

The Virginia Geospatial Newsletter

Showcasing GIS, Remote Sensing and GPS Supported Products and Services in the Commonwealth

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The Virginia Geospatial Extension Program is a partnership between the Virginia Space Grant Consortium and Virginia Cooperative Extension

Metadata Creators Workshops Offered Across Virginia

By: John McGee
Virginia Geospatial Extension Specialist

commissions (PDC's) and state agency personnel. Workshop participation by non-profit organizations, federal employees, and private sector companies working in Virginia is also encouraged.

The Virginia Geospatial Extension Program, in partnership with James Wilson at Old Dominion University (ODU) is providing a circuit of free metadata training workshops at six locations across the Commonwealth during the summer of 2006. These workshops are funded by a 2006 CAP grant through the United States Geological Survey (USGS) and the Federal Geographic Data Committee (FGDC).

This project will facilitate Virginia's metadata development and coordination efforts, by providing "Metadata Creator Workshops". These workshops have several targeted audiences including: local governments, planning district

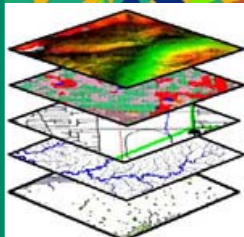
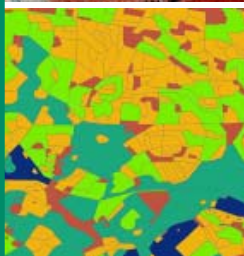
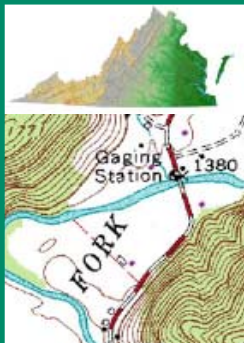
One-day Metadata Creator Workshops will be held at six locations across the Commonwealth:

- July 24th - **Harrisonburg, VA** (JMU)
- July 27th - **Richmond, VA** (VCU Center for Environmental Studies)
- July 28th - **Norfolk, VA** (ODU)
- August 9th - **Blacksburg, VA** (VT Center for Environmental Applications of Remote Sensing)
- August 15th - **Abingdon, VA** (Southwest VA Higher Edu. Center)
- August 16th - **Danville, VA** (Regional Center for Applied Technology [RCATT])

The metadata training workshop circuit builds upon a previous CAP project ("Documenting Local Government & Research Data in the Shenandoah Valley") that acquired 150 free seats for the ESRI Virtual Campus Course on creating metadata with ArcGIS. These seats will be distributed to targeted key personnel in every local government in Virginia. In addition, the workshop circuit builds on the efforts of the Virginia Geographic Information Network (VGIN) to develop a statewide

metadata clearinghouse.

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For more information contact:

The Virginia Geospatial Extension Program
(540) 231-2428
www.cnr.vt.edu/gep
jmcg@vt.edu

The Virginia Geospatial Newsletter is a quarterly publication developed through the Virginia Geospatial Extension Program, a partnership between the Virginia Space Grant Consortium (VSGC) and Virginia Cooperative Extension (VCE). The newsletter is published in conjunction with The Virginia Geographic Information Network (VGIN).

The purpose of the Virginia Geospatial Newsletter is to highlight innovative geospatial products and services throughout the commonwealth and to widely disseminate geospatial knowledge and awareness throughout Virginia.

If you have suggestions or comments, or if you would like to contribute to the newsletter, please contact John McGee at the Virginia Geospatial Extension Program (jmcg@vt.edu or [540] 231-2428).

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By:

George Willcox
State Specialist,
Technology Education Service
Virginia Department of Education

Virginia Takes the Lead in Bringing Spatial Thinking to the Classroom

The New Statewide ArcGIS License will Bring New Tools to Middle and High School Classrooms

Students in Virginia's middle and high schools will soon have the opportunity to use geographic information system (GIS) software and extensions. Virginia's statewide license for ESRI ArcGIS software in the classrooms will help teachers in a wide range of subjects create real-world experiences involving analysis and problem solving.

"There is a lot of excitement about this opportunity," says George Willcox, State Specialist of Technology Education for the Virginia Department of Education. "Some of the state's high school agricultural education, geographic, science and technology education teachers have already begun working with geospatial tools in several school divisions, and we will be running a set of regional week-long institutes this spring and summer to assist more teachers develop instructional strategies for implementing geospatial applications that enhance learning. GIS is a powerful technology. The software will assist students in developing critical skills that are needed in high growth, high demand and economically vital sectors of Virginia's economy."

The statewide license grants Virginia middle and high schools ArcView 3.x and ArcView 9.x on an unlimited number of computers. The software may be used for teaching any subject in grades 6-12. The Spatial Analyst and 3D Analyst extensions for both versions are also part of the statewide license as well as certain ESRI Virtual Campus courses.

Most Virginia community colleges and universities already use Geospatial technologies through the Virginia higher

education site license. The middle and high school statewide license expands GIS technology from grades 6 to 12 for use in a variety of basic subject matter to find solutions to real-world problems, similar to what the universities are already doing. More specifically, the software helps address content in the Virginia Standards of Learning and Career

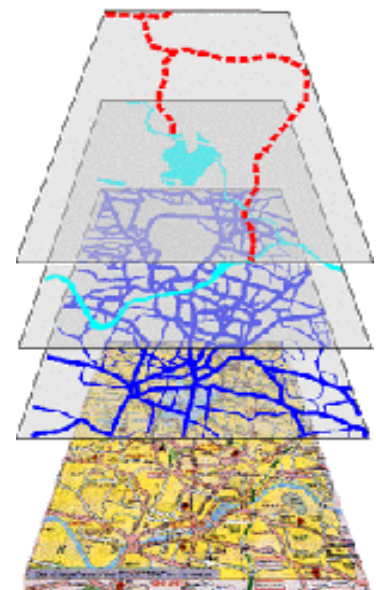
The statewide license grants Virginia middle and high schools ArcView 3.x and ArcView 9.x on an unlimited number of computers.

and Technical Education essential competencies.

"Schools today are challenged to be both rigorous and relevant up and down the line," says Charlie Fitzpatrick, ESRI K-12 education manager. "Students can use GIS to explore and analyze local, national, and global phenomena. Whether mapping hurricane evacuation plans, analyzing election tendencies across the country, or monitoring environmental conditions around the world, Virginia's students will be able to gain content background while developing critical thinking skills and building important career skills. GIS skills are being sought for an exploding number of jobs, and Virginia's students are now one step closer to being ready."

Bob Rike, the ESRI account representative for Virginia added that "Virginia is one of the only states to have renewable statewide ESRI site license agreements in place covering the entire range from middle school education through doctorate level research."

For additional information about Virginia's middle and high school Geospatial Instructional Applications Initiative, please read Superintendent's Information Memo # 87 at <http://www.pen.k12.va.us/VDOE/suptsmemos/2006/inf087.html> or contact George Willcox, technology education specialist, Office of Career and Technical Education, by e-mail at George.Willcox@doe.virginia.gov, or by phone at (804) 225-2839 or Eric Rhoades, science coordinator, Office of Middle and High School Instruction, by e-mail at eric.rhoades@doe.virginia.gov, or by phone at (804) 225-2676.



<http://www.wiu.edu>

Local Government

By:
Kevin R. Nelson
GIS Manager
Hanover County

Hanover County is located in the east-central Piedmont and Coastal Plain areas of Virginia, between the Chickahominy and Pamunkey Rivers. It is approximately 90 miles south of Washington, D.C. and 12 miles north of Richmond. It is part of the greater R i c h m o n d metropolitan area.



The County land area is 471 square miles and has a population of just over 97,000. Eighty percent of the County is planned for rural residential and agricultural uses, while 20% is planned for more intensive residential, commercial, and industrial development.

Hanover County's GIS program began in the early 1990's in conjunction with a street naming and numbering project necessary for implementation of the Enhanced 911 emergency response system. Typical GIS data layers were developed during this project, which was completed in 1995. At that point the County had produced digital planimetric data layers (buildings, roads, topography, etc.), tax parcels, street addresses, and street centerlines. Since 1995, the County has developed numerous other data layers, including zoning, water and sewer facilities and lines, historic and cultural resources, and flood plains.

From its inception, the GIS has been used by the County as a service oriented technology solution. Each year GIS staff respond to over 1,000 mapping and data support requests from a wide variety of County and State agencies and the general public. Hanover County has long realized the benefits of incorporating GIS into the scope of any project that has a geographic reference. Rather than limiting the potential of GIS technology by requiring the technology to be a potential revenue source, the County looks to GIS to enhance and expand the ability of County staff as

Hanover County GIS Program

they pursue projects in their area of responsibility that will position Hanover as a leader in Virginia.

Hanover's GIS is based on Environmental System Research Institutes (ESRI) ArcGIS software products. The County's GIS data is stored in an Enterprise Geodatabase using Sql as its relational database management system and ESRI's Spatial Database Engine (SDE) to manage the inter-relationship between the spatial and tabular GIS data. This SDE/Sql Enterprise Geodatabase serves as the foundation for the County's other management information systems. GIS attribute data is regularly passed to an AS/400-based Land Management System, which provides the basis for the County's building permit, utility billing, code enforcement, and plan of development systems. A custom mapping extension provides a link between these systems and GIS maps.

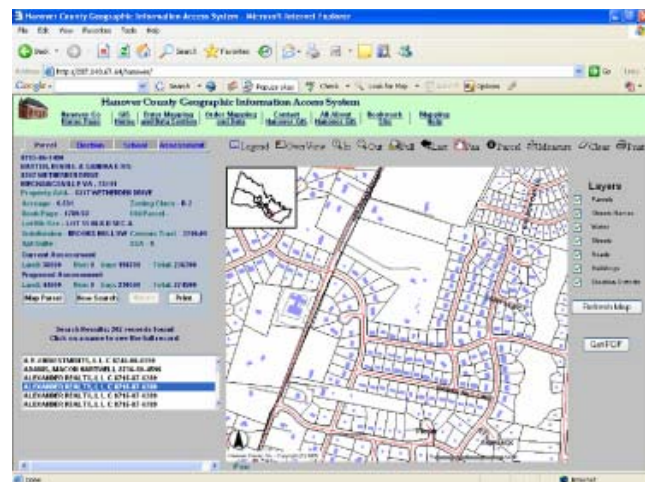
user-friendly environment. The main conduit for the public to access the County's GIS data is through a web-based application that links the County's GIS data to ownership and assessment data managed in other County management information systems. The web page can be viewed at <http://207.140.67.64/hanover>. This web page uses ArcIMS (ESRI's web data management/publishing software product). The web page receives approximately 60,000 parcel queries each month and processes over 600,000 transactions each month.

Perhaps the largest user of GIS data is the public safety divisions. The Sheriff's Office has incorporated GIS incident mapping into their strategic planning process that seeks to target criminal activity in specific areas of the County. In addition, GIS data and maps have been used to draft hazard mitigation plans and to identify and document critical sites for homeland security related programs. A custom mapping extension provides a link between the Computer Aided Dispatch system and GIS maps, which allow emergency service dispatchers to more accurately dispatch public safety personnel.

Other instances where GIS technology has been used in the County for the successful completion of a particular project include drafting the County's Comprehensive Plan, revising political districts,

revising school attendance zones, demographic related projects, identification of environmental resources, and to enhance economic development initiatives.

For additional information, please contact Kevin Nelson at (804) 365-6168 or at knelson@co.hanover.va.us.



Hanover County's Web-based GIS Application provides public access to ownership and assessment data

County GIS staff maintain street address, tax parcel, zoning, water and sewer, and street centerline data on a daily basis. The County compiles and prints many types of standard map products using this data, which are updated on a regular basis. These include tax maps, zoning maps, topographic maps, street address maps, and a County street wall map. County GIS users access GIS data through a custom ArcView software application, which allows for data queries and map compilation in an easy

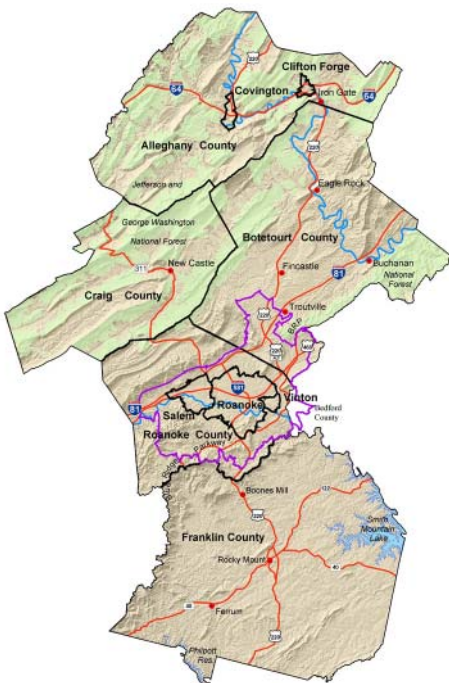


Planning District Commissions

By:

Matt Miller,
Director of Information Services
Roanoke Valley-Alleghany Regional
Commission

The Roanoke Valley-Alleghany Regional Commission (RVARC) has been utilizing computer cartography and a GIS for nearly 20 years. As one of the first planning districts in Virginia to adopt these technologies, the RVARC has also been a leader in promoting and supporting GIS activities through the Virginia Association of Planning District Commissions (VAPDC). Staff served as long time chair of the VAPDC Technology and GIS Committee



The RVARC service area

and the Regional Commission has hosted the Virginia GIS Conference in 1990, 1995, 2000, 2001, 2004 and 2006. The RVARC serves ten member local governments in the Roanoke Valley and Alleghany Highlands.

Like many agencies, the RVARC has used a variety of mapping systems over the years, but primarily uses ESRI products today. Early mapping projects focused on

GIS at the Roanoke Valley-Alleghany Regional Commission

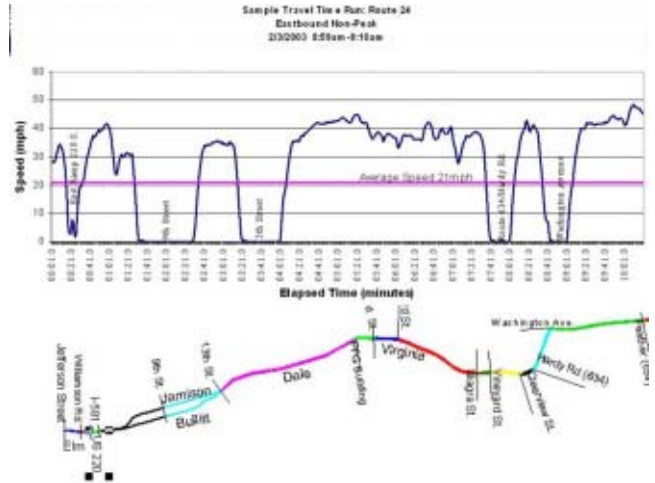
parcel digitizing for member governments, and producing land use and transportation maps. More recently the RVARC mapping activities rely on existing sources of data from federal, state and local agencies.

Most mapping projects are cartographic exercises and require no GIS analysis. However, there have been opportunities to delve deeper in the functionality of the GIS.

In 1995, the RVARC, then know as the Fifth Planning District Commission, used GIS to analyze open space resources in the Roanoke Valley. Using steep slopes, ridgelines, floodplains, threatened/endangered species, critical land parcels and viewsheds, staff created a composite map of valuable open space lands. Before local governments had formal regulations on cell tower site location, commission staff often performed viewshed analysis for proposed tower sites. Staff has also performed site analysis for community facilities and economic development prospects.

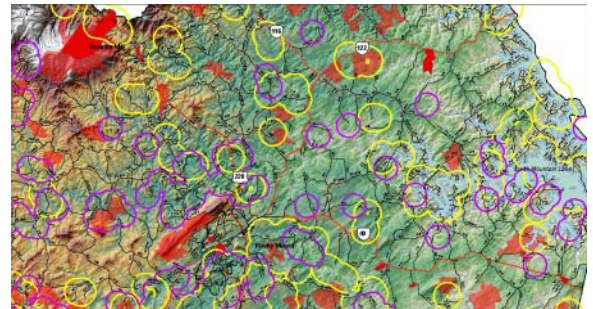
As a State Data Center Affiliate, the RVARC works closely with the US Census Bureau to update TIGER mapping and delineate changes in Census geography (magisterial districts, tracts, traffic analysis zones, etc.). After each decennial census, staff typically assists several member governments with precinct and voting redistricting.

More recently, the RVARC has supplemented its services by providing sub-meter GPS capabilities. The Trimble equipment has been loaned to member localities for data collection, and Commission staff also used the equipment for trail locations and corridor congestion



Route 24 Travel Time Study Graph-Speed and Distance

studies. The RVARC is currently working with a Radford University class to develop an application to calculate travel speed characteristics for road corridor segments. Travel time studies can be repeated periodically to measure changes in congestion.



GIS is supporting open space planning in Franklin County

Commission staff is currently working on an open space inventory for Franklin County. By using existing data, public input and simple overlays, the RVARC will be able to generate many mapping tools to assist county planners in protecting critical resources through both regulatory and voluntary means.

The RVARC has also recently completed a compilation of thoroughfare studies from

(Continued on Page 9)

By:

Kevin F Byrnes, AICP
Aging Demographer

Virginia Department for the Aging

In 1999, the Virginia Department for the Aging (VDA) added a staff position for an “Aging Demographer” to provide internal planning and policy analysis and research data support for the Department and its oversight Commonwealth Council on Aging, as well as to the local service network of 25 Area Agencies on Aging designated throughout the Commonwealth. The focus of this new staff position provided ample justification to develop a geographic information system (GIS) to manage a variety of information to portray the story of Virginia’s aging population in a manner most relevant to every policy maker, whether federal, state, regional or local.

GIS Description

The GIS software program selected for building the “Aging Geographical Information System (A-GIS)” was Maptitude™, a desktop GIS application developed and marketed by the Caliper Corporation. Maptitude™ was selected for several reasons, including:

- its low cost (relative to other desktop GIS programs),
- its supplied bundle of geographic and demographic data (at no additional cost),
- its flexibility to read and write data files compatible with a wide variety of GIS and database management programs (thereby facilitating data exchange with various outside agencies, regardless of which GIS or data management programs used),
- its versatility at geocoding addresses from a variety of formats and the native capability to read updated TIGER centerline files to build updated road layers with updated address and zip code centroid data from the Census Bureau on-going TIGER maintenance program,
- its capacity to manage very large database files (e.g. millions of records per file) and

A-GIS: A Tool for Assisting an Aging Population

- staff’s existing familiarity with the program, the program’s easy learning curve and helpful technical support team which helped expedite the development of the department’s GIS.

Once the program was acquired and installed, VDA staff set out to build a collection of geographic data layers which could be anticipated as useful to the human and social service planning and policy analysis functions of the department and technical assistance role to play in support of local agencies throughout the state.

Sample Planning and Policy Applications

One of the earliest demonstrations of the GIS came in 2002 by providing the new VDA Commissioner and the Commonwealth Council on Aging with a comparative profile of the total population (used for political redistricting) vs. the aged (60 & over) population for a wide array of political geographies, including congressional districts, state senate and house districts, cities, counties and planning districts and various state agency administrative geographies (e.g. social service regions, local health districts, etc). This “political atlas” of the aging population, developed by merging block-level population data from the 2000 Census with the census block polygon coverage for the state so that areal aggregations could be made from the smallest census reporting unit, helped policy makers quickly see the wide differences in the demographic composition of various geographies throughout the state.

Among the most critical initial map layers related to the aging population that continue to serve many internal and external needs were the locations of all state-licensed nursing home facilities, assisted living facilities, adult day care centers, continuing care retirement centers and community-based senior centers. Collectively these facilities represent a

large part of the infrastructure that cares for our Commonwealth’s senior population. In 2003, when the Virginia Department of Emergency Management (VDEM) was tasked with the development of Virginia’s National Pharmaceutical Stockpile plan, VDEM turned to VDA’s A-GIS data for assistance to locate these facilities, resulting in VDEM’s ability to incorporate appropriate plans for serving their special need populations after finding the relevant licensing authorities unable to supply the facility data in a relevant and user-friendly format for the time-sensitive stockpile plan.

In 2004, the General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to study the impact of the aging “BabyBoom” population on the provision and cost of state government operations. JLARC staff used maps produced from VDA’s A-GIS program to display the geographic distribution of various aging program services provided through the network of local agencies on aging throughout the Commonwealth.

Following several public awareness programs carried out in partnership with the Virginia Department of Motor Vehicles focusing on the senior driver population, in 2005 VDA was able to acquire an “abbreviated” version of the driver’s license file (stripped of personal identifier fields), which provided a rich database for identifying the locational patterns of Virginia’s driving population (of all ages) and an ability to identify interstate migration trends on a sub-jurisdictional level of older pre- and post retirement populations moving into Virginia. The resulting geocoded file of 5.4 million drivers has assisted some local governments, and their supporting regional agency on aging, identify senior populations for purposes

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Metadata Workshops

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Technical Approach

FGDC Metadata Creator workshops will fully comply with the FGDC's core curriculum and with the Virginia Metadata Standard. These workshops will be hands-on oriented, and will be conducted in university and community college computer labs. Workshop participants are encouraged to bring a geospatial data set with them (on CD or flashdrive). Instructors will work with participants to develop metadata for these geospatial datasets during the workshop. It is anticipated that these metadata files will then be submitted to VGIN's metadata server.



Registration

There is no cost to attend a Metadata training workshop. However, participants must register at least one week prior to the workshop using the online registration form. Workshop registration will be capped at approximately 20 - 25 registrants (contingent on facility capacity). It is anticipated that every workshop will reach capacity. **Interested individuals are therefore encouraged to register early.**

A limited number of travel stipends are available for each workshop. Local governments will receive preference for travel stipends. Box lunches are being provided by private sector sponsors (see Metadata Training Webpage for additional details). For additional information on registration, travel stipends, and box lunch sponsors, please see the Virginia Metadata Creators Webpage (<http://www.conted.vt.edu/usgsmt>).

Workshop Agenda

Workshops will integrate two main topic areas and will cover all of the material outlined on the *FGDC's Core Curriculum for Metadata Creators*. Morning sessions will be focused on the "broader aspects" of metadata and metadata structure.

Instruction will not be limited to, but will include the following topics:

- What is metadata?
- Why metadata is important to local / regional / state government entities (and other organizations);
- How metadata can be institutionalized throughout organizations;
- How to search for archived metadata (includes hands-on activity);
- How to interpret and "navigate" through a metadata file (includes hands-on activity);
- Examining specific FGDC metadata elements (and identifying information that should be associated with each

activity);

- Entering metadata records (includes hands-on activity);
- Exporting and submitting metadata that has been developed (i.e. through ArcCatalog, etc.) and stored locally to the Virginia Metadata Clearinghouse, or other metadata clearinghouse (includes hands-on activity).

By the end of the workshop, participants will not only understand what metadata is, and why it is important, but participants will learn how to efficiently compile and submit metadata to the Virginia Metadata Clearinghouse (if applicable), and search for metadata records (through the Virginia

Additional information and online registration about the Virginia Metadata Workshop circuit can be accessed through the Webpage <http://www.conted.vt.edu/usgsmt>

metadata element in order to generate quality metadata).

The afternoon session will focus on Virginia's approach to metadata. Instruction will not be limited to, but will include the following topics:

- The Virginia Minimum Metadata Standard (FGDC compliant);
- Accessing the Virginia Metadata Clearinghouse (includes hands-on

Metadata Clearinghouse and/or other NSDI node). Participants will also gain a full understanding of the importance of institutionalizing the creation of metadata in their respective organizations.

For additional information, please visit the Metadata Creators Workshop Webpage at: <http://www.conted.vt.edu/usgsmt>



Higher Education

By:
Lynn Davis
Communications Manager
Virginia Tech College of Natural
Resources

Beginning this fall, Virginia Tech will offer a one-of-a-kind Ph.D. program in geospatial and environmental analysis.

“This interdisciplinary doctoral program, based in the College of Natural Resources, is designed to meet one of the great challenges of the twenty-first century — the sustainable management and conservation of natural resources,” explained geography department head Larry Grossman.

Geospatial analysis involves the use of Geographic Information Systems (GIS), the Global Positioning System (GPS), remote sensing, and imagery analysis. “It provides a valuable framework to explore a broad range of contemporary natural resource and environmental issues related to forestry, fisheries, wildlife, human health, and population growth,” Grossman

New Doctorate Program in Geospatial and Environmental Analysis Offered

pointed out. “One of the benefits of geospatial research is that it is interdisciplinary in nature, enabling

Virginia Tech's new doctoral program in Geospatial and Environmental Analysis is the first interdisciplinary doctoral program in the U.S. to focus on the application of geospatial analysis to focus on natural resource issues.

students to incorporate a wide range of perspectives in their research.”

According to a recent report by the U.S. Department of Labor, geospatial technology is one of the three most

important emerging fields for the U.S. economy. “The new geospatial and environmental analysis Ph.D. program at Virginia Tech will be fulfilling a critical need in Virginia and the nation,” Grossman said.

The College of Natural Resources at Virginia Tech consistently ranks among the top five programs of its kind in the nation. Faculty members stress both the technical and human elements of natural resources and instill in students a sense of stewardship and land-use ethics. Areas of studies include environmental resource management, fisheries and wildlife sciences, forestry, geospatial and environmental analysis, natural resource recreation, urban forestry, wood science and forest products, geography, and international development.

For additional information on the program, contact Larry Grossman at (540) 231-5116 or lgrossman@vt.edu

What is Geospatial Metadata?

Metadata is more than just “data about data”. Metadata serves as a critical resource for organizations at all levels of government, and the private sector by providing vital information about the individual elements within a geospatial data set. This information is vital to protect the integrity of each geospatial data set. Geospatial metadata effectively serves as a documented record designed to protect the geospatial data investments of any organization. Metadata is an essential element to maintain the integrity of your organization's data investments.

In addition to protecting your organization's data investments, metadata provides internal users with information about your data assets. Since metadata is developed in a consistent format, it can easily be shared both within and outside an organization. Metadata provides essential information about geospatial information “at your fingertips”, and can therefore support the processing and interpretation of data that has been acquired from external organizations.

Geospatial metadata is organized in a consistent and standardized format. It is therefore used as a fundamental component in the development of geospatial data catalogues and clearinghouses. Metadata is often considered to be the backbone to internal data archives and spatial data clearinghouses.

Metadata supports many geospatial needs. It protects an organization's mission critical data investments. In addition, it provides information about the dataset that facilitates the appropriate and efficient use of the data both within an organization, and the sharing of data between organizations. Does your organization maintain updated, comprehensive geospatial metadata records? If not, is it worth the risk?

Getting Started: Selected Metadata Resources

Metadata in Plain Language: <http://geology.usgs.gov/tools/metadata/tools/doc/ctc/>

Institutionalize Metadata Before It Institutionalizes You: <http://www.fgdc.gov/metadata/metadata-publications/institutionalize-metadata>

The Business Case for Metadata: <http://www.fgdc.gov/metadata/metadata-business-case>

The VA Department of Aging

Continued from Page 5

of emergency contingency and evacuation planning. The same geocoded drivers license file has been helpful for other area agencies' on aging evaluation of current and future alternative congregate

population estimates and providing insight to how future population projections prepared by federal and state agencies may be affected by community growth patterns that diverge from historical trends that affected the current population projection series.

Conclusion

This short article can only provide a few examples of the many ways that GIS technology has supported the aging services network in Virginia. Notwithstanding the benefits of larger GIS

GIS at the RVARC

Continued from Page 4

the 1960's to the present. Proposed new terrain roads, expressways and extensions were mapped and compared to deficiencies in the current 4-step transportation model network. The results of the analysis are designed to help feed into the Roanoke



Thoroughfare Study: new terrain roadways proposed in past 30 years (red) and current model deficiencies (yellow)

Imagery © 2002 Commonwealth of Virginia

Valley Area MPO's long-range transportation planning process.

While many localities have their own GIS staff, the Regional Commission still provides technical support to many of the more urban governments. The training of other staff members at the RVARC has been critical in reducing the mapping and GIS workload of the primary GIS staff member at the Commission. The Commission now has four staff members trained in the use of ESRI software. For more information on the RVARC, please contact Matt Miller at 540-343-4417 or mmiller@rvarc.org

GIS Application Examples at the Virginia Department of Aging

1. Thematic mapping of geographic distribution of licensed senior care facilities
2. Service to AAAs with on-demand market estimation based on user-defined market radius
3. Geocoding of street address-based administrative records
4. Thematic mapping and spatial/market analysis of demographic trends in Virginia related to demand and supply of long-term care facilities and services

meal centers and central kitchen sites for "meals on wheels" programs.

As a comprehensive snapshot of a large percentage of the adult population in each community, the geocoded drivers' license file has been useful in evaluating the mid-decade accuracy of federally-prepared local

program operations elsewhere in State government, for VDA's small staff of 25, the modest investment in one desktop GIS system has had a significant impact on the public policy arena that affects older Virginians.



Save the Date!

Virginia Metadata Creators Workshops

- July 24th - **Harrisonburg, VA**
- July 27th - **Richmond, VA**
- July 28th - **Norfolk, VA**
- August 9th - **Blacksburg, VA**
- August 15th - **Abingdon, VA**
- August 16th - **Danville, VA**

Provided by the Virginia Geospatial Extension Program and ODU through a USGS/FGDC 2006 CAP Grant

Additional information & registration:

<http://www.conted.vt.edu/usgsmt>

GPS For Loggers and Foresters

June 29th, Harrisonburg, VA

Provided by the VCE Northwest District Office in partnership with the Geospatial Extension Program. Contact Matthew Yancey 540-564-3080 / yancey@vt.edu for registration and additional information

The ESRI Educational User Conference

August 5-8: San Diego

<http://www.esri.com/events/educ>

The ESRI International User Conference

August 7-11: - San Diego

<http://www.esri.com/events/uc>

The Virginia GIS Conference

October 23-24: Roanoke

<http://www.rvarc.org/vagis>



A GIS Primer for Rural Government Mangers

By:
Lyle Hornbaker
Local Government GIS Manager
VGIN

The use of Geographic Information Systems (GIS) in government has exploded over the last 15 years. Large jurisdictions often have fully implemented GIS systems and the personnel to use and maintain those services. Smaller towns and rural jurisdictions, however, are just now coming to the GIS party. It is for those types of organizations that this article will help the most. If you are considering building a GIS or if you have a fledgling GIS that needs to expand, please read on.

Establish the Role of the GIS in your Organization.

First and foremost, always view the GIS as a “value add” process. It is a tool and not an end product. This means that you should only consider implementing a GIS if you have a need that can be solved by using a well built mapping system.

So what types of needs can a GIS fill? A GIS can better illustrate many problems, mapping voters or potholes with equal ease. It can allow analysis of many different solutions quickly and easily. Many jurisdictions use a GIS when adjusting voting districts, examining 10 or 15 options instead of just two or three hardcopy maps. Another often overlooked benefit to a GIS is that it can help sell the final decision.

Those multiple options are compelling evidence the analysis is thorough. And don't forget that pretty maps never hurt the presentation!

Lastly, be realistic in your expectations. You must build a quality tool and put it in the hands of competent analysts in order to get meaningful information for decisions. It will not make those decisions on its own.

Building a Successful GIS

A GIS is really a tool in the hands of people. Start your system with finding the right people to fill two key roles.

First, find a Champion. Admiral Hyman Rickover, father of the US Navy Nuclear Submarine Corp once said, “Good ideas are not adopted automatically. They must be driven into practice with courageous patience.” Building a good GIS system is an expensive, long term commitment. An experienced, tech savvy but cautious leader must take the reins of the process and shepherd it along. Since you are reading this article, you may be the perfect person to fill this crucial role.

The second role that must be filled is that of competent users. I need to emphasize that a GIS is a tool and the value of tools is in the hands of the craftsman. A decision to implement a GIS must be made in concert with the decision to support it with the proper personnel. Remember, you are interested in the product produced, not in the tool itself.

Next, you need to make a plan and work that plan. Only a sound plan can produce a useful system. The plan should:

- Involve all the stakeholders. Don't build a solution looking for a problem.
- Be specific with program, data needs and an estimate of costs.
- Determine in-house or outsource. In-house systems offer flexibility and expandability but are the most expensive.
- Include a specific timeline. You can build the system piecemeal but never let it lay fallow.
- Be expandable. A GIS is never finished. Even with the best plans, you'll quickly find that the GIS is so versatile that you will always find new uses for a good system.

Lastly, realistically fund the system. Outsourcing is easiest when trying to determine costs because the contractor offers their services and programs for a set fee. In-house systems require hardware,

software and personnel costs. In-house or outsource, you'll find that the largest expense is the production of data.

Conclusion

The Virginia Geographic Information Network is committed to fostering the implementation and use of Geographic Information Systems throughout the Commonwealth. Our statewide orthophotography project provides a consistent data layer for local governments in Virginia. The road centerline project will create a statewide seamless road centerline project. Both of these projects can help to reduce the data overhead in your GIS. With a little bit of cautious planning, your GIS can be an invaluable informational tool.



Movin' On...

We wish you all the best!

Dan Widner, formally with the Virginia Department of Transportation (VDOT), is now on board with the Virginia Information Technologies Agency's (VITA) Integrated Services Program (ISP).

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The Virginia Geospatial Extension Program

319 Cheatham Hall (0324)
Blacksburg, VA 24061
(540) 231-2428
<http://www.cnr.vt.edu/gep>