The Virginia Geospatial Extension Program is a partnership between the Virginia Space Grant Consortium and Virginia Cooperative Extension
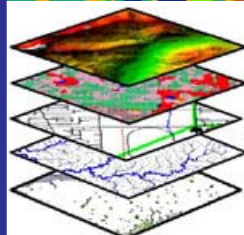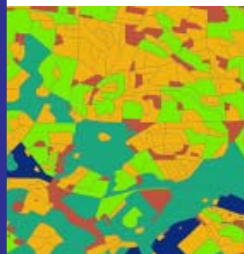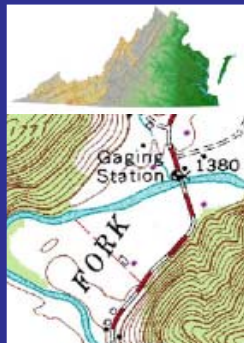
For more information contact:

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

U.S. Army Corps of Engineers Uses GIS to Improve FEMA's Flood Hazard Data and Maps for Virginia's Flood-Prone Communities

By:
Jason O'Neal
GIS Analyst
U.S. Army Corps of Engineers – Norfolk District

The Norfolk District of the U.S. Army Corps of Engineers has partnered with the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to produce FEMA's flood hazard maps, known as Flood Insurance Rate Maps (FIRM), since the National Flood Insurance Program (NFIP) began in 1968. As a FEMA mapping partner, the Army Corps of Engineers is using its Geographic Information Systems (GIS) capability to generate even more accurate, useful, and up-to-date flood hazard data and maps for Virginia's flood-prone

> *The DFIRM, in comparison with its paper predecessor, the FIRM, offers many enhancements familiar to GIS products.*

communities. As GIS technology evolves, so to have the solutions for identifying, communicating, and mitigating potential flood risks.

FEMA, which manages the NFIP, introduced its Flood Map Modernization program in 2003. This program has retired traditional paper map generation in favor of improved digital processes employing GIS. This new product is known as the Digital Flood Insurance Rate Map (DFIRM). The DFIRM, in comparison with its paper predecessor, the FIRM, offers many enhancements familiar to GIS products. The digital format enables greater accuracy and consistency, faster updates, easier

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).

What's Inside

West Piedmont Planning District Commission's GIS Applications

With a population of approximately 250,000, the West Piedmont Planning District lies along the Virginia-North Carolina border serving the Counties of Franklin, Henry, Patrick, and Pittsylvania; the Cities of Danville and Martinsville; and the Town of Rocky Mount located within Franklin County. The Planning District Commission (PDC) provides many services to the member local governments, one being GIS and mapping assistance to local, state, and federal agencies. Assisting in local and regional issues regarding Transportation, Economic Development, Environmental Planning, Hazard Mitigation Planning, and Census demographics as a State Designated Affiliate Data Center to name a few, the PDC serves its localities in a broad range of projects and activities.

Transportation
The PDC staff just completed Phase I of four phases of the Regional Rural Long-Range Transportation Plan in conjunction with the staff at the Virginia Department of Transportation (VDOT). Phase I of the Plan entailed a gathering of inventory and demographic data. While the PDC contains the Danville Metropolitan Planning Organization's urbanized area, the majority of the Planning District is considered rural and many maps had to be prepared for the Plan. The maps consisted of the following categories: *Transportation* items such as VDOT's Six-Year Highway Improvement Plans, major freight generators, and existing bicycle and pedestrian accommodations; *Land*

Use information such as growth centers for residential, commercial, and industrial development, water and sewer infrastructure; and *Socio-Economic* data such as population growth and disadvantaged groups (elderly population, low-income, disabled, etc.).

In compiling the *freight generator maps*, the land use layers were overlain with the locations of businesses and industries that generate freight selected by certain North American Industry Classification System (NAICS) codes. Various local and state lists of business and industry employers were utilized in compiling and then updating the information to generate a list of firms and their locations to be placed on the local area maps. By overlaying this information with the land use layers, it aids in showing exactly where

the commercial and industrial activities are located as seen in the example map of Martinsville.

Martinsville Freight Generators
In addition, *growth centers* were mapped using 2000 Census population density to reflect population concentrations for residential growth and commercial and industrial centers
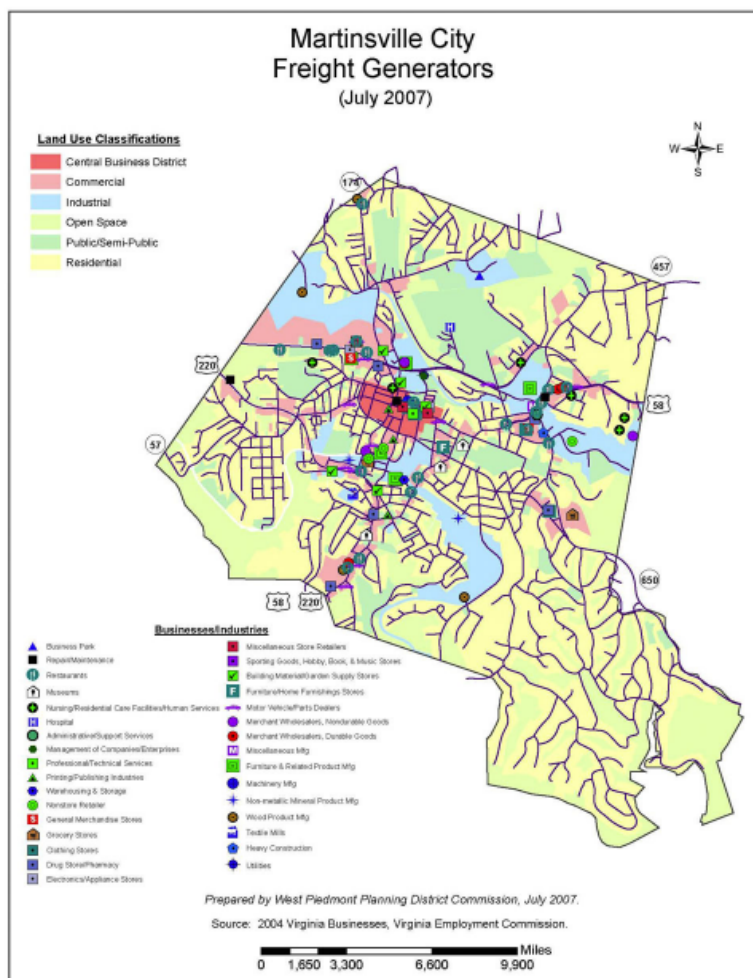
Martinsvillle City Freight Generators

Free Geospatial Training for VCCS Faculty Through iGETT: Call for Participation

The Integrated Geospatial Education Technology and Training (iGETT) project offers two-year college faculty professional development opportunities that will enhance existing Geographic Information Systems (GIS) programs by integrating remote sensing and Global Positioning System (GPS) data in ways that support workforce needs. iGETT focuses on moderate-resolution (30 m, 250 m), readily available federal land remote sensing data, such as that

selected topic, and implement recruiting and community outreach activities that support their instructional programs. The bank of Learning Units, along with all Summer Institute training materials, will be available on the iGETT web site to the participants and all other interested faculty. A major project goal is to provide resources that will facilitate course enhancement and program development not only at the participating institutions, but also at other institutions across the country.

associations, to explore ways in which two-year colleges can meet geospatial workforce needs. iGETT is based on the outcomes of that workshop. Faculty interested in submitting an application will benefit from reviewing the workshop report, *Integrating GIS and Remote Sensing for Technical Workforce Training at Two-Year Colleges* at http://ncge.org/publications/gew.

Who may apply; what college resources and support are required?
Faculty who currently teach GIS at two-year colleges located in the United States are eligible to participate in iGETT. They are encouraged (but not required) to apply in teams of two. Co-applicants may work at the same institution or at different institutions that collaborate or intend to do so. One applicant must come from a two-year college; partners may come from other two-year colleges, affiliated high schools, or four-year colleges/universities that have or plan to develop articulation agreements.

Each applicant must submit an application form and a letter from a department chair or college administrator, agreeing to cover transportation costs to the two Summer Institutes and to support program innovations based on iGETT participation. All applicants must have access to computer laboratories that

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APPLICATIONS ARE DUE BY:
FEBRUARY 15, 2008

Letters of acceptance/non-acceptance will be mailed by March 15, 2008.

Apply on line at http://igett.delmar.edu
or download and send the application form and support letter(s) as e-mail attachments to brand.ncge@verizon.net

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from Landsat, MODIS, and ASTER sensors. Topical applications include: forestry, agriculture, disaster management, natural resources management, and urban planning.

iGETT supports forty participants in two cohorts (July, 2007 - June, 2009 and June, 2008 - May, 2010). All attend two Summer Institutes, take an on-line remote sensing course, develop one or more Learning Units on a

The project is the result of a multi-year collaboration by the National Council for Geographic Education; Del Mar College; ESRI (Environmental Systems Research Institute); Science Systems and Applications, Inc. at NASA Goddard Space Flight Center; and the U.S. Geological Survey Land Remote Sensing Program. The organizations held a workshop in 2005, supported in part by the National Science Foundation (NSF) and attended by representatives from academia, industry, government, and professional

VGIN 2002 Aerial Photography is Now Available On-Line Through Radford's Geoserver Project

by:
Jay Flynn
System Administrator/Instructor
Radford University

The Geoserver project at Radford University makes available the state-wide aerial photography flown in 2002 by the Virginia Geographic Information Network. This photography covers the commonwealth at scales of 1:100, 1:200, and 1:400. Special thanks are due to Dan Widner, Coordinator of the Virginia Geographic Information Network, for providing the appropriate copyright information that is attached to each photo. The photos were first made available in October and have already become a popular download.

The photos may be downloaded from Radford University's spatial data web site at http://www.radford.edu/geoserve. The main web page has a link to a server that runs ESRI's ArcIMS Internet mapping software. Here users may view many layers including county and city boundaries, major roads and rivers, as well as local roads (if you zoom in close enough). And here you may view index maps for seven layers that allow you to download files. There are six indexes for the VGIN photos, three that cover the northern half of Virginia and three the southern half. All photos use the state plane coordinate system; photos in the north are in the "north" zone and photos in the south use the "south" zone designation. There is a seventh index layer that is a 1:24,000 US Geological

Survey index map. This index map gives access to a pop-up window that lets users download digital ortho quarter quad photography taken in 1995. Users may also download USGS DRGs (digital raster graphic) topographic maps and digital elevation maps (DEM).

100, 200 and 400 scale 2002 VBMP Imagery is now accessible to the public through Radford University

To help those using the web site may find ArcIMS difficult to use, I have created a view videos that demonstrate how to use the software to download files. These videos are available through links on the web site. A recently added capability to the ArcIMS site is the ability to enter a street address and have that highlighted on the map of Virginia. This provides a quick and easy way to find which photograph covers your area of interest. A video will soon be available that demonstrates how to use this address locator feature.

The Geoserve web site now has over 29,000 files available for free download to the public. The project itself began in 1999 with the purchase of DRGs covering Virginia and the surrounding states of North Carolina, West Virginia, Maryland, and parts of Tennessee, and Delaware. With the initial help that first year of a graduate student in geology, the web site has progressed to be a portal of free spatial data. Users include researchers at universities, planning districts and local governments, engineering firms, and even the federal government. Many download files for recreational purposes like hiking and camping.

As always, please use the VGIN photos and all of the photos and maps "as is." Neither Radford University nor the Commonwealth of Virginia assume any responsibility as to the accuracy of the data or its future use. That said, feel free to download any of the files we have available and let us know how you use them. A great future addition to the web site might include ways you, the spatial data community, have come up with to use the data.

For further information, contact Jay Flynn at jflynn@radford.edu

The National Hydrography Dataset (NHD)

by: Diane Eldridge
USGS Geospatial Liaison for the
Commonwealth of Virginia

U.S. Geological Survey Director Mark Myers announced the completion of nationwide coverage of the high resolution National Hydrography Dataset (NHD) at a ceremony at USGS headquarters in Reston, Virginia, on August 9, 2007. Director Mark Myers addressed the audience at the ceremony expressing an "appreciation for the grass roots effort it took to produce the NHD" and noted the "persistence of scientists, resource managers, and regulators who saw a need for such a dataset at a national scale."

What is the NHD?

The National Hydrography Dataset (NHD) is an applications-ready, surface water database. The NHD is a comprehensive set of digital spatial data that contains information about surface water features such as lakes, ponds, streams, rivers, springs and wells. Within the NHD, surface water features are combined to form "reaches," which provide the framework for linking water-related data to the NHD surface water drainage network. These linkages enable the analysis and display of these water-related data in upstream and downstream order. Users can download data from the NHD website (http://nhd.usgs.gov) as an ArcGIS personal geodatabase (pgdb) or as a shapefile and begin applying it immediately. Users can make maps, geocode observations, and model the flow of waterways.

- **Make Maps.** Positional and descriptive data (FCodes) in the NHD provide the starting point for making many different kinds of maps.
- **Geocode observations.** Much like street addresses link data to a road network, the NHD's "reach code" provides a way to link data to water features.
- **Model flow along the Nation's waterways**. Information about flow direction, combined with other data, can help users model the transport of materials in hydrographic networks, and many similar applications.

Expansion and Maintenance of the NHD

The NHD was designed and substantially built by three Federal partners: USGS, EPA and the USDA Forest Service. It was designed to be a reliable source of data that would grow both through system-wide revisions and the contributions of its users. While the Federal agencies generally represent a national perspective, thousands of other State and local users have used the NHD to record and analyze waterways in their areas. The data they have developed as users is then fed back to grow and refine the NHD as a whole.

This symbiotic relationship between the original developers of the NHD and the subsequent user/contributors can be compared with the franchise model in business.

Franchising is a way to pool resources and capabilities. A franchisor establishes a company and contributes the initial investment, know-how and experience. The franchisees contribute supplementary investment, motivated

> **The USGS will be hosting two <u>free</u> NHD Applications Workshops in March of 2008:**
>
> **March 5th**
> **Virginia Tech Richmond Center**
> **Richmond, VA**
>
> **March 6th**
> **USGS National Headquarters**
> **Reston, VA**

effort, and operating experience that relates to their specific markets. Through their interdependent relationship, both partners can grow, as does the franchise itself.

USGS, EPA and the Forest Service invested in the initial development of the NHD, bringing their combined expertise and resources to the task. Potential state and local partners are motivated by their own specific needs and uses for the data, and contribute their understanding of their own service areas. NHD's "franchise"approach allows common tools and applications to be shared by a variety of users to meet their own interests while growing the NHD at the national level.

FEMA Flood Mapping in Virginia

data distribution, and facilitates multiple uses of the data. A community's DFIRM dataset may contain as many as 30 layers of flood hazard information. All flood data is created in a standard format and is stored in a national geodatabase. FEMA can now fully evaluate its flood hazard data and maps from the national perspective and identify areas requiring further updating.

Map modernization benefits the whole community. Community planners and local officials get a better understanding of their community's flood hazard risks. Builders and developers can make better decisions on where to build and how their construction impacts flood hazards. Insurance agents and companies, real estate agents and companies, as well as lending institutions are more knowledgeable when dealing with customers. Homeowners and business owners can make informed decisions about their current flood risks. Everyone will have easier access to future flood map and flood data updates and changes.

A successful Map Modernization project requires collaboration between FEMA, the Army Corps of Engineers, state and local governments, the private sector, and the community. A typical project team consists of GIS analysts, hydraulic and hydrologic engineers, surveyors, floodplain managers,
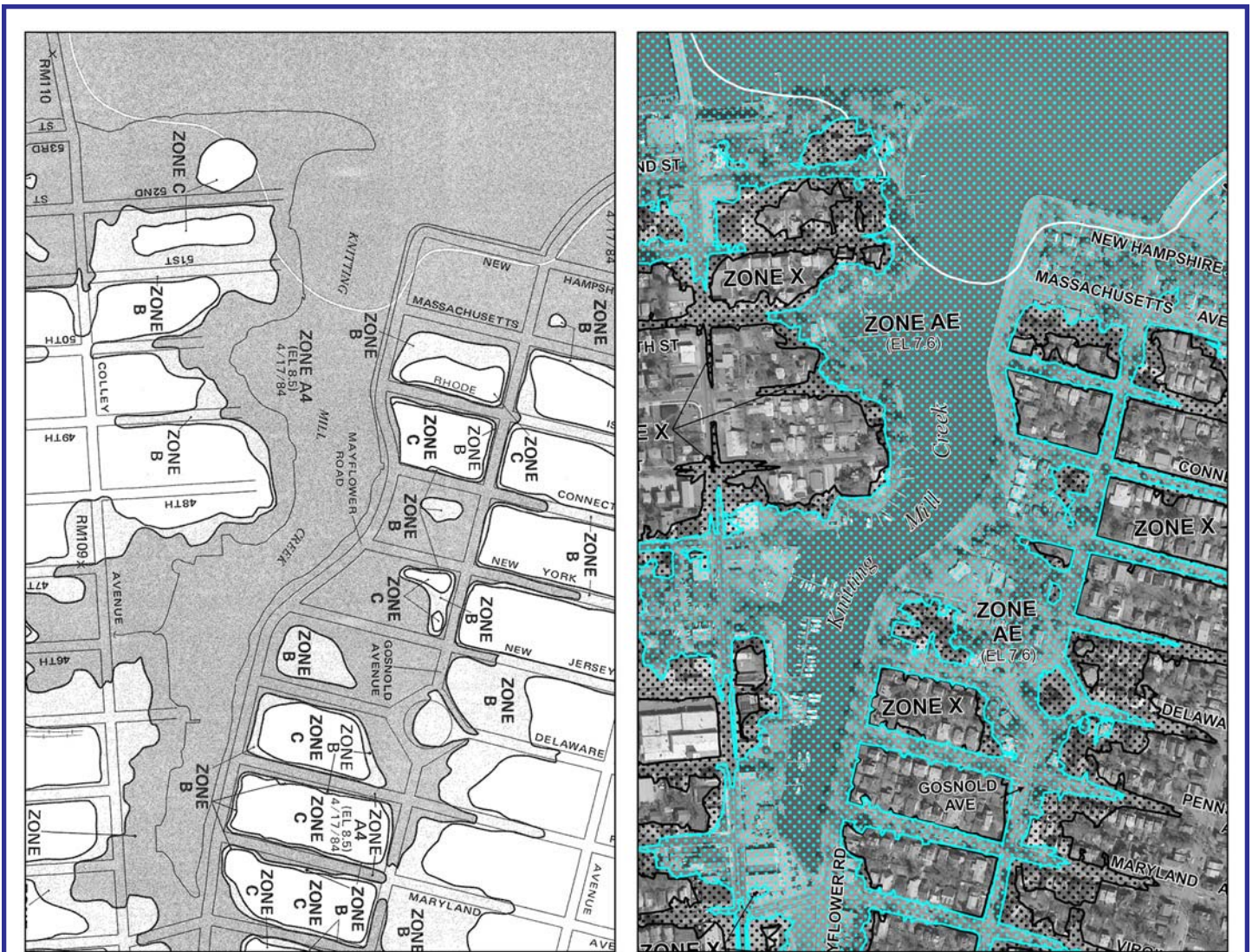
Figure 1: Side-by-side comparison of current FIRM, Flood Insurance Rate Map (left) and preliminary DFIRM, Digital Flood Insurance Rate Map (right) for an area in the City of Norfolk.

West Piedmont PDC

using land use and, where applicable, designated enterprise zones within the region. The map shown represents Franklin County with its growth areas centered around the Town of Rocky Mount and heading north along U.S. Highway 220 into the Town of Boones Mill, along the Smith Mountain Lake area of the County, and along State Highway 40 west to the Ferrum College community.

Metropolitan Planning Organization

The West Piedmont Planning District Commission serves as administrative agent for the Danville-Pittsylvania County Metropolitan Planning Organization (MPO). Working with VDOT, the PDC staff is currently reviewing freight data for the MPO to show trip generations. The agency also works with consultants conducting various corridor studies for the MPO. The PDC assists with Long-Range Transportation Plan updates and amendments including the mapping of project locations and their distribution.

Cartographic Street Maps

Cartography also plays a part of the PDC role in mapping. Recently, the Planning District staff completed an update and revision of the Patrick County street map. The PDC has a set of copyrighted street maps for most of the jurisdictions. Using the E-911 network as a base map, streets are formatted with double-lines, checked for accuracy, and labeled with both street names and route numbers, where appropriate. Public facilities such as parks and schools are added

to the maps as well as many other points of interest. Local government agencies and visitors to the area have given positive feedback calling the PDC maps "some of the most accurate and detailed maps" and "some of the best maps in the Commonwealth." The street maps are distributed through the local governments and Chambers of Commerce who fund the printing costs.

Economic Development

West Piedmont Planning District Commission provides mapping assistance to local Economic Development agencies in order to assist in the promotion of tourism and other economic development issues. The staff developed a regional tourism map showing the locations of major attractions in the region. Maps have been prepared for individual localities as well.

Comprehensive Plans

A portion of the services provided to local governments includes Comprehensive Plan updates.

Currently, the PDC staff is working on Plans for two localities with a third recently completed. Mapping for the Comprehensive Plans includes items such as flood plains, water and sewer infrastructure, soils and slope, existing and future land use to name some.

Historic Preservation

In conjunction with the National Trust for Historic Preservation, mapping assistance has been provided to represent historic sites and districts within the region. Driving tour maps have also been developed by the PDC to assist local Historic Societies in promoting historic attractions.

Census Information

As one of the State's Designated Affiliate Data Center, West Piedmont works cooperatively with agencies such as the Census Bureau and the Virginia Employment Commission to disseminate federal, state, and local demographics. The PDC staff is gearing up for the upcoming Census in 2010. Preparations are already

Franklin County High Growth Areas
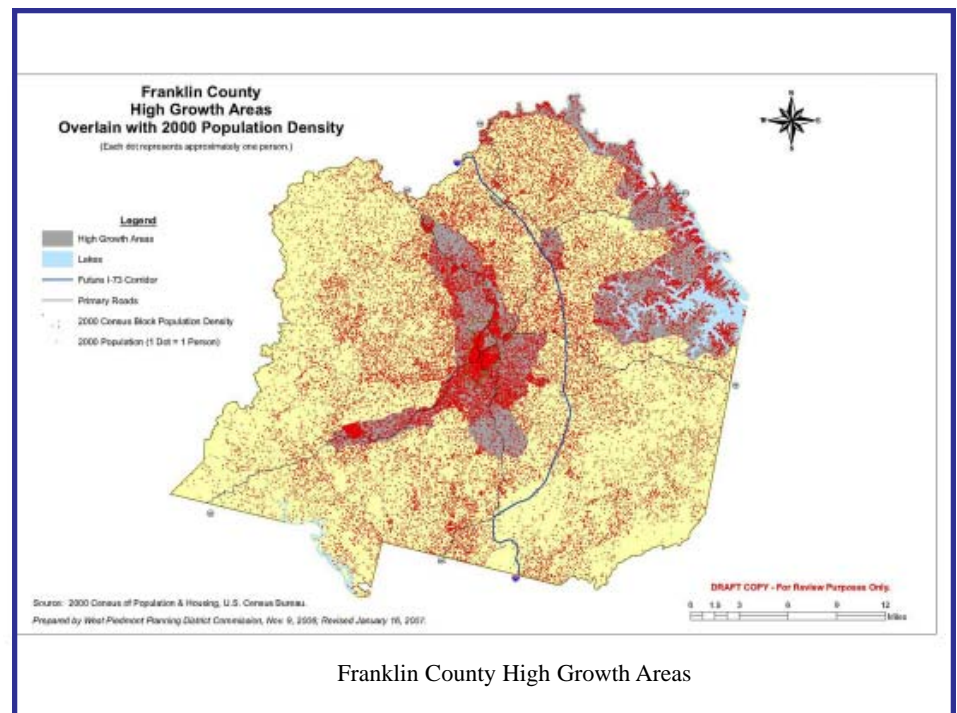
iGETT: Call for Participation

can support GIS and remote sensing instruction. Labs should have at least 15 computers (fewer at high schools) with existing capacity to run ArcGIS and extensions as well as remote sensing analysis software. (See http://www.esri.com/software/arcgis/arcview/about/sys-reqs.html for minimum specifications.) Note that large raster data sets and remote sensing data require sizable RAM and Graphics Card memory.

iGETT will offer each participant:

• a short online GIS review course and an introduction to remote sensing to be completed prior to the first Summer Institute. (Participants may opt to test out of the GIS course if they have recent experience teaching ArcGIS 9.1 or later versions.)

• two Summer Institutes (at Del Mar College, Corpus Christi, TX) that focus on remote sensing (remote sensing basics, data resource information, image processing techniques, and vector manipulation methods); integration of GIS and remote sensing; and related GPS applications. A one day field trip will be required to collect GPS data to ground truth land remote sensing data. The Institutes will also address program development issues such as attracting both traditional students and members of the workforce who need additional training, overcoming obstacles to program modifications, and developing partnerships with industries and government agencies.

• housing at a local hotel (two persons per two-bedroom/two-bathroom suite) and meals during Summer Institutes.

• one on-line remote sensing course from the University of Mississippi, Institute for Advanced Education in Geospatial Sciences. Participants may select among several courses listed at http://geoworkforce.olemiss.edu/.

• mentoring and technical support (by e-mail, telephone, and web-conferencing) from project staff and advisors as the participants develop course modules and/or new courses and outreach initiatives; assistance identifying and downloading federal land remote sensing data and images.

• software through May 2010: 25-seat laboratory licenses for ArcGIS, ArcInfo, Spatial and 3D Analysis extensions, Leica Image Analyst extension, and ENVI.

• a Garmin 76S GPS receiver.

• stipends, with payments based on faculty deliverables and full participation in both Summer Institutes. Participants will receive $75/day during the two Summer Institutes and $750 during the intervening academic year, for a total of $1,950.

• reimbursement of up to $500 for regional travel to disseminate information about program innovations, recruit students, develop relationships with industry and government agencies, etc. In addition, all participants may compete for six travel awards of up to $1,300 to make presentations about their program innovations at national professional meetings.

Applications are now available for 2008-10 participation in the Integrated Geospatial Education and Technology Training (iGETT) project. iGETT was funded by the National Science Foundation to help two-year college faculty enhance existing GIS programs by integrating remote sensing and GPS data in ways that support workforce needs.

Participants will attend a two-week institute from June 15 to 28, 2008 and a one-week institute in June, 2009, both in Corpus Christi, Texas. The institutes will focus on concepts of remote sensing, data access, hands-on use of ENVI and Image Analysis software, and geospatial program development. Participants will also take an on-line one-semester remote sensing course and create Learning Units that integrate remote sensing and GIS. They will receive stipends, software, GPS units, and mentoring during the project. For more information and an on-line application, see http://igett.delmar.edu/. If you have difficulty accessing the website, please contact Ann Johnson (ajohnson@esri.com) or Osa Brand (brand.ncge@verizon.net).

NHD Workshops Offered in Virginia

National Hydrography Dataset (Hands-On) Applications Workshops
The USGS will be hosting two free NHD Applications Workshops in March of 2008:

March 5
Virginia Tech Richmond Center
Richmond, VA

March 6
USGS National Headquarters
Reston, VA

Jeff Simley, the USGS National NHD Program Manager will be traveling to Virginia to present the workshops. Jeff works out of the USGS Denver, Co office. The NHD Applications workshop provides all of the basic information a user needs to exploit the power of the NHD. The NHD was carefully designed for scientific applications and consists of many attributes and characteristics perfectly suited for geographic analysis using GIS, however, the data was designed to be simple enough for anyone to use, not just highly skilled GIS specialists. Thanks to this design, powerful applications can be developed with just one day's training. The class begins by looking at how others around the country are using the NHD; however some time will be dedicated specifically to looking at data within Virginia. The NHD data structure will be explored and applied to basic mapping techniques. The data structure will be further explored to reveal new possibilities for network analysis. The ability to navigate throughout the stream network will be covered, opening up new approaches for conducting GIS. The important process of linking scientific data to the stream network is covered. These techniques, combined with network navigation, lead to cause and effect analysis allowing the scientist to discover how one event in the environment can impact another event. The importance of data change management, the added power of NHDPlus, and the role of ArcHydro are also covered.

The USGS acknowledges and greatly appreciates the support and assistance of the Virginia Geospatial Extension office and the Virginia Geographic Information Network (VGIN) in promoting these workshops. Although the workshops will be presented free-of charge, pre-registration is required. On-line registration is available through the Virginia Geospatial Extension Program Website:
http://www.cnr.vt.edu/gep/nhd_workshop.html

For additional information or just to chat feel free to contact:

Diane Eldridge
USGS Geospatial Liaison to Virginia
(703) 648-4521
deldridge@usgs.gov

The NHD information presented in this article as well as a wealth of additional information is available through the NHD website: http://nhd.usgs.gov .
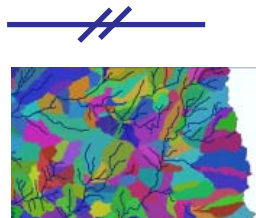
West Piedmont PDC

underway with the LUCA (Local Update of Census Addresses) Program in assisting local government members and the U.S. Census Bureau's Charlotte Geography Division with the updates. In addition, Census geography such as block groups and tracts must be reviewed to ensure that it complies with revised Census regulations and criteria in regards to boundaries and population. The PDC will be involved in revising any necessary changes. During the last Census (2000) preparation, West Piedmont Planning District Commission was instrumental in developing several new Census Designated Places (CDPs) for three of the member counties. CDPs provide detailed information for a particular designated community such as towns or other densely populated areas or clusters within a jurisdiction.

Following the release of the 2000 Census population data, the PDC staff assisted several localities with the 2001 redistricting process. Special GIS software applications through ESRI were utilized to assist in tabulating population totals and racial distribution by magisterial or voting districts and precincts.

Further information regarding the West Piedmont Planning District Commission can be found online at http://www.wppdc.org or by contacting the staff by email at staff@wppdc.org or by phone at 276-638-3987.

FEMA Flood Mapping in Virginia

community officials, homeowners, and business owners. Furthermore, this work could not be accomplished without the support of the individual localities. The Army Corps of Engineers does not maintain GIS data for localities; each locality is contacted to provide up-to-date data for analysis and mapping. If a locality has recent digital topographic data available, the floodplain boundaries are redelineated based on that data. If current digital topographic data is not available, the floodplains are digitized as shown on the current effective FIRM. With either method, this data will now be available in a GIS format and will include many enhancements not available in the previous maps.

The Army Corps of Engineers performs many different GIS tasks while producing a DFIRM. These include:

- Georeferencing current effective FIRMs and digitizing information from those maps;
- Adding base data, such as location of roads, hydrographic features, and jurisdictional boundaries;
- Collecting and reviewing digital topographic contours and spot elevations; collecting and manipulating digital orthophotography

- Generating Triangular Irregular Network (TIN) models and Digital Elevation Models (DEM), then using those models to redelineate new floodplain boundaries;
- Creating and populating DFIRM database layers;
- Performing all mapping and cartography to create new DFIRM map panels; and
- Generating metadata.

US Army Corps of Engineers ®
Norfolk District

The Norfolk District is involved in 13 different projects as a FEMA mapping partner. The Map Modernization process has been initiated for the following localities, listed by Fiscal Year (FY-Oct. 1 through Sept. 30):

- FY 2004: Accomack County and Northampton County
- FY 2005: Mathews County, City of Norfolk, and City of Suffolk
- FY 2006: City of Hampton, City of Poquoson, City of Portsmouth, and York County
- FY 2007: City of Colonial Heights, City of Hopewell, City of Petersburg, and Prince George County

To find flood maps for your area, visit FEMA's Map Service Center online at http://msc.fema.gov.

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VAMLIS

VAMLIS 2008 GIS Conference:
Call for Presentations

By:
Clay Wise
President, VAMLIS

The Virginia Association for Mapping and Land Information Systems (VAMLIS) is pleased to announce their 2008 GIS Conference. The Conference, which is co-sponsored by ESRI, Timmons Group, and VITA/VGIN, is scheduled for May 5-7 at the Omni Hotel and Conference Center in Charlottesville Virginia. The Conference kicks off with pre-conference workshops on May 5 and continues with up to five concurrent presentation tracks on May 6 & 7.

VAMLIS is now accepting abstract submissions for the Conference (abstracts are due by February 15). Share your experience, gain visibility, and enhance your professional growth with others who strive to promote GIS across Virginia through the use of mapping and land information systems. VAMLIS 2008 in Charlottesville will challenge participants to better manager, analyze, plan, and implement technology for more effective and efficient operations.

Abstract submission guidelines can be obtained on the VAMLIS 2008 Conference web page at http://www.vamlisconference.com .

Presenters receive a discounted conference attendance rate.

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iGETT: Call for Participation

Participants will:

• take or test out of the on-line GIS refresher course and review an introduction to remote sensing on the iGETT Web site before the first Summer Institute; attend all days and all sessions at both Summer Institutes; complete an on-line Remote sensing course.

• develop course modules (to cover at least two weeks of class time) or a new courses to address workforce needs that can be met by integrating GIS and federal land remote sensing data; make information about the modules and/or courses freely available on the iGETT Web site.

• participate in monthly teleconferences focused on the module/course development; accept guidance from iGETT staff and reviewers, including members of the American Society for Photogrammetry and Remote Sensing (http://www.asprs.org).

• develop and implement regional outreach initiatives to:
  -recruit students;

-disseminate information about the program to other two-year colleges;

-explore articulation possibilities with high schools and four-year colleges;

-establish relationships with industries and government agencies that may need training for employees and/or be able to provide internships for students and jobs for graduates.

Project Schedule:

• on-line GIS refresher course and an introduction to remote sensing prior to Summer Institute

• first Summer Institute (2 weeks), *Sunday June 15 to Saturday June 28, 2008*

• on-line remote sensing course, fall semester 2008

• development of course modules or course(s), 2008-2009 academic year

• second Summer Institute (1 week): *Sunday June 14 to Saturday June 20, 2009*

• module/course implementation and community outreach, 2009-2010 academic year

Selection criteria:
Applications will be evaluated according to the potential impact on courses and programs at the participating institutions. Existing programs may range from very basic to more advanced but must include ArcGIS 9. In addition, iGETT seeks broad geographic participation and strong representation by institutions with underserved populations.

Project staff are available to answer questions
For additional information, contact:

• Jeannie Allen, SSAI: 301-614-6627; Jeannette_Allen@ssaihq.com

• Osa Brand, National Council for Geographic Education; 703-430-6025; brand.ncge@verizon.net

• Phillip Davis, Computer Science, Del Mar College: 361-698-1126; pdavis@delmar.edu

• Rachel Headley, Landsat Project, U.S. Geological Survey: 605-594-6118; rheadley@usgs.gov

• Ann Johnson, Environmental Systems Research Institute (ESRI): 909-793-2853 ext. 1-1793; ajohnson@esri.com
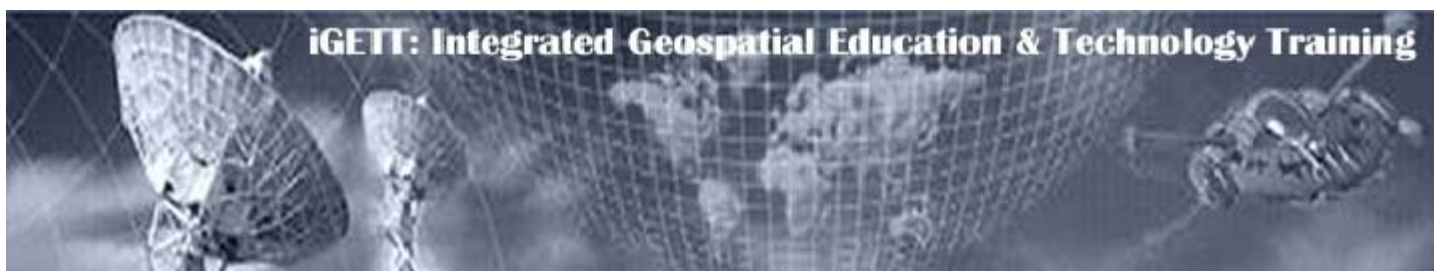
iGETT: Integrated Geospatial Education & Technology Training

Virginia Metadata Workshop January 11, 2008, Chester Virginia

Hosted by VGIN. For additional information & registration, , contact Lyle Hornbaker 804-416-6202 (lyle.hornbaker@vita.virginia.gov)

Pictures, Points and Places January 16th, Roanoke, VA

Hosted by the Virginia Geospatial Extension Program

Further information and registration: http://www.cpe.vt.edu/gisworkshop

Virginia Metadata Workshop January 25, 2008, SWHEC, Abingdon, VA

Hosted by VGIN. For additional information & registration, , contact Lyle Hornbaker 804-416-6202 (lyle.hornbaker@vita.virginia.gov)

Virginia Metadata Workshop January 28, 2008, Chesapeake, VA

Hosted by VGIN. For additional information & registration, , contact Lyle Hornbaker 804-416-6202 (lyle.hornbaker@vita.virginia.gov)

Virginia Metadata Workshop January 29, 2008, Chesapeake, VA

Hosted by VGIN. For additional information & registration, , contact Lyle Hornbaker 804-416-6202 (lyle.hornbaker@vita.virginia.gov)

ArcGIS Learner's Permit February 5th, Abingdon, VA

Hosted by the Virginia Geospatial Extension Program

Further information and registration: http://www.cpe.vt.edu/gisworkshop

Introduction to GPS for Virginia Cooperative Extension February 12th, Richmond, VA

Hosted by Virginia Cooperative Extension and the Virginia Geospatial Extension Program.
Contact John McGee (jmcg@vt.edu) for additional information.

Introduction to GIS for the Virginia Community College System
February 13th-15th, Richmond, VA

Hosted by the Virginia Geospatial Extension Program through NSF funding. Contact John McGee (jmcg@vt.edu) for additional information.

Map@syst : Geospatial Solutions for Rural and Community Sustainability National Rollout for eXtension

February 22nd, Washington, DC. Contact John McGee (jmcg@vt.edu) for additional information.

Introduction to ArcPAD March 12th, Roanoke, VA

Hosted by the Virginia Geospatial Extension Program

Further information and registration: http://www.cpe.vt.edu/gisworkshop

National Hydrology Dataset (NHD) Workshop

March 5th, Richmond, Virginia

Hosted by the USGS with support from the Virginia Geospatial Extension Program, VAMLIS, and VGIN.
For additional information, and free registration - http://www.cnr.vt.edu/gep/nhd_workshop.html

National Hydrology Dataset (NHD) Workshop
March 6th, USGS National Headquarters, Reston, Virginia
Hosted by the USGS with support from the Virginia Geospatial Extension Program, VAMLIS, and VGIN.
For additional information, and free registration - http://www.cnr.vt.edu/gep/nhd_workshop.html

Introduction to ArcGIS Server 9:00 -1:00 March 7th.
Montgomery County Administration Bldg, 755 Roanoke St, Suite 2E
For Additional information, contact Bob Rike (rrike@esri.com) or John McGee (jmcg@vt.edu)
Provided by ESRI in partnership with the Virginia Geospatial Extension Program and Montgomery County GIS Dept.
Additional information and free registration: https://survey.vt.edu/survey/entry.jsp?id=1199819222335

Location, Location, Information: Introduction to GIS April 14-15,
Hampton Roads (Virginia Beach), VA
Hosted by the Virginia Geospatial Extension Program
Further information and registration: http://www.cpe.vt.edu/gisworkshop

Pictures, Points and Places May 14th, Richmond, VA
Hosted by the Virginia Geospatial Extension Program
Further information and registration: http://www.cpe.vt.edu/gisworkshop

Virginia Tech Geographic Information Systems and Remote Sensing (OGIS) Research Symposium, April, 2008, Blacksburg, VA. Hosted by VT-OGIS.
Sponsored by VAMLIS and the VSGC.
Contact John McGee (jmcg@vt.edu) for additional information.

VAMLIS Preconference Workshops May 5, 2008. Charlottesville, VA.
Hosted by the Virginia Association of Mapping and Land Information Systems (VAMLIS), ESRI, and the
Virginia Geospatial Extension Program. Stay tuned for further information, or periodically check the VAMLIS
Conference Website: http://www.vamlisconference.com

VAMLIS GIS Spring Conference, May 6-7, 2008. Charlottesville, VA.
Hosted by the Virginia Association of Mapping and Land Information Systems (VAMLIS) . For information
associated with registration, abstract submissions, and poster competitions, etc., access the VAMLIS Conference
Website http://www.vamlisconference.com
Note: VAMLIS is accepting Presntation / abstract submissions through February 15th!

ESRI International User Conference / ESRI Educational Conference
August 2-8, San Diego, CA
For additional information and registration: http://www.esri.com/events/uc

GIS Tips and Tricks

TIGER to KML

Bruce Ralston from the University of Tennessee has recently developed a freeware program (TGR2KML), that will extract US Census polygons and export them to Google KML format. The program can be downloaded from: http://tnatlas.geog.utk.edu .

This program supports all TIGER polygon layers, the clipping of water polygons, and merging layers from multiple TIGER archives. It works with TIGER version 1994 to 2006 Second Edition.

TGR2KML currently does not support line or point features. However, Bruce may develop that functionality in the future if there is sufficient demand.

Google on...!

VGIN

Virginia Space Grant Consortium
Aerospace Partnerships in Education, Research and Industry

VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY
VIRGINIA STATE UNIVERSITY

Virginia Tech

Virginia Cooperative Extension
Knowledge for the Commonwealth

Virginia Geospatial Extension Program
A partnership between VSGC and VCE

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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