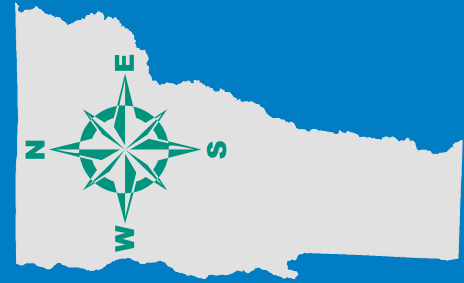


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VGIS News

Happenings At VCGI

New Data in the VGIS Warehouse

- **ImageryPhotos_MISC, 2009** Barre-Montpelier area imagery (0.3 meter) truecolor
- **CadastralParcels_VTPARCELS**, VT Parcel data provided by towns and RPCs
- **ImageryPhotos_VTORTHO**, 2004 Chittenden County True Color 1:1250
- **ImageryPhotos_MISC, 2008** VT Canadian Border Imagery (0.3m color, UTM)
- **TourismTrails_VASTINTRSEC**, Intersection points along VAST Trail Network (for GPS use)

Upcoming Training Opportunities!

Leslie Pelch, VCGI

1. VCGI partners with UNH to provide inexpensive mapping technology workshops on a variety of topics. The first two half-day workshops (\$50 each) that will be offered are Mapping the Google Way and GIS on Pennies a Day: Test Drive on March 30 in Randolph and March 31 in Colchester. Both workshops are already full, but space has been reserved to repeat these workshops on June 21 and 22. You can find descriptions of all of the workshops UNH offers at the UNH Geospatial Extension web page (the June trainings will appear in the schedule soon): <http://extension.unh.edu/GISGPS/GISTrain.htm>

2. VCGI partners with ESRI to provide ArcGIS Server training in VT! ArcGIS Server Enterprise Configuration and Tuning for SQL Server will be offered in Waterbury on April 6 & 7 for \$980 (think of the savings - no driving to Danvers or paying for lodging!). There is still room in this class, so check here to see the details and to register: <http://training.esri.com/gateway/>

3. VCGI partners with VT Technical College and CCV to provide our summer Introductory GIS Training at more locations! VCGI is currently scheduling our summer training and hopes to offer it at the following locations: Williston, White River Junction, Lyndonville, and Castleton. We plan to offer the class over two consecutive days at each site (dates in July and August to be determined) with an optional final 4 hours on using GPS with GIS. Keep an eye on the VCGI front page for an announcement about dates, locations, and content.

If you have specific training requests, please contact Leslie - in particular, check out the UNH and ESRI offerings and let me know what you would like to see offered in VT over the next 12 to 18 months: lesliep@vcgi.org.



The Klencke Atlas - see cool stuff>>>>>>

VT Wireless Broadband Propagation Mapping Update

David Brotzman, VCGI

VCGI is pleased to announce the recent award of the VT Wireless Broadband Propagation Mapping Contract to a Team led by Pericle Communications Company of Colorado Springs, CO. The other member of the Pericle Team is Cromack Industries of Greenfield, MA. The Wireless Broadband Propagation Mapping effort provides critical broadband coverage data collection, mapping and verification support for Vermont's Broadband Data and Development Grant from the National Telecommunications and Information Administration (NTIA).

The Pericle Team has a wealth of previous experience working together in New England and nationally in the performance of radio coverage modeling and drive test surveying. Pericle has developed automated software that measures radio coverage of existing sites and streamlines simultaneous data collection from a number of radio frequency receivers. Pericle is experienced in radio site interference analysis as well as the accurate identification and characterization of co-located radio communication

Cool Stuff

www.geo-tee.com - Fun T-shirts and stickers for Geo-geeks

Some GIS blogs:

James Fee: <http://www.spatiallyadjusted.com/>
Jithen Singh: <http://mandown.co.nz/>

Bizarre Map Challenge

(BMC): A National Map Design Competition Hosted by the National GeoTech Center (<http://www.geotechcenter.org/>) and San Diego State University. Contact (Q&A) email address: bmc@geography.sdsu.edu
Goal: To promote spatial thinking and geospatial technology awareness in high schools, community colleges, and universities in the United States. To inspire curiosity about geographic patterns and map representation for students and the broader public.
Awards range from \$200 to \$5000!

Food Stamps map in the New York Times: <http://www.nytimes.com/interactive/2009/11/28/us/20091128-foodstamps.html>

Have you heard about the HUGE Klencke atlas? <http://www.guardian.co.uk/books/2010/jan/26/klencke-atlas-british-library-exhibition>

Nikolas Schiller just has cool products (look for his calendar next year in the fall) and art work: <http://www.nikolasschiller.com/blog/>

technologies and equipment. VCGI and the rest of the VT Broadband Mapping Team look forward to working with the Pericle Team and the broadband data and voice Providers in Vermont to create the best possible statewide map of broadband coverage in the state.

The Vermont Broadband Mapping Team is working to develop a comprehensive and verified geographic inventory of broadband service availability in the State of Vermont. Landline and wireless services (fixed and mobile) will be mapped, including wireless voice and data with information from the providers and other sources. The broadband mapping information collected and verified through this effort will then support the broadband development objectives identified in the Rural Utilities Service's Broadband Initiatives Program (BIP) and NTIA's Broadband Technology Opportunities Program (BTOP) in Vermont. Most importantly, the geographic inventory will further refine our understanding of the location of 'unserved' and 'underserved' areas in the state, thereby supporting targeted future investments in these areas. The mapped broadband coverage information will also be provided to the public for their use in determining the availability of broadband resources in the state.

The NTIA Broadband Data and Development Grant was awarded by NTIA in October 2009 to the Vermont Broadband Mapping Team composed of VCGI, the VT Department of Public Service, UVM - Center for Rural Studies, VT Telecommunications Authority and the VT Enhanced 911 Board. NTIA's Broadband Data and Development Grant is funded through the American Recovery and Reinvestment Act of 2009. VCGI also wants to recognize the VT Telecommunications Authority for funding the collection and mapping of the availability of wireless voice services in the state, as that effort was not funded by NTIA. More information on the NTIA Broadband Data and Development grant may be found at <http://www.leahy.senate.gov/DOX/BroadbandMappingRelease.pdf>.

Contact: David Brotzman at VCGI for any additional information, davidb@vcgi.org, 802.882.3003.

Renewable Energy Atlas of VT: Project Update

from www.vsjf.org



The Renewable Energy Atlas of Vermont is a state-of-the-art GIS-based website that identifies, analyzes, and visualizes existing and promising locations for renewable energy projects. The Atlas is the first tool of its kind in the United States that enables end users to click on their town (or several towns or county/counties) and select from a thorough suite of renewable energy options: biomass, efficiency, geothermal, hydroelectric, solar, and wind.

With the proliferation of energy committees in over 90 towns and cities, it's clear that Vermonters want a renewable energy and efficiency based economy. To support such efforts, a variety of new programs and funding sources have become available, including the Clean Energy Development Fund, Vermont Community Climate Change Grant Program and Community Energy Efficiency & Conservation Block Grants. Two additional opportunities — the state's new feed-in tariff program and the enablement of 'clean energy assessment districts' — will also result in the development of new renewable energy projects in the state.

Despite these opportunities, and the growing interest in taking advantage of them, Vermonters struggle with how to best navigate the process of moving projects from concept to reality. How, for example, can we assess the renewable energy and efficiency possibilities in our communities? How much local renewable energy generation is theoretically possible? How can Vermonters influence local energy planning and the decision making process?

The Atlas will assist town energy committees, the Clean Energy Development Fund and other funders, educators, planners, policy-makers, and businesses in making informed decisions about the planning

and implementation of renewable energy in their communities – decisions that ultimately lead to successful projects, greater energy security, a cleaner and healthier environment, and a better quality of life across the state.

The Atlas is a collaboration between The VT Sustainable Jobs Fund (VSJF), The Vermont Center for Geographic Information (Waterbury), Fountains Spatial (Montpelier), and many helpful experts. “Our Vermont office is particularly excited to be working on a project that supports the maturation of Vermont’s green economy,” said Mark Haberle, Senior Project Manager at Fountains. “The Atlas is a unique, forward-thinking, and important tool for analysis and review of alternative energy solutions. It is our goal to create a solution that facilitates influencing the decision-making process at all levels through robust information discovery and dissemination. It is our hope that the Atlas will cement VSJF’s position at the forefront of sustainable jobs development and innovation in Vermont and, through this effort, become a national leader in deploying pioneering solutions for responding to a carbon constrained future.”

Major funding was provided by the U.S. Department of Energy through U.S. Senator Patrick Leahy, Green Mountain Coffee Roasters, and the Vermont Community Foundation.

Voices From All Sectors

Video Tutorials Posted at UVM SAL Blog

Jarlath O'Neil-Dunne, UVM SAL

Over the past several months the University of Vermont’s Spatial Analysis Lab (SAL) has created video tutorials for various geospatial software packages. We have posted the videos to our blog, Letters from the SAL - <http://letters-sal.blogspot.com>. Direct links to some of the most popular ones below. We hope you find them useful.

ArcGIS

Model Builder - <http://tinyurl.com/ylztfh4>

Metadata templates - <http://tinyurl.com/yfcac7g>

Advanced PDF export - <http://tinyurl.com/yh8n8e2>

QT Modeler

LAS to raster conversion - <http://tinyurl.com/yhaqz8p>

eCognition

Meaningful objects - <http://tinyurl.com/yjf2a3n>

Customized import - <http://tinyurl.com/cyfeoc>

Image processing to improve image objects - <http://tinyurl.com/ykytwnv>

Broad area high-resolution land cover processing - <http://tinyurl.com/y9lkzme>

ERDAS IMAGINE

Geospatial light table (9.x) - <http://tinyurl.com/ydt77vh>



“OLD TIMER” LIST (Continued from last quarter's newsletter...)

Compiled and edited by Sara Moulton, VTrans

Items 11 - 16 From Jay Appleton, City of Burlington
with responses from Jay Appleton, City of Burlington and Johnathan Croft, VTrans

11.) If you know what “fuzzy creep” is, and whether it actually occurred.

JA: Fuzzy creep was the alleged to be slight movement of line vertex coordinates caused by repeated cleaning of a coverage. This proved to be fiction.

JC: This is one of the age old questions, did “fuzzy creep” actually occur. I think yes. “Fuzzy creep” is the potential for your arcs to move when you run multiple clean and builds on a coverage using tolerances that might be too large. Even with very small tolerances, there could be potential for arcs and nodes to move, thus creating the possibility for “fuzzy creep”. The processing that happens now with clustering and cracking are processes that occurred with clean when using coverages.

12.) If you know how to clean a reel tape drive and solder cables.

JA: We all did these in the early days. Tape drives were cleaned with isopropyl alcohol and Q-Tips. Dirt would build up on the drive heads, especially with older reused tapes. Regular cleaning of the drive heads and fresh tapes minimized the chances of your carefully backed up data being toast. USB and ethernet standards have ended the need for soldering skills.

JC: Some early GIS users became masters at cannibalizing old VAX and DEC machines to get parts to keep the core GIS systems up and running. This required a lot of hardware knowledge, steady hands to solder, and some back-channel contacts to get parts from machines that were headed to the dustbin. Due to limited resources and need to higher end computing, ingenuity and resourcefulness were key attributes for a successful operation.

13.) Why it was unwise to digitize on rainy days.

JA: In the old digitizer days, humidity would make paper maps expand. The resulting data would not edgematch very well with data automated on dry days, producing headaches when one had to seam it all together.

JC: Heads-up digitizing from scanned maps and digital orthophotos have sent the digitizers and pucks to the scrap heap. One of the hurdles of digitizing a map on a digitizer was to make sure that you were properly referencing the map to the coordinates stored in the GIS. This is essentially sending an electrical pulse from the mouse-like stylus or puck through the map into a tablet that contains a mesh of wires that completes the circuit and records the relative position on the tablet. The tablet coordinates are sent to the GIS, which converts the digitizer values to map units. Each map needed to be registered before digitizing and an error value was returned based on the residual mean square (RMS) of the digitizer points versus the tic points in the GIS. If the RMS was too high, you had to try again. If you had a rainy day or day with high humidity, your paper maps would swell and the scale on the x axis would be different than the y-axis. Depending on the amount of expansion, you might get really bad RMS values and not be able to digitize accurately. One means around the problem was to use film, such as Mylar that did not deform with humidity.

14.) What branch of the military was Gary Smith in.

Answer from Gary Smith: U.S. Navy, he was a Naval Aviator and flew airplanes and helicopters for 20 years.

15.) Which Vermont Governor authorized the creation of the OGIS.

JA: Governor Madeline Kunin signed Act 200 in 1988. See http://www.vcgi.org/about_vcgi/?page=../documents/enabling_legislation.cfm .

16.) Who is David Sousa.

JA: David worked at the UVM School of Natural Resources, along with Gary Smith and Eileen Powers. These three oversaw a great deal of the automation of original foundational GIS data layers. David was, and is, very talented with computer technology, and databases in particular. Our early data would not have been as durable without him. David left Vermont to work for ESRI sometime around 1990. David still works in Redlands, and is now one of the lead developers of the geodatabase data model.

JC: The GIS lab at UVM's Aiken Center was headed by Gary Smith with the direct assistance from Eileen Powers and David Sousa. Eileen and David assisted Gary in the lab components of his course on GIS and helped run the day to day operations of the lab. He has since gone on to work for ESRI and is one of the driving forces behind the File Geodatabase. David is also an accomplished musician, stemming from the Gidget and Ghandi days. He can be seen playing guitar and accordion with Clint Brown and Dale Honeycutt at the ESRI User Conference.

Item 17 is from Jarlath O'Neil-Dunne, UVM Spatial Analysis Lab

17) What action causes the error "literal token" to appear.

This was an error caused back in the days of ArcInfo 6. If one forgot to initialize the digitizing puck before using it, the terminal would display "literal token." Quite often I would digitize hundreds of points before looking back to the terminal. With each literal token error taking 30 seconds to register, it could be a long wait.

COM.Geo 2010 Highlight: Cloud Computing for Geospatial (Submission Deadlines)

<http://www.com-geo.org/>

COM.Geo 2010 is the conference and exhibition on computing for geospatial research and application with focuses on the latest computing technologies for multidisciplinary research and development that enables the exploration in geospatial areas. COM.Geo Conference is an exclusive event that connects researchers, developers, scientists, and application users from academia, government, and industry in both computing and geospatial fields. Conference takes place June 21-23, 2010 in Washington, D.C.

Full and Short Papers Submission Deadline **Feb. 23, 2010**

Courses Proposal Submission Deadline **Feb. 23, 2010**

Tech Talks / Posters Abstract Submission Deadline **Mar. 31, 2010**

GIS-Pro: URISA's Annual Conference for GIS Professionals

<http://www.gis-pro.org/>

Call for Presentations - abstracts due February 23, conference takes place September 28 - October 1, 2010 at the Hilton Orlando Bonnet Creek.

Along with the new conference name, URISA has listened to you, our members and conference attendees. Through a series of surveys, interactive discussions, and a challenge set forth by Dr. Barry Wellar (2009 keynote speaker), URISA presents a series of exciting new conference themes. These themes are designed to truly reflect what GIS Professionals are looking for in a modern conference. Gone are restrictive conference tracks - what's in are coordinated themes, designed to move the conversation forward and interactively share information among conference participants.

Dig deeper...go beyond basic technology and applications and contemplate issues related to policy, information and technology management. The Conference offers a unique multidisciplinary approach, with participation from all levels and agencies of government, academia, consultants, developers, technology providers...so you receive the benefit of a variety of viewpoints and experiences.

Mapping Disaster

<http://mapaction.org/>

In a humanitarian crisis, relief agencies need rapid answers to questions about 'where'. Where are the greatest needs? Where are the gaps that need to be filled? MapAction works in disaster zones providing frequently updated situation maps showing where relief help is most urgently needed.

http://dgl.us.neolane.net/res/dgl/survey/CES_H.jsp
DigitalGlobe is actively collecting imagery of Haiti in response to the recent earthquakes, and both pre- and post-earthquake imagery is available through our [Crisis Event Service](#).

<http://www.giscorps.org>

A program of the Urban and Regional Information Systems Association (URISA), GISCorps coordinates short term, volunteer GIS services to underprivileged communities worldwide. Our services support humanitarian relief, community development, local capacity building, health and education. In January 2010, a request for ArcGIS Server specialists came to GISCorps from the UN Office for Outer Space Affairs (UNOOSA), as implementing Office for the UN Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER). The search resulted in the selection of two volunteers.



Next Roundtable Will Take Place May 5 in Colchester

Leslie Pelch, VCGI

Informal conferences called "Roundtables" are held twice per year (October and May). The day-long events are comprised of several concurrent sessions each hour, and sessions can consist of presentations by colleagues, vendor product demonstrations, or discussions about issues relevant to the GIS community. Roundtables provide VSDP members and others an opportunity to network and learn from one another. The cost for participation is around \$50.

If you would like to help plan the next Roundtable, send Leslie an email at lesliep@vcgi.org. Participation on the planning committee consists of a phone conference and some emails. Check out more information about the Roundtables and see topics from previous conferences (in the Archive) here: <http://www.vcgi.org/commres/?page=./vsdp/roundtable.cfm>

Is There an Android in Your Future? (part one)

Suzanne Blanchard, Smart Growth VT

The new generation of Smartphones, from the iPhone on, have plenty of intriguing gizmos used to full effect in distractions like Bubble (a bubble level on your phone that talks!), Solo (a guitar on your phone!), or Magic 8 Ball (your childhood on your phone). And consumers get great effect out of having Google mapping products and guide services like Zagat's and Where? handy via phone. The question remains, what possibilities open up for professionals with a GPS-enabled device that houses a digital magnetometer, accelerometer, satellite and cellular GPS detection, wifi and cellular electromagnetic sensors, acoustic analysis and proximity sensors.

I've been using a Google Android-based phone, the T-Mobile G1, since December and have found a half dozen useful location-based apps (abbreviated from applications - the mobile phone equivalent of "programs"). In just a few months, the phone has become an essential "swiss army knife" in my pocket or purse. I read books on it, manage projects and calendars, keep up on Facebook and LinkedIn, share photos and video with family, and occasionally actually call or email someone. I also use it to store data, for everything from documents and business cards to geo-tagged imagery and notes.

No matter how many keyboard options they offer, or how big a screen, you won't ever forget that you're using a phone to write that memo, even if the keyboard is optimized and personalized to the extreme. The same applies to applications. The best applications, including GPS, streamline and minimize keyboard input. Voice inputs would be great, if Google's voice recognition application were stronger. Here is a recent text transcription of a voicemail from a RiteAid store: "This is your wife needs store. We are calling to remind Hi Suzanne, did your order is ready you can pick up your order until. Mark Hey at 20 parents.."

Like voice recognition, the sensitivity and accuracy of the various mobile phone sensors varies from vendor to vendor. GPS accuracy is standard civilian, or a little better than 50 feet on average. My G1 handset was made by HTC, the infamous U.S. Census contractor. That said, the possibilities for use in the field are limited only by imagination, data storage, and battery power.

EpiCollect

One intriguing project using Android OS phones is EpiCollect, a field data collection open source smartphone app. Bioinformatician David Aanensen at the Department of Infectious Disease Epidemiology at Imperial College in London developed EpiCollect as an inexpensive, efficient means to process geo-tagged field data collected around the globe. Instead of costly dedicated handsets, researchers can use ubiquitous and relatively inexpensive smartphones. Because a GPS signal is readily available in most locations, the fact that the EpiCollect program stores data and then sends it whenever a cellular or wifi signal is available allows work in remote locations. With generic data storage cards and extra batteries and solar chargers, field workers can collect large quantities of data far from the grid.

Android Apps

While in daily use, I primarily use the suite of applications from Google maps, Android app developers have been experimenting with the possibilities for the many sensing capabilities of the phones including GPS. Here are a few GPS apps I have on my phone right now. Because I'm cheap and skeptical, all the apps are free - nearly 60 percent of Android apps are free, versus 25 percent free in iPhone's apps store.

Google Maps/Latitude/Nav/My Maps Editor

The Android OS was built from bottom up to integrate with Google applications, so when I turned on my phone the first time, I had all my contacts and Gmail. I also had a quick link to Google Maps (not Earth, though that has just come out for Android 2.0 phones). Basic functions include a button to find "My Location," search for a



location, and get driving, walking, and public transit directions. You can also easily navigate to any of your Google contacts with a street address.

Over the past three months, Maps has been updated with new capabilities. It started with Latitude, a social networking app that lets you share your location and status with select friends. Most new capabilities are added as layers to the Google Maps app. Layers have been added showing traffic (yes it does work, even some places in Vermont), terrain, satellite images, Latitude, My Maps, Wikipedia, transit lines, (Google's) favorite places and the latest dubious addition, Google's notorious "Buzz" application.

A separate app, My Maps Editor, lets you create, save and use maps using the "My Maps" functionality in Google Maps. Maps you created on your computer are available on your phone and vice versa. Create with Google apps or import kml files. The best new feature of Maps for Android is a full turn-by-turn navigation system. Some third party applications have been built for Android phones. I understand that the popular CoPilot software is available as a paid Android app. But the free navigation options on Android were all dysfunctional. Now, the built in navigation for Google Maps provides a heads up display and voiced turn-by-turn directions. So far, this has worked great for me in trips around the state. I've had connection to the Edge network in places I would never have expected. There is a call by users for the ability to download maps instead of having to have cellular data access or wifi. In my own experience, I have noticed a couple of short outages driving down I-89, but generally the system picks right back up. And start up is virtually instantaneous next to dedicated vehicle GPS devices like Tom Tom or Garmin.



3Banana

3Banana allows you to take photos and notes and geo-tag them. Automatically links tag to Google Maps. Store data on your microSD card and/or upload to their server at snaptic.com. All notes are searchable from the phone's global search function.

AndMeasure

AndMeasure is a small app that does one thing: allow a user to measure the distance between points on a Google map. How many feet to the coffee shop? What's the approximate frontage of a lot? Measures in Metric and English units as well as yards for golf. Limitations: delete all points or none - no ability to delete select points when measuring a path. AndMeasure will only measure a straight line ("as the crow flies").

Compass

A straightforward compass. Can be displayed as analog, digital or "antique" and can be calibrated. The sensor can also be adjusted to "smooth" and slow the compass reading. The compass displays your current address, either as Lat/Long or street address if it can resolve it, and has a 'note' button which takes you to 3Banana (see above), allowing you to take notes and/or photos and mark a location.

Part Two of this article will appear in the May 2010 VGIS News!

Mystery Map Contest

Last quarter's Mystery Map showed a "Contour Map" of St. Johnsbury (a visual pun created by Tracy McIntyre of NVDA and submitted by Peter Whitney of The Town of St. Johnsbury). Congratulations to Nicole Grohoski and Jim Brangan of the Lake Champlain Basin Program for figuring it out!



What do the shaded polygons above have in common? Please submit your responses to Leslie at lesliep@vcgi.org or at the address given on the back page of the newsletter. The winner, drawn from among the respondents who send in correct answers, will receive a wonderful prize!

The VGIS News is Produced by:



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