proposed maintenance cost is in-line with the current maintenance budget so will be able to sustain the system in year 6 and beyond.



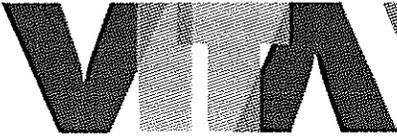
PROJECT GOAL

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

This project supports both goals of the Virginia Statewide Comprehensive 9-1-1 Plan and seeks to fulfill an important initiative. There are only two goals in the Virginia Statewide Comprehensive 9-1-1 Plan. The first goal is provide a standard level of 9-1-1 emergency dispatch services to the public. *When achieved, this goal will provide consistent 9-1-1 emergency dispatch services to anyone residing in or passing through the Commonwealth, at any time of day, and during any event. Consistent service means that all 9-1-1 centers can receive, process, and dispatch "calls" in a dependable and repeatable manner.* Using the Geocom server software will speed data transfer ensuring the most up-to-date mapping data is available for use when dispatching the call and routing squads.

The second goal of the Virginia Statewide Comprehensive 9-1-1 Plan is to position 9-1-1 centers to continuously meet the public's expectations. *When achieved, this goal will allow Virginia to keep up with the rapid pace of technology innovation and therefore the constant changes in customers' expectations.* This project will allow BTW2 PSAP's to align data to NG911 standards, and the data transfer would enable the centers to achieve more timely GIS updates.

PROJECT OBJECTIVES



Describe the objectives that will support the goals identified above:

The project objectives are:

Engage a vendor who can provide a server solution to standardize boundary, RCL and address point data, speed data delivery from GIS to Communications, and enable access from multiple points simultaneously.

Align data to a common dataset.

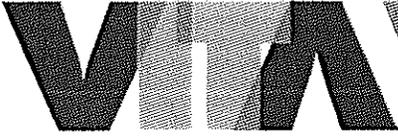
Install servers and connect via existing Ethernet and add an additional connection for Floyd County if cost effective.

Establish procedures for updates between GIS and Communications

SHARED SERVICES (if applicable)

Describe the relationship of the project to the participating PSAPs:

The system will be comprised of three host sites, located at Floyd County, Twin County E-911, and Wythe County. Each host site will utilize one large server for virtualization of the three systems. Each host site will have one active and one passive GeoLynx Server license, and one load balancer. Sites which are not host sites, i.e. Bland County, Carroll County, and Grayson County, will need a basic server for processing any 9-1-1 call, CAD, or AVL information into the system. Twin County 911 will act as fiscal agent.



Describe the intended collaborative efforts and resource sharing opportunities:

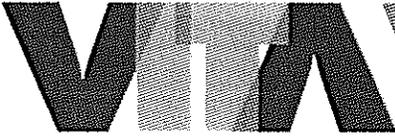
Bland County, Floyd County, Twin County E-911 Commission, and Wythe County will utilize a shared Metro Ethernet CPE & CAD network.

- Bland County, Twin County E-911 Commission, and Wythe County will utilize a shared active/active+passive/passive GeoLynx Server system. The system will consist of 2 active GeoLynx Server licenses and 2 passive GeoLynx Server licenses. The Floyd County GeoLynx Server system will reside on its own dedicated active/passive GeoLynx Server system.

- The passive GeoLynx Server licenses will provide redundancy in instances when the active servers are not available such as for routine maintenance and/or in the event the primary GeoLynx Servers are inoperable. The use of active and passive GeoLynx Server licenses simultaneously is not permitted.

- The GeoLynx Server base licensing costs is shared between Bland County, Twin County E-911, and Wythe County, while the dispatch mapping positions are priced based on each participating entity's dispatcher positions.

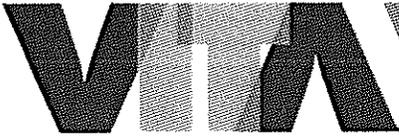
Bland County, Floyd County, Wythe County, and Twin County E-911 GIS datasets must be aggregated into one seamless GIS dataset to allow for use of the shared GeoLynx Server system. It will be the responsibility of King-Moore, Inc. to coalesce the data. In addition, the GeoLynx Server GIS setup will be built utilizing the regional dataset created by King-Moore. As such, the GIS Setup Service cost has been evenly distributed between Bland County, Floyd County, Wythe County, and Twin County E-911.



**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.	01 / 15 / 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 / 18
IMPLEMENTATION - Purchased components are delivered and installed and training is performed	03 / 31 / 18
TESTING/COMPLETION - Performance of system/solution is validated and system/solution goes "live"	06 / 30 / 18



BUDGET AND BUDGET NARRATIVE

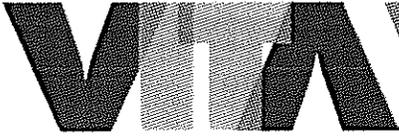
List the planned expenditures to be made with grant funds. Briefly explain the reason for each requested budget item and provide the basis for its cost. In addition, if contingency cost has been added, please identify the amount.

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 planned expenditures using grant funds are detailed below:

Bland County implementation costs	\$58,867
Maintenance 2-5	26,936
Floyd County implementation costs	\$86,546
Maintenance 2-5	43,136
Twin County implementation costs	\$74,317
Maintenance 2-5	35,632
Wythe County implementation costs	\$79,468
Maintenance 2-5	38,531
Servers (3)	\$54,750
Load Balancer (3)	\$15,000
Contingency (10%)	\$47,343
Total	\$560,526

Implementation costs at each site are for: GeoLynx Server GIS Setup Services; Active/passive GeoLynx Server licenses; GeoLynx Server Dispatch Add-on Module; GeoLynx Server AVL Add-on Module; Standard Dispatch CAD Interface; GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing in GeoLynx Server; GeoLynx Server Dispatch Mapping and AVL System Installation; GeoLynx Server Dispatch Mapping and AVL System Training; Standard Dispatch CAD Interface Installation and Training Service; Project Management Services; and Year one 24/7 maintenance and support



EVALUATION

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

Our performance measures will begin with proper purchases of services. Procurement will be in accordance with all federal, state and local procurement standards. The next milestone will be Acceptance Testing. The final evaluation of success will be improved data transfer and a NG911 shared data set.



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

How would a consolidation take place and provide improved service:

N/A – Not a consolidation grant

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:

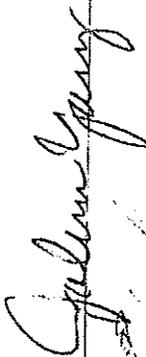
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What communication changes or improvements should be made in order to better support operations:

[Click here to enter text](#)

Multi-Jurisdictional Agreement

The PSAPs listed below hereby wish to participate in a multi-jurisdictional PSAP Shared Services Grant. Twin County 911 will be the "host" for this grant and will be the fiscal agent. Each individual PSAP is eligible to participate in a maximum of \$175,000 per PSAP for all Shared Service Projects. Each PSAP below has agreed to participate in a multi-jurisdictional application for a shared service project - BTW2 and Floyd Regional GIS Server. The undersigned below authorizes VITA to transfer the Regional shared services grant funds, if approved, to the identified fiscal agent upon a draw down request for the FY18 shared service program grant. Additionally, the undersigned agree to participate in quarterly BTW2 Steering Team meetings, and to review and update the BTW2 Steering Team By-Laws and related Memo of Understanding as part of this Shared Service Project.

JURISDICTION	PRINTED NAME	SIGNATURE	DATE
Twin County 911 Regional Commission	Jolena Young		9/29/2016
Bland County			9/29/2016
Wythe County	Stephen P. Beer		9/29/2014
Floyd County	Kevin Sowers		9/29/16

Budgetary Quote

Prices are valid for a period of 90 days.

Total does not include sales tax. Applicable taxes will be determined upon contract signing.
Buyer is responsible for paying all sales taxes.

GSA Pricing Summary

Entity	One-time Price	Annual Price (1 st year)	Extended Annual Price (years 2-5)	Total Price
Bland County	\$52,133.37	\$6,733.88	\$26,935.52	\$85,802.77
Floyd County	\$75,761.44	\$10,784.02	\$43,136.08	\$129,681.54
Twin County E-911	\$65,409.48	\$8,908.01	\$35,632.04	\$109,949.53
Wythe County	\$69,834.84	\$9,632.72	\$38,530.88	\$117,998.44

Regional System Total: \$263,139.13 \$36,058.63 \$144,234.52 \$443,432.28

Notes: Fees from third party vendors are not included in this proposal.

Software support and maintenance services shall commence after software installation and continue for one year.

Pricing is based on GSA contract GS-35F-0594S unless not applicable. Items not included on the GeoComm GSA contract are noted throughout this section with an asterisk (*).

Bland County Price Detail

Bland County GeoLynx Server Dispatch Mapping: GSA Pricing

Description	GSA Price
Base Pricing	
GeoLynx Server GIS Setup Services	\$225.41
Active/Passive GeoLynx Server licenses (qty: 2 each, shared)	\$20,259.40
GeoLynx Server Dispatch Add-on Module (qty: 2)	\$7,830.00
GIS Maintenance Utility	Included
Standard Dispatch CAD Interface	\$5,000.00*
9-1-1 Call and CAD Incident Viewing in GeoLynx Server	Included
GeoLynx Server Dispatch Mapping System Installation	\$6,363.37
GeoLynx Server Dispatch Mapping System Training	\$6,621.50
Standard Dispatch CAD Interface Installation and Training Service	Included*
Project Management Services	\$5,833.69
GSA Base Pricing Total:	\$52,133.37
Extended Annual Pricing, Total years 2-5	
Active/Passive shared GeoLynx Server licenses Year One Annual Software Support and Maintenance	\$4,284.46
GeoLynx Server Dispatch Add-on Module Year One Annual Software Support and Maintenance	\$1,449.42
GIS Maintenance Utility Annual Year One Software Support and Maintenance	Included
Standard Dispatch CAD Interface Year One Annual Software Support and Maintenance	\$1,000.00*
9-1-1 Call and CAD Incident Viewing in GeoLynx Server Year One Annual Software Support and Maintenance	Included
GSA Annual Pricing Total:	\$6,733.88
GSA Year One Total:	\$58,867.25
Extended Annual Pricing, Total years 2-5	
Active/Passive shared GeoLynx Server licenses	\$17,137.84
GeoLynx Server Dispatch Add-on Module	\$5,797.68
GIS Maintenance Utility	Included
Standard Dispatch CAD Interface	\$4,000.00*
9-1-1 Call and CAD Incident Viewing in GeoLynx Server	Included
GSA Extended Annual Pricing Total:	\$26,935.52
Bland County GSA Total, years 1-5:	\$85,802.77

Bland County Pricing Notes:

- Bland County, Floyd County, Twin County E-911 Commission, and Wythe County will utilize a shared Metro Ethernet CPE & CAD network.
- Bland County, Twin County E-911 Commission, and Wythe County will utilize a shared active/active+passive/passive GeoLynx Server system. The system will consist of 2 active GeoLynx Server licenses and 2 passive GeoLynx Server licenses. The Floyd County GeoLynx Server system will reside on its own dedicated active+passive GeoLynx Server system.
- The passive GeoLynx Server licenses will provide redundancy in instances when the active servers are not available such as for routine maintenance and/or in the event the primary GeoLynx Servers are inoperable. The use of active and passive GeoLynx Server licenses simultaneously is not permitted.
- The GeoLynx Server base licensing costs is shared between Bland County, Twin County E-911, and Wythe County, while the dispatch mapping positions are priced based on each participating entity's dispatcher positions.
- Each participating entity is required to purchase a CAD interface.
- Bland County, Floyd County, Wythe County, and Twin County E-911 GIS datasets must be aggregated into one seamless GIS dataset to allow for use of the shared GeoLynx Server system. It will be the responsibility of King-Moore, Inc. to coalesce the data. In addition, the GeoLynx Server GIS setup will be built utilizing the regional dataset created by King-Moore. As such, the GIS Setup Service cost has been evenly distributed between Bland County, Floyd County, Wythe County, and Twin County E-911.
- Hardware meeting minimum specifications outlined by GeoComm is required for system functionality. Pricing does not include system hardware. Buyer is responsible for providing hardware. If buyer provides a dedicated web server with more than one quad core processor (four cores of processing), additional GeoLynx Server license fees will apply. Hardware specifications may be found beginning on page 10 of this document.
- System training will be provided to each individual participating entity at their respective locations.
- Fees, if applicable, from your CAD vendor are not included in the above pricing. CAD Vendor, database vendor, or buyer's onsite IT staff must either:
 - Make the necessary CAD database accessible to GeoComm by way of Microsoft SQL Server database or view within the CAD database. Or,
 - Provide GeoComm with an ODBC connection to the CAD database, including drivers, connection details, and credential
- The GIS Maintenance Utility is used for updating GIS data within GeoLynx Server, including cached services. Additional uses beyond this would require custom programming services, for a fee, and would be evaluated by GeoComm on a case-by-case basis.
- The proposed system does not have routing functionality. To achieve basic routing using local data in GeoLynx Server, an Esri Network Routing Dataset with one-way, speed, distance, and minutes attributes may be implemented. ArcGIS Network Analyst Extension for Desktop is required to create, edit, and maintain the routing dataset. GeoComm may provide pricing for the ArcGIS Network Analyst for Desktop and/or associated services to develop and maintain the dataset. Additional pricing may be provided for GeoComm to develop advanced routing attributes.
- In addition, the Network Analyst extension for GeoLynx Server is needed to make use of Roads GIS data for routing in GeoLynx Server.
- Software support and maintenance pricing is quoted for multiple years (up to five years). Pricing proposed for four additional years is valid if paid in full upon contract signing. Pricing will increase by five percent per year after the second year if services are not paid in full at contract signing.

Floyd County Price Detail

Floyd County GeoLynx Server Dispatch Mapping: GSA Pricing

Description	GSA Price
Base Pricing	
GeoLynx Server GIS Setup Services	\$225.41
Active/passive GeoLynx Server licenses (qty: 1 each)	\$24,599.25
GeoLynx Server Dispatch Add-on Module (qty: 5)	\$19,575.00
GeoLynx Server AVL Add-on Module	\$4,350.00
Standard Dispatch CAD Interface	\$5,000.00*
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing in GeoLynx Server	Included
GeoLynx Server Dispatch Mapping and AVL System Installation	\$9,782.62
GeoLynx Server Dispatch Mapping and AVL System Training	\$7,571.50
Standard Dispatch CAD Interface Installation and Training Service	Included*
Project Management Services	\$9,007.66
GeoLynx Server AVL Add-on Module Existing License Transfer Price Adjustment:	(\$4,350.00)
GSA Base Pricing Subtotal:	\$75,761.44
Extended Annual Pricing, Total years 2-5	
Active/Passive GeoLynx Server licenses Year One Annual Software Support and Maintenance	\$5,355.72
GeoLynx Server Dispatch Add-on Module Year One Annual Software Support and Maintenance	\$3,623.55
GeoLynx Server AVL Add-on Module Year One Annual Software Support and Maintenance	\$804.75
Standard Dispatch CAD Interface Year One Annual Software Support and Maintenance	\$1,000.00*
Annual Year One Software Support and Maintenance	Included
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing in GeoLynx Server Year One Annual Software Support and Maintenance	Included
GSA Annual Pricing Total:	\$10,784.02
GSA Year One Total:	\$86,545.46
Extended Annual Pricing, Total years 2-5	
Active/Passive GeoLynx Server licenses	\$21,422.88
GeoLynx Server Dispatch Add-on Module	\$14,494.20
GeoLynx Server AVL Add-on Module	\$3,219.00
Standard Dispatch CAD Interface	\$4,000.00*
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing in GeoLynx Server	Included
GSA Extended Annual Pricing Total:	\$43,136.08
Floyd County GSA Total, years 1-5:	\$129,681.54

Floyd County Pricing Notes:

- Bland County, Floyd County, Twin County E-911 Commission, and Wythe County will utilize a shared Metro Ethernet CPE & CAD network.
- The Floyd County GeoLynx Server system will reside on its own dedicated active/passive GeoLynx Server system. Bland County, Twin County E-911 Commission, and Wythe County will utilize a shared active/active+passive/passive GeoLynx Server system. The system will consist of 2 active GeoLynx Server licenses and 2 passive GeoLynx Server licenses.
- The passive GeoLynx Server licenses will provide redundancy in instances when the active servers are not available such as for routine maintenance and/or in the event the primary GeoLynx Servers are inoperable. The use of active and passive GeoLynx Server licenses simultaneously is not permitted.
- Floyd County currently utilizes a P25 AVL interface with GeoLynx Desktop. This functionality will be retained in GeoLynx Server. As such, Floyd County is eligible for a one time GeoLynx AVL existing license transfer price credit, reflected above.
- AVL does not include GPS units, their installation, or a data service plan to provide for data transport to and from the vehicles being tracked at the dispatch center. Floyd County is responsible for providing these elements.
- Each participating entity is required to purchase a CAD interface.
- Bland County, Floyd County, Wythe County, and Twin County E-911 GIS datasets must be aggregated into one seamless GIS dataset to allow for use of the shared GeoLynx Server system. It will be the responsibility of King-Moore, Inc. to coalesce the data. In addition, the GeoLynx Server GIS setup will be built utilizing the regional dataset created by King-Moore. As such, the GIS Setup Service cost has been evenly distributed between Bland County, Floyd County, Wythe County, and Twin County E-911.
- Hardware meeting minimum specifications outlined by GeoComm is required for system functionality. Pricing does not include system hardware. Buyer is responsible for providing hardware. If buyer provides a dedicated web server with more than one quad core processor (four cores of processing), additional GeoLynx Server license fees will apply. Hardware specifications may be found beginning on page 10 of this document.
- System training will be provided to each individual participating entity at their respective locations.
- Fees, if applicable, from your CAD vendor are not included in the above pricing. CAD Vendor, database vendor, or buyer's onsite IT staff must either:
 - Make the necessary CAD database accessible to GeoComm by way of Microsoft SQL Server database or view within the CAD database. Or,
 - Provide GeoComm with an ODBC connection to the CAD database, including drivers, connection details, and credential
- The GIS Maintenance Utility is used for updating GIS data within GeoLynx Server, including cached services. Additional uses beyond this would require custom programming services, for a fee, and would be evaluated by GeoComm on a case-by-case basis.
- The proposed system does not have routing functionality. To achieve basic routing using local data in GeoLynx Server, an Esri Network Routing Dataset with one-way, speed, distance, and minutes attributes may be implemented. ArcGIS Network Analyst Extension for Desktop is required to create, edit, and maintain the routing dataset. GeoComm may provide pricing for the ArcGIS Network Analyst for Desktop and/or associated services to develop and maintain the dataset. Additional pricing may be provided for GeoComm to develop advanced routing attributes.
- In addition, the Network Analyst extension for GeoLynx Server is needed to make use of Roads GIS data for routing in GeoLynx Server.
- Software support and maintenance pricing is quoted for multiple years (up to five years). Pricing proposed for four additional years is valid if paid in full upon contract signing. Pricing will increase by five percent per year after the second year if services are not paid in full at contract signing.

Twin County E-911 Commission Price Detail

Twin County E-911 GeoLynx Server Dispatch Mapping: GSA Pricing

Description	GSA Price
Base Pricing	
GeoLynx Server GIS Setup Services	\$225.41
Active/Passive GeoLynx Server licenses (qty: 2 each, shared)	\$20,259.40
GeoLynx Server Dispatch Add-on Module (qty: 5)	\$19,575.00
Standard Dispatch CAD Interface	\$5,000.00*
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing in GeoLynx Server	Included
GeoLynx Server Dispatch Mapping System Installation	\$6,363.37
GeoLynx Server Dispatch Mapping System Training	\$6,621.50
Standard Dispatch CAD Interface Installation and Training Service	Included*
Project Management Services	\$7,364.80
GSA Base Pricing Total:	\$65,409.48
Extended Annual Pricing Total years 2-5	
Active/Passive shared GeoLynx Server licenses Year One Annual Software Support and Maintenance	\$4,284.46
GeoLynx Server Dispatch Add-on Module Year One Annual Software Support and Maintenance	\$3,623.55
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing Annual Year One Software Support and Maintenance	Included
Standard Dispatch CAD Interface Year One Annual Software Support and Maintenance	\$1,000.00*
GSA Annual Pricing Total:	\$8,908.01
GSA Year One Total:	\$74,317.49
Extended Annual Pricing Total years 2-5	
Active/Passive shared GeoLynx Server licenses	\$17,137.84
GeoLynx Server Dispatch Add-on Module	\$14,494.20
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing in GeoLynx Server	Included
Standard Dispatch CAD Interface	\$4,000.00*
GSA Extended Annual Pricing Total:	\$35,632.04
Twin County E-911 GSA Total, years 1-5:	\$109,949.53

Twin County E-911 Commission Pricing Notes:

- Bland County, Floyd County, Twin County E-911 Commission, and Wythe County will utilize a shared Metro Ethernet CPE & CAD network.
- Bland County, Twin County E-911 Commission, and Wythe County will utilize a shared active/active+passive/passive GeoLynx Server system. The system will consist of 2 active GeoLynx Server licenses and 2 passive GeoLynx Server licenses. The Floyd County GeoLynx Server system will reside on its own dedicated active/passive GeoLynx Server system.
- The passive GeoLynx Server licenses will provide redundancy in instances when the active servers are not available such as for routine maintenance and/or in the event the primary GeoLynx Servers are inoperable. The use of active and passive GeoLynx Server licenses simultaneously is not permitted.
- The GeoLynx Server base licensing costs is shared between Bland County, Twin County E-911, and Wythe County, while the dispatch mapping positions are priced based on each participating entity's dispatcher positions.
- Each participating entity is required to purchase a CAD interface.
- Bland County, Floyd County, Wythe County, and Twin County E-911 GIS datasets must be aggregated into one seamless GIS dataset to allow for use of the shared GeoLynx Server system. It will be the responsibility of King-Moore, Inc. to coalesce the data. In addition, the GeoLynx Server GIS setup will be built utilizing the regional dataset created by King-Moore. As such, the GIS Setup Service cost has been evenly distributed between Bland County, Floyd County, Wythe County, and Twin County E-911.
- Hardware meeting minimum specifications outlined by GeoComm is required for system functionality. Pricing does not include system hardware. Buyer is responsible for providing hardware. If buyer provides a dedicated web server with more than one quad core processor (four cores of processing), additional GeoLynx Server license fees will apply. Hardware specifications may be found beginning on page 10 of this document.
- Fees, if applicable, from your CAD vendor are not included in the above pricing. CAD Vendor, database vendor, or buyer's onsite IT staff must either:
 - Make the necessary CAD database accessible to GeoComm by way of Microsoft SQL Server database or view within the CAD database. Or,
 - Provide GeoComm with an ODBC connection to the CAD database, including drivers, connection details, and credential
- System training will be provided to each individual participating entity at their respective locations.
- The GIS Maintenance Utility is used for updating GIS data within GeoLynx Server, including cached services. Additional uses beyond this would require custom programming services, for a fee, and would be evaluated by GeoComm on a case-by-case basis.
- The proposed system does not have routing functionality. To achieve basic routing using local data in GeoLynx Server, an Esri Network Routing Dataset with one-way, speed, distance, and minutes attributes may be implemented. ArcGIS Network Analyst Extension for Desktop is required to create, edit, and maintain the routing dataset. GeoComm may provide pricing for the ArcGIS Network Analyst for Desktop and/or associated services to develop and maintain the dataset. Additional pricing may be provided for GeoComm to develop advanced routing attributes.
- In addition, the Network Analyst extension for GeoLynx Server is needed to make use of Roads GIS data for routing in GeoLynx Server.
- Software support and maintenance pricing is quoted for multiple years (up to five years). Pricing proposed for four additional years is valid if paid in full upon contract signing. Pricing will increase by five percent per year after the second year if services are not paid in full at contract signing.

Wythe County Price Detail

Wythe County GeoLynx Server Dispatch Mapping: GSA Pricing

Description	GSA Price
Base Pricing	
GeoLynx Server GIS Setup Services	\$225.41
Active/Passive GeoLynx Server licenses (qty: 2 each, shared)	\$20,259.40
GeoLynx Server Dispatch Add-on Module (qty: 6)	\$23,490.00
Standard Dispatch CAD Interface	\$5,000.00*
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing in GeoLynx Server	Included
GeoLynx Server Dispatch Mapping System Installation	\$6,363.37
GeoLynx Server Dispatch Mapping System Training	\$6,621.50
Standard Dispatch CAD Interface Installation and Training Service	Included*
Project Management Services	\$7,875.16
GSA Base Pricing Total:	\$69,834.84
Annual Pricing	
Active/Passive shared GeoLynx Server licenses Year One Annual Software Support and Maintenance	\$4,284.46
GeoLynx Server Dispatch Add-on Module Year One Annual Software Support and Maintenance	\$4,348.26
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing Annual Year One Software Support and Maintenance	Included
Standard Dispatch CAD Interface Year One Annual Software Support and Maintenance	\$1,000.00*
GSA Annual Pricing Total:	\$9,632.72
GSA Year One Total:	\$79,467.56
Extended Annual Pricing, Total years 2-5	
Active/Passive shared GeoLynx Server licenses	\$17,137.84
GeoLynx Server Dispatch Add-on Module	\$17,393.04
GIS Maintenance Utility & 9-1-1 Call and CAD Incident Viewing in GeoLynx Server	Included
Standard Dispatch CAD Interface	\$4,000.00*
GSA Extended Annual Pricing Total:	\$38,530.88
Wythe County GSA Total, years 1-5:	\$117,998.44

Wythe County Pricing Notes:

- Bland County, Floyd County, Twin County E-911 Commission, and Wythe County will utilize a shared Metro Ethernet CPE & CAD network.
- Bland County, Twin County E-911 Commission, and Wythe County will utilize a shared active/active+passive/passive GeoLynx Server system. The system will consist of 2 active GeoLynx Server licenses and 2 passive GeoLynx Server licenses. The Floyd County GeoLynx Server system will reside on its own dedicated active/passive GeoLynx Server system.
- The passive GeoLynx Server licenses will provide redundancy in instances when the active servers are not available such as for routine maintenance and/or in the event the primary GeoLynx Servers are inoperable. The use of active and passive GeoLynx Server licenses simultaneously is not permitted.
- The GeoLynx Server base licensing costs is shared between Bland County, Twin County E-911, and Wythe County, while the dispatch mapping positions are priced based on each participating entity's dispatcher positions.
- Each participating entity is required to purchase a CAD interface.
- Bland County, Floyd County, Wythe County, and Twin County E-911 GIS datasets must be aggregated into one seamless GIS dataset to allow for use of the shared GeoLynx Server system. It will be the responsibility of King-Moore, Inc. to coalesce the data. In addition, the GeoLynx Server GIS setup will be built utilizing the regional dataset created by King-Moore. As such, the GIS Setup Service cost has been evenly distributed between Bland County, Floyd County, Wythe County, and Twin County E-911.
- Hardware meeting minimum specifications outlined by GeoComm is required for system functionality. Pricing does not include system hardware. Buyer is responsible for providing hardware. If buyer provides a dedicated web server with more than one quad core processor (four cores of processing), additional GeoLynx Server license fees will apply. Hardware specifications may be found beginning on page 10 of this document.
- Fees, if applicable, from your CAD vendor are not included in the above pricing. CAD Vendor, database vendor, or buyer's onsite IT staff must either:
 - Make the necessary CAD database accessible to GeoComm by way of Microsoft SQL Server database or view within the CAD database. Or,
 - Provide GeoComm with an ODBC connection to the CAD database, including drivers, connection details, and credential
- System training will be provided to each individual participating entity at their respective locations.
- The GIS Maintenance Utility is used for updating GIS data within GeoLynx Server, including cached services. Additional uses beyond this would require custom programming services, for a fee, and would be evaluated by GeoComm on a case-by-case basis.
- The proposed system does not have routing functionality. To achieve basic routing using local data in GeoLynx Server, an Esri Network Routing Dataset with one-way, speed, distance, and minutes attributes may be implemented. ArcGIS Network Analyst Extension for Desktop is required to create, edit, and maintain the routing dataset. GeoComm may provide pricing for the ArcGIS Network Analyst for Desktop and/or associated services to develop and maintain the dataset. Additional pricing may be provided for GeoComm to develop advanced routing attributes.
- In addition, the Network Analyst extension for GeoLynx Server is needed to make use of Roads GIS data for routing in GeoLynx Server.
- Software support and maintenance pricing is quoted for multiple years (up to five years). Pricing proposed for four additional years is valid if paid in full upon contract signing. Pricing will increase by five percent per year after the second year if services are not paid in full at contract signing.

System and Network Specifications

GeoComm's proposes a shared, redundant GeoLynx Server System to the counties of Bland, Floyd, and Wythe, and the Twin County E-911 Commission. The system will be comprised of three host sites, located at Floyd County, Twin County E-911, and Wythe County. Each host site will utilize one large server for virtualization of the three systems. Each host site will have one active and one passive GeoLynx Server license, and one load balancer.

Sites which are not host sites, i.e. Bland County, Carroll County, and Grayson County, will need a basic server for processing any 9-1-1 call, CAD, or AVL information into the system.

System hardware must meet the following minimum requirements:

GeoLynx Server Host Servers

Element	Description
Base OS:	vSphere Standard 2CPU License
Client OS:	2x Windows Server 2012 R2 Standard
NIC:	4x Intel i350 NIC
RAM:	64 GB Dual Ranked UDIMM RAM (4x 16GB)
Processor:	2x Intel® Xeon® Processor E5-4620 (Or comparable SPEC rate and cores)
Hard Drive Controller:	RAID 5
Communications:	2x Serial Ports or 1x Serial to IP Devices at each ALL controller

Load Balancing Virtual Machine or Hardware Load Balancer

- Barracuda 440 or
- Citrix NetScaler VPX

CAD or AVL Interface Server

Element	Description
Base OS:	Windows 7 Professional (32-bit and 64-bit), Windows 8.1 Pro (64 bit), Windows 10 Enterprise (64 bit), Windows Server 2012 (64-bit), or Windows Server 2012 R2 (64 bit).
Processor:	Xeon or Dual Core
RAM:	4 GB
Hard Drive:	50 GB
NIC:	10/100 or better

Note: This system may be an existing server including the CAD Server or other existing server which is not a domain controller.

In addition, buyer is responsible for ensuring the following requirements are met:

- Provide an Internet connection with a minimum speed of 15 Mb/sec symmetrical to serve the GeoLynx Server website to external site users.
- Provide an Intranet connection with standard speed(s) of 10/100/1000 Base-T Mbps to serve the GeoLynx Server website to internal site users.
- If multi-agency, ensure all PSAPs are connected on a Wide Area Network (WAN).
- Make remote connections available on the provided system servers for on-going technical support of GeoLynx Server.
- Remote connections for initial software and data loading, configuration, and testing must be made available on the system servers or hardware. Alternatively, buyer may ship the hardware to GeoComm for loading, configuration, and testing.

GeoLynx Server Client Hardware Requirements

- Provide client workstations meeting the minimum requirements below. The workstation should be accessible 24/7. GeoComm applications cannot be installed on a primary domain controller or a backup domain controller.

System Component	Minimum	Recommended
CPU	2.2 GHz dual core or higher	2.5 GHz dual core or higher
RAM	2 GB RAM or more	4 GB RAM or more (3 GB RAM for XP only)
Display	17" monitor, 1024x768 or higher, 24- or 32-bit color depth	17" or 21" monitor, 1280x1024 or higher, 24- or 32-bit color depth
Video Card	32 MB integrated video card	512 MB discrete memory video card with OpenGL 2.0 support
Operating System	Vista Business & Ultimate (32 bit & 64 bit), or Windows 7 Pro, Enterprise, & Ultimate (32 bit & 64 bit), and Windows 10 Enterprise (64 bit)	
Web Browser	GeoLynx Server is fully tested and supported against Microsoft Internet Explorer 11. Browsers such as Mozilla Firefox and earlier versions of Internet Explorer and Google Chrome may be compatible but have not been tested. GeoLynx Server is not compatible with Google Chrome 45 and higher, and mobile (smartphone/tablet) browsers are not supported.	
Network Card	10/100 Mbps	1 Gbps
Remote Access	High-speed Internet connection 1.5Mbps	High-speed Internet connection 5 Mbps

Note: Some antivirus software can cause sporadic issues with the map fully rendering on the screen, which is observed by the user as blank squares. Please contact your system administrator for more information.

GeoLynx Server GIS Requirements

- Provide GIS data meeting GeoLynx Server map data specifications, including information regarding coordinate system/projection to enable 9-1-1 call plotting. GeoLynx Server required GIS data layers and descriptions of each are in the table below.

Layers	Description
Required Map Data Layers	
Roads Layer (polyline)	<p>Minimum attributes including: MSAG-valid road names, street ranges, and left and right Emergency Service Number (ESN).</p> <p>Road names in either a concatenated in a single field or parsed out.</p> <p>Important: Extra spaces and punctuation should be removed from all data fields.</p> <p>Important: <Null>'s must be removed from all data fields.</p> <p>Important: Road names must be in upper case letters.</p> <p>Important: Road name information in parsed fields must match comparable information in the concatenated field when both are present.</p> <p>Recommended that address ranges are broken down into four fields: Fromleft, Toleft, Fromright, Toright.</p> <p>The following routing attributes are required for network routing functionality:</p> <ul style="list-style-type: none"> ▪ Oneway (Text (2)) - Number of directions of traffic (FT or TF, N, any other alpha value(s)) ▪ Speed (Long Integer or Text) - Speed limit ▪ Distance (Double) - Length of each road segment (e.g. miles, kilometers, etc...) ▪ Minute (Double) - Estimated drive time in minutes based on segment length and assigned speed limit <p>Important: It is recommended that roads be broken at "true" intersections, boundaries, and emergency service zones. It is also recommended that each road segment does not exceed one mile in length</p>
Emergency Service Zones Layer (polygon)	<p>Minimum attributes must include emergency service number, fire responder, law responder, and medical responder broken into four fields.</p>
Political Boundaries Layer (polygon)	<p>Recommended that datasets with more than one jurisdiction have political boundaries all on one layer.</p> <p>Two separate fields are required. One attributed with community name and the other attributed with unique codes depicting individual jurisdictions for color rendering and setting zooming levels.</p>
Address Locator(s)	<p>Address locators define the process for finding address locations and map features based on a variety of different reference data, such as streets, parcels, address points, etc. At a minimum, a single address locator is required for plotting addresses or locations on a roads layer or other primary search layer.</p> <p>GeoComm recommends a refining zone be used with the selected address locator style but is not a requirement. For refining attributes, GeoComm recommends an ESN or MSAG-valid community name.</p> <p>GeoComm recommends the naming convention reflect if the address locator is for a point or polygon layer and whether or not a refining zone is included as an attribute.</p>
Other Map Data Layers	
Site/Structure Layer (Point or Polygon)	<p>The house number must be in its own field.</p> <p>The road name can be concatenated in a single field or parsed out.</p> <p>The road names should be capitalized and extra spaces should be removed.</p>
Label Layers	
Alternate Name	<p>In some cases, roads may be known by more than one name or a road name may have multiple spelling</p>

Layers	Description
Table	<p>variations. The alternate road name table enables the software to utilize multiple road names for the same segment of road.</p> <p>To account for these situations, an address locator style should be selected that supports alternative searches, such as US Streets with Zone and AltName or US One Address with AltName.</p> <p>When building an address locator for alternative name searches, we recommend following specifications as outlined by Esri. These specifications can be referenced in ArcGIS Desktop Help.</p>
Wireless Sector Layer (Polygon)	<p>To map wireless Phase I calls the following is required:</p> <ul style="list-style-type: none">▪ A wireless sector layer containing polygon features depicting the coverage area of the sector.▪ The layer file name must be called "cell_1" and include minimum fields such as unique id and wireless carrier information. It is required that attribute data be capitalized. <p>Note: The wireless mapping functionality can be implemented only after a wireless 9-1-1 network has been established by the wireless carriers and the PSAP is receiving Phase I wireless E9-1-1 calls.</p>
Place Name Alias Table	<p>A place name alias table is a table that contains place names and addresses. An address locator will use this table to search for a place name and then use the associated address to locate the location on the map. For example, in the software a user may search for a location by its name, such as Wrigley Field. When the user searches for Wrigley Field, the address locator will reference the alias table and look for Wrigley Field to determine the address 1060 W Addison St to locate on the map.</p> <p>When building an alias table, we recommend following specifications as outlined by Esri. These specifications can be referenced in ArcGIS Desktop Help.</p>

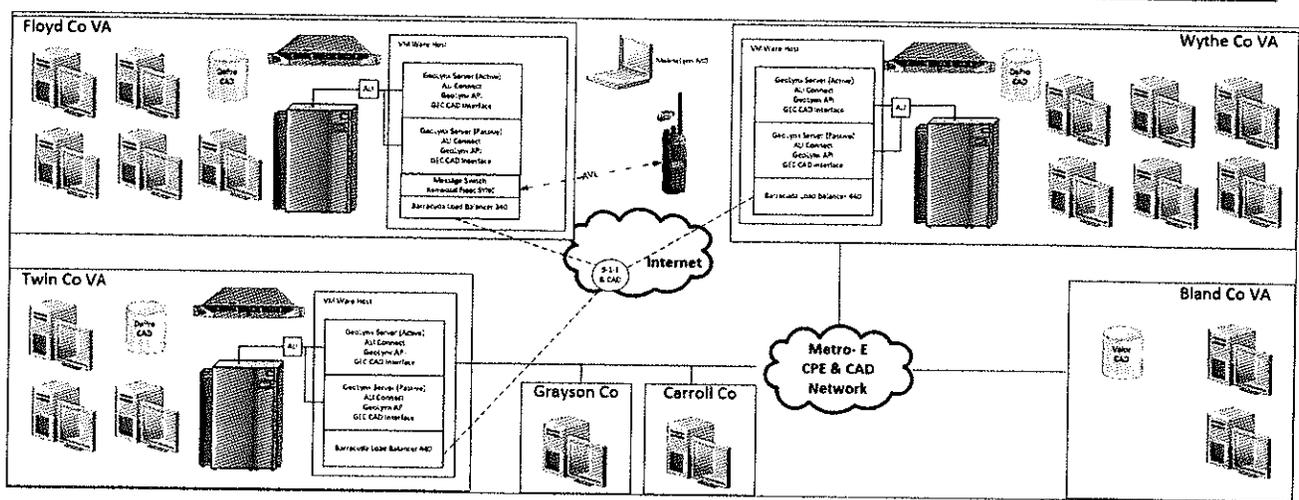
Notes: It is recommended the GIS data layers used for GeoLynx Server be contained in file geodatabase for best performance. However, GeoLynx Server also supports shapefile, ArcSDE geodatabase, and personal geodatabase formats from release 9.3 or higher.

At the time of software setup, GeoComm's GIS personnel will provide our detailed GIS map data specifications. These specifications will provide the layer-by-layer, detailed description and file structure requirements. Ultimately, the quality and availability of the map data provided will directly affect the functionality of the software.

The GIS data layers can be in any coordinate system or projection supported by the Esri projection engine (State Plane, UTM, etc.), as well as any geodetic datum. If a custom coordinate system is used, the .prj file will need to be supplied to GeoComm for review/verification of use within the GeoLynx Family of Products. It is recommended all map layers be in the same projection. However, the GeoLynx Family of Products does have the ability to display map data layers in different projections.

In addition to these GIS data layers, there is no set limit on the number of other GIS data layers that can be integrated into the map display setup.

System Diagram



"When seconds matter, we help save lives and protect property ..."