



Geographic Information Systems Technology News

The Newsletter of the New York State GIS Coordination Program

Eliot Spitzer
Governor

William F. Pelgrin
Director

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NYS GIS Clearinghouse: <http://www.nysgis.state.ny.us/>

NYS DOT: CARS Web Integrates with Google Maps

NYS DOT's Information Exchange Network (IEN) provides a core system to share information across the Department as well as with the New York State Transportation Federation and other partners. One component of the IEN is the Condition Acquisition and Reporting system (CARS), which maintains data on highway- and road-related events such as scheduled roadwork, accidents, and road closures.

A product of Castle Rock Consultants, CARS is used by transportation departments in about a dozen states. NYS DOT originally implemented CARS



for internal use (which is referred to as "CARS application"), and expanded it to the public two years ago (referred to as "CARS Web") via the Transportation Federation's Travel Information Gateway, commonly referred to as "the TIG." CARS Web, which now uses Google Maps, is accessed via the "Real-Time Transportation Status" tab on the TIG web site, at:

www3.travelinfony.com/carsgoogle/.

Transportation Management Centers (TMC) and transportation maintenance staff input events affecting state maintained roads to the CARS application. The CARS application also receives automated feeds from the Thruway's Computer-Aided Dispatch system. CARS Web previously received systemic feeds from the CARS application and rendered events on a series of static maps of the state. The application formerly handed off the data to CARS Web via a batch process. This process took 15 to 20 minutes to render

all the events on the static map pages.

NYS DOT's System Optimization Section (formerly ITS) program area requested that the CARS Web interface be made more functional and professional. The former interface, supplied by Castle Rock, provided predefined maps that didn't allow for zooming or panning, and the look and feel of the maps compared poorly to other states' travel information websites. Four mapping interface replacements were evaluated and NYS DOT Executive Management chose Google Maps Enterprise for the

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How do I Become a Cooperative Member?

To learn more about benefits of participating in the NYS GIS Data Sharing Cooperative, visit <http://www.nysgis/gis/datacoop.htm> or contact Sharon Oskam at the NYS Office of Cyber Security and Critical Infrastructure Coordination at (518) 474-5212 or via e-mail at sharon.oskam@escic.state.ny.us.

(NYS DOT...Continued from page 1)

new user interface, due to outstanding technical performance and ease of use for end-users.

The CARS map interface was reprogrammed to utilize the Google Maps Enterprise Application Programming Interface (API), which now provides interactive statewide mapping for CARS Web, and renders travel information changes in less than a minute. The underlying license agreement with Google includes full technical support in the use of the API and eliminates the need for NYSDOT to maintain or update the base mapping layer on an ongoing basis, since the map base is hosted and maintained by Google. When a user requests information for a specific highway in CARS Web, the CARS application hands off its incident data to Google which supplies the map, complete with the incident overlay, to the user's screen. NYSDOT's border and banner remains around the Google map, which is larger than the map that displayed in the old CARS Web system.

In addition to providing a more professional look and feel, the Google API provides a more complete representation of state and federal highways as well as a display of local highways. The former static maps did not display any local highways or roadways, nor did they even display all the highways maintained by NYSDOT. The user now can zoom and pan across any map, although not to the same level as when accessing maps directly through Google's website.

Project Manager John Mioducki led his OIS team in a four-month developmental effort, with coding in Java. Amrit Singh and Deepak Kannoju created structured XML extracts from the CARS database, which are mapped on Google's maps via Latitude/Longitude coordinates. Other cutting edge web development technologies are employed behind the scenes creating a truly interactive application. The new and improved application went live on September 29th.

The new CARS Web Google continues to provide closed circuit television stills of selected roadways in various metropolitan areas, and traffic speed feedback from roadway sensors in limited areas. When a user clicked a camera in the old version, a basic Internet Explorer window popped up that displayed the JPEG photo and rudimentary information stating the camera's direction. In the new version, a Google window opens instead to display the still capture, as shown on this page. Streaming video is not yet in the works, due to extensive bandwidth requirements.

CARS Web Google provides another improvement in the display of weather information. The former weather feature popped up a text-only forecast from the National Oceanic and Atmospheric Administration (NOAA) forecast and warning service. In the new version, clicking a weather icon provides a graphical forecast from NOAA.

Although CARS Web Google does not display incident data for other states, maps display roads leading into other states when a user is viewing a New York State border. Over time, the plan is to integrate this system with other states that have similar systems.

For more information contact Joe Salo at jsalo@dot.state.ny.us.

Empowering Local Governments with GIS: The Community GIS Model

How it Came About

Jn the year 2000, Southern Tier West Regional Planning and Development Board in Salamanca, NY, kicked off a new program they called Community GIS. The idea was to provide GIS capacity to local governments in the three-county (Allegany, Cattaraugus, Chautauqua), western New York region.

Back in 2000, there was little GIS capacity at the local government level in this region. In fact, it was in its infancy at the county level. Recognizing the potential for integrating GIS into local governments, Southern Tier West's staff began to design a program to meet these needs.

Immediately plans were laid for a complete solution. Southern Tier West began talking with local officials to find the barriers that governments were facing. They consistently heard two answers, costs and expertise. This drove home the point that the program needed to be a complete solution. Simply providing software would not be the answer. At the same time, internet based software began to advance rapidly. ESRI had ArcIMS to a point of being a stable, reliable, and scaleable platform.

These factors collided to form the basis upon which Community GIS was built. In mid 1999, Southern Tier West applied to the Appalachian Regional Commission for grant money to implement the Community GIS program. The first year, six communities were hand selected for the pilot program. In early 2000, Southern Tier West became the first entity in the nation to host this type of program using ArcIMS.

(Continued on page 3)



Southern Tier Region of New York State

(Empowering ...Continued from page 2)

How it Works

By utilizing ArcIMS software, Southern Tier West is able to create an on-line viewer for each member community. That viewer provides access and basic GIS tools to the local government for analysis of their GIS data. Several custom tools were built to add functionality into the viewer. These tools came at the request of the member communities. Each community is responsible for their own data, they own it and are charged with maintaining it.

As a full service program, Community GIS goes well beyond simply providing access to GIS data. Training is provided to all members on a regular basis. Training includes GIS basics, using their community viewer, understanding data, and utilizing GIS in their daily jobs. Southern Tier West also assists the communities by providing access to data collection tools. A sub-meter GPS unit is available to all members, and training on using the unit is provided. A laser range finder, digital compass, digital camera, large format plotter, and other hardware are also made available for the members to utilize at no additional cost.

Southern Tier West hosts the site in house. Currently, our ArcIMS service contains over 40 map services. The server is connected to a T-1 line for access to the internet. It is a dual processor, Windows machine. Apache and Tomcat are used for web server and middle-ware software.

Community Responsibilities

To become a member of Community GIS, each municipality must agree to meet certain requirements. The municipality is responsible for their own data. Southern Tier West will assist them however it can, but ultimately the municipality decides what data to include, where to get it, and pays any fees associated with acquiring it if applicable.

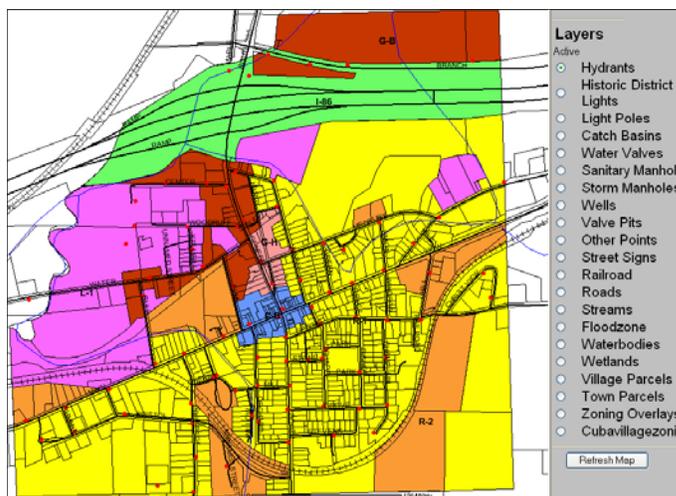
The local government must have reliable Internet access, and at least one computer connected that employees can use. Today we encourage them to make sure that their Internet connection is a broadband connection, not simply dial-up. However, there are communities where broadband is not an option because of a lack of availability. The system was designed to run on dial-up access, but it is definitely clunky. And, certain data sets are off limits, most notably any imagery data.

Their final responsibility is a financial one. While the program is grant subsidized, it is primarily funded by member contributions. To become a member, each community must pay a fee for the creation of their viewer. Once in, they then pay an annual maintenance fee for the continued hosting, training, and hardware access.

Success Stories

Currently there are 26 member communities. Not all communities have an on-line viewer, some have become members for access to the training and hardware alone. Most do utilize the on-line viewer for access and analysis.

What the program has provided communities is an alternative that helps them lower the barriers for using GIS. By relying on an Arc-IMS solution we tackle several issues. First, it is available to them anywhere there's an Internet connection. That means at home, the office, while traveling, on their cell phone. Second, we can control what analysis they can perform, as well as their access to data. There's no fear of someone accidentally deleting half a data set. We can also make the tools simple for them to use and eliminate things that they would never use. That makes it a clean, user-friendly solution.



Screenshot of the Community GIS application

But most importantly we've tackled the two top issues that local governments told us they faced: cost and expertise. The Community GIS program is less than half the cost of common GIS software alone, not to mention the value of training and access to hardware that are included. The issue of expertise is also addressed. Southern Tier West uses its expert staff to do all of the heavy lifting. The viewer is made very easy to use, lowering the skill level necessary. And finally the training programs provide a solid basis upon which people can rely to use what Community GIS offers.

Each year membership in the program continues to grow. Regions from around the country have used Community GIS as a model for their own similar programs. It has even won a couple of awards along the way.

For more information on Community GIS you can contact Brian Schrantz or John Buzzard at Southern Tier West. Or better yet, explore the system by visiting www.CommunityGIS.com.

Submitted by Brian Schrantz
(BSchrantz@southerntierwest.org)

MVCC is Preparing Civil & Surveying Graduates with GIS in Preparation for the Workforce

2006 New York State GIS Day Events

The Engineering Technologies and the Trades department at Mohawk Valley Community College is integrating GIS into their Tac-Abet accredited Civil and Surveying Engineering Technology degree programs. Last fall the department created two new courses: CT 265 Introduction to



GIS and CT 266 Capstone GIS.

The Introduction to GIS class introduces students to map making skills, coordinate systems, file conversions along with the techniques and concepts of GIS. Students also work towards a collaborative final project using GIS.

In Capstone GIS students create their own independent application in GIS. Several of the applications have been used to assist local business and communities. Students do research, collect field data and populate attributes for the various themes. Department Head Frank Przybycien says, "Integrating this technology with our Civil and Survey students will put them on the cutting edge for a career path."

We also offer CT 263, Digital Mapping, which emphasizes the fundamentals and applications of remote sensing.



Our computer laboratories are equipped with state of the art technology. MVCC has a site license for ArcGIS 9.2 with the following extensions: Spatial Analyst, Image Analyst, Stereo Analyst, 3D Analyst, Survey Analyst and Geo-Statistical Analyst. Pathfinder Office, and Carlson Survey.

Our laboratory hardware includes 4 Thales Survey Grade GPS Receivers, 6 Leica Total Stations, 7 Leica Theodolites, 12 Automatic Levels, 7 Garmin E-Trex Legend Mapping GPS Receivers, 2 TopCon Real-Time Kinematic GPS Receivers and 2 Trimble Geo-Explorers.



All of our labs are hands on and are tied closely to applications in industry. The rewarding experience is that the graduates not only leave MVCC knowing about GIS, Remote Sensing or GPS, but they actually know how to do it.

For more information:

MVCC Website: <http://www.mvcc.edu/index.cfm>

ETT Department Website: <http://www.mvcc.edu/academics/departments/ett/>

ETT Department News: <http://www.mvcc.edu/academics/departments/ett/news.cfm>

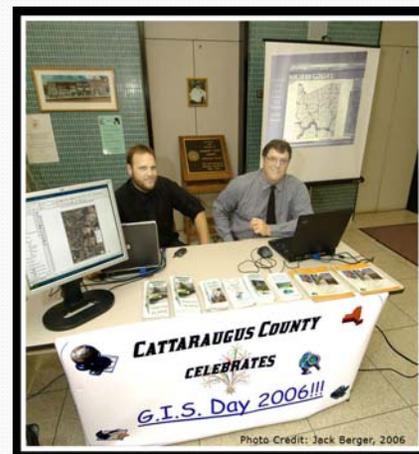
Submitted by: Brian Judycki, Instructor, Engineering Technologies & Trades Department

bjudycki@mvcc.edu

Cattaraugus County held its 3rd Annual GIS Day in the lobby of the County Building in Little Valley, NY. The County's GIS Coordinator, Daniel T. Martonis as well as Industrial Program Specialist, Joseph J. Williams were on hand all day to demonstrate the county's GIS capabilities. Maps were displayed showing the numerous projects that have been accomplished or enhanced by the use of GIS, such as the Zaepfel Nature Center project, the Pat McGEE trial map, maps from the Town of Great Valley's comprehensive plan, and more.

A GPS receiver was on hand to demonstrate how the county collects its GPS data.

Two computers were on display--one showing a PowerPoint presentation of various GIS projects; while another was used to show the county's online ArcIMS: parcel viewer, polling/voting districts, & mosquito spraying maps (www.cattco.org) along with the new Pictometry images throughout the County.



Multiple brochures that were created with the help of GIS & GPS were on display for the taking. These brochures included snowmobile trails, Amish locations, hiking trails, DEC fishing locations, and more. The County plans on continuing this tradition into 2007 and beyond.

For more information contact Daniel Martonis at dtmartonis@cattco.org.

2006 New York State GIS Day Events

IAGT and Cayuga Community College Celebrate GIS Day

On November 15, 2006, the Institute for the Application of Geospatial Technology (IAGT) and Cayuga Community College (CCC) held a community-wide GIS Day Open House on the college's Auburn, NY campus. GIS professionals and educators were invited to demonstrate how they apply GIS to projects beneficial to the community. Among them were Nick Colas, Associate GIS Analyst from the Cayuga County Planning and Development Office; Bernie Corcoran, Supervising Tax Map Technician, and Glen Seamans, GIS Technician from the Cayuga County Real Property Office; Ron Grube, Assistant Professor of Geography and History; and John Lamphere, Assistant Professor of Criminal Justice and History.

Several IAGT staff members guided guests through hands-on/interactive GIS exercises. A poster gallery showcasing several of IAGT's current projects was also featured.



Guests at the GIS Day 2006 Open House at Cayuga Community College stop by to observe IAGT's Exhibit booth. Looking on behind them, GIS Technician Mike Scott stands ready to field questions

CCC's Admissions Office staff distributed information about the college's associate degree program in GIS. (An advantage that CCC GIS students have is that IAGT is located right on the Auburn campus, and has an internship program). At the conclusion of the event, IAGT's CEO, Robert Brower, spoke about careers that utilize GIS.

Along with being informative, the event was fun—featuring prizes and—of course—a cake decorated with the GIS Day logo!

For more information contact Beth Miller: bmiller@iagt.org



GIS Communications and Outreach

Looking to find a local GIS Users Group? Interested in contributing to GIS related electronic discussion lists? Then the NYS GIS Clearinghouse Communications webpage has the information that you are looking for. Here, you will find links to many different electronic discussion email lists, as well as links to and contact information for the many GIS user groups across New York State.

<http://www.nysgis.state.ny.us/comm.htm>

Warren County Celebrates New York State GIS Day



On November 15, 2006 another successful GIS day was celebrated in Warren County this year. Activities at the County Municipal Center included a "GIS in Action" map gallery showcasing how GIS has assisted different departments and municipalities, a Geography Quiz, home maps for employees, and a



raffle.

Presentations were given at Glens Falls High School focusing on GIS in earth science and biology. Each student received a packet containing a brochure (GIS as a career), CD with ArcExplorer and tutorial exercises, and city layers.

For more information contact Sheri Norton, GISP, Warren County GIS Administrator:

nortons@co.warren.ny.us

2006 New York State GIS Day Events

GIS Day was celebrated on the Cornell University campus on November 8 (a bit ahead of the official date). This event attracted presenters and GIS enthusiasts from the various academic and administrative departments at Cornell, as well as the



City of Ithaca, Tompkins County, and the surrounding area.

A morning workshop on "GPS Technology and Geocaching," organized by Michelle Thompson (Dept. of City and Regional Planning, Cornell) and Karen Edelstein (Finger Lakes Institute, Hobart and William Smith Colleges), was held at Uris Library. Later, in the afternoon, a poster session at Mann Library featured over 20 posters exploring a wide range of projects, such as South African wetlands, local food pathways, economic zones in the Philippines, stormwater runoff, Great Lakes watersheds, and New Orleans neighborhood planning.

After a drawing for prizes, generously donated by the Cornell University Library, the Cornell Store, and Manifold, GIS Day at Cornell culminated with a keynote talk by Mark Monmonier (Dept. of Geography, Syracuse University), the prolific, award-winning author of books that explore the intriguing social life of cartography. Monmonier presented "A Brief History of Geospatial Technology: Customization, Control, and Unintended Consequences".



Audio and video of his talk will be made available on the Mann Library GIS Day 2006 webpage:

<http://www.mannlib.cornell.edu/services/reference/GIS/gisday2006.cfm>

For more information contact Keith Jenkins at kgj2@cornell.edu.

NYS GIS Help Desk

The New York State GIS Help Desk, <http://www.gishost.com/gishelpdesk/> is administered by the NYS Office of Cyber Security & Critical Infrastructure Coordination and sponsored by the New York State GIS Coordination Program. This web-based help desk is intended to provide support for both general GIS questions and specific questions regarding the technical use of the following GIS software products:

ArcGIS Desktop: ArcView
 ArcGIS Desktop: ArcEditor
 ArcGIS Desktop: ArcInfo
 ArcInfo Workstation
 ArcView GIS 3.x
 ArcIMS (v 9.1 and later)
 MapInfo Professional
 MapXtreme (2005 and Windows)



Visitors can search the online **Knowledge Base** to view previously submitted questions and answers or view the Help Desk's most **Frequently Asked Questions**. Residents of New York State may **Submit** GIS technical questions which will be answered within one (1) business day. All questions and answers will also be included in the searchable knowledge base. For assistance in the use of the NYS GIS Help Desk, visitors can select **Help** from the options on the left.

Who's Who in GIS

Who's Who in GIS directory is a listing of GIS professionals and their contact information. If you would like to be added to this directory, or if you are currently listed in this directory and wish to update your contact information, please visit the following URL: <http://www.nysgis.state.ny.us/outreach/whoswho/>

Unlocking Antiquity Using GIS Technology

Over the last year and a half, Dr. Christopher Ratté, formerly a professor at New York University (NYU), began an initiative to implement Geographic Information Systems (GIS) technologies in the collection and mapping of archeological finds in the Aphrodisias valley in the country of Turkey. By the summer of 2006, Frank LoPresti had organized a budding GIS program operated by a small. While some of the team traveled to Aphrodisias to oversee the GIS work, others remained in New York to create and launch a website that uses ESRI's ArcIMS mapping software to display Aphrodisias data.

Once in Aphrodisias, the team focused on geographical data capture and development through the use of Trimble Global Positioning System (GPS)/Mobile GIS units and ESRI software, including ArcGIS, ArcPad, and Spatial Analyst. Accurate latitude and longitude readings of all significant archaeological finds were taken and high quality contour maps were created using elevation points collected in the field.

Throughout the summer, the majority of the team's time in the field was spent doing high and low intensity surveys of ancient citadel and farmstead sites by creating high quality contour and transect maps. Using the GPS units, the team members were able to capture several thousand elevation points over the entire site. These points were later processed using the ESRI Spatial Analyst tools to create extremely accurate elevation rasters and vector contour lines. With these sites well mapped, high quality transect maps could be produced for the site, which enabled greater accuracy in the analysis of pottery shard density survey results of the area. In addition to creating contour maps, the team used GIS modeling technology to aid in the search for citadels and aqueducts.

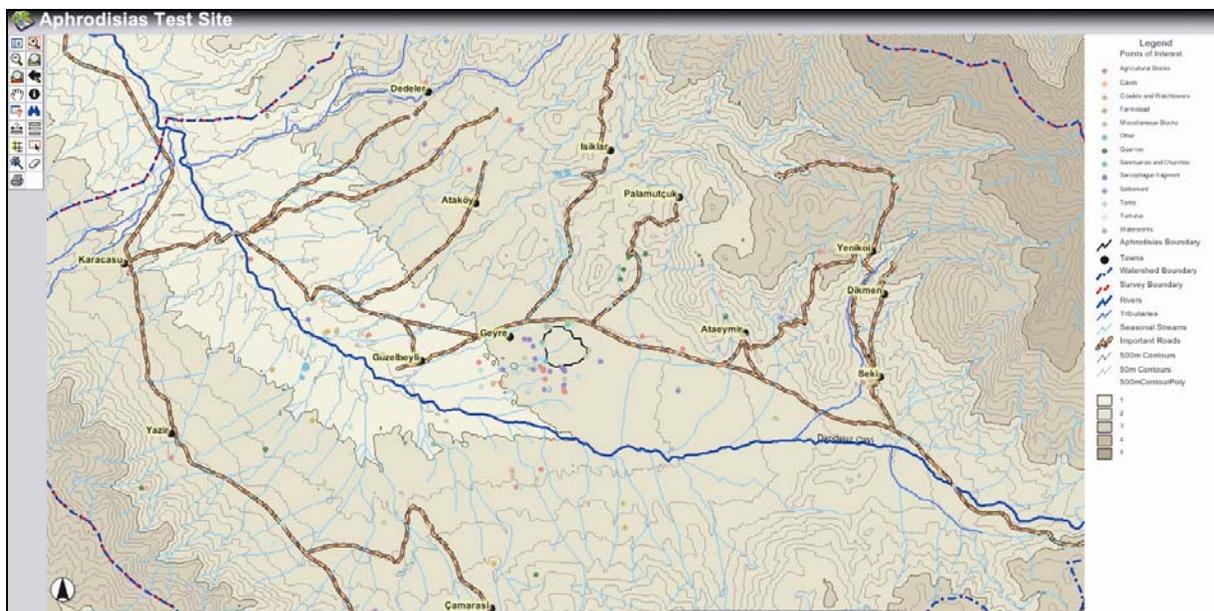
CITADELS

Several citadels, whose primary function was to serve as watchtowers, and fortifications had been found around the Aphrodisias survey region prior to this project. Existing information about these structures was used by the team to develop a GIS model for locating other towers and citadels in the region. First, all currently known tower locations were analyzed to determine the elevation range of the known watchtowers. ArcGIS software was used to compute the slope of the terrain on which each of the towers was built. Given the slopes of all known citadel locations, an optimal slope range for ancient watchtowers was selected.

A line of sight analysis was performed on the six known tower locations to determine which areas of the valley are least visible to the known outposts. Another line of sight analysis was then performed to determine areas that overlook the less visible parts of the valley. In addition, since ancient watchtowers often have direct line of sight to each other, locations around Aphrodisias were identified that have a line of sight to the known tower locations.

Results of the slope, elevation, and line of sight analysis were combined to identify probable tower locations. Areas that fell within the optimal slope and elevation range were selected, and of these areas, locations that had line of sight to the valley and to other towers were identified. Finally, a GIS map was produced to display areas that satisfied the conditions for probable locations.

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Unlocking Antiquity Using GIS Technology *(continued)*

(Antiquity...Continued from page 7)

field season in Aphrodisias, two of the areas suggested on the map were explored, resulting in the discovery of a fortification and two nearby settlements in the southeast region of the site.

AQUEDUCTS

Several portions of Greco-Roman aqueducts have been found in the Aphrodisias survey region. However, these portions are disjointed and the full paths of the aqueducts are unknown. Previous research on aqueducts, as well as the topographical data of the Aphrodisias region collected with GPS units, were used to predict possible paths connecting the already-discovered aqueduct pieces.

In addition, a cost model was constructed to assign a relative cost of building an aqueduct through each cell of the region's elevation raster. This cost was assigned based on the assumption that Greco-Roman aqueducts had trivial costs at optimal slope ranges of -1% to 3%. Areas with higher and lower slopes, however, were assigned exponentially higher costs. A cost path algorithm was then performed to map the least costly paths between the known aqueduct portions in Aphrodisias. This aqueduct analysis project is an initial proposal for sites that can be investigated in future years of the survey.

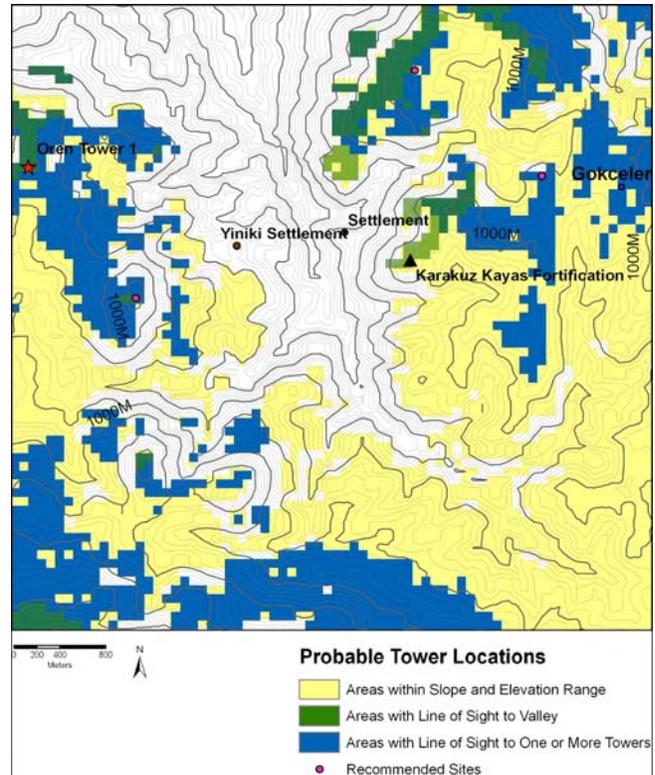


Jaime Martinez uses the Trimble Mobile GIS units to capture points for the creation of contour maps.

ARCIMS

Through the use of Internet Mapping Services (IMS), data retrieved from the Aphrodisias site can be globally shared in a user-friendly map format. This is made possible through products such as ESRI's ArcIMS, which enables the delivery of dynamic maps and GIS data and services via the Web, without viewers needing any mapping software.

Though still in the early stages of development, the Aphrodisias test website (www.nyu.edu/its/statistics/aphrodisias/) currently allows you to view the discovery location of archeologically significant finds through various tools. While the website's current features provide at least some information on all of the significant finds to date, eventually you will be able to easily access hundreds of photographs and thorough descriptions of all the points of interest within the valley surrounding Aphrodisias. Be sure to check back to the website periodically as it is updated and redesigned over the coming months.



*Analysis results of probable citadel locations.
Prepared by Stacey Kuznetsov*

Editor's note: Due to its length, this article has been edited. The original article, in its entirety, can be found online in the Fall/Winter 2006 issue of "Connect: Information Technology at NYU":

www.nyu.edu/its/pubs/connect/fall06/.

For more information, please contact Frank Lopresti:
Frank.lopresti@nyu.edu

A Report on the National Forum on the Critical Issues in Geospatial Technology Education

Participants came from twenty one states to participate in the National Forum on Critical Issues in Geospatial Technology Education in early January 2007 in Monterey, California. Three participants from New York State academia in attendance included Professor Eileen Allen, GISP, from Plattsburgh State University; Dr. Abu Badruddin from Cayuga Community College; and GIS Instructor Robert Lord from Niagara County Community College.

Project Summary

Geospatial technology is a rapidly expanding industry that crosscuts nearly every discipline and every sector of our economy. Currently, no Advanced Technology Education (ATE) Center or Resource Center specifically addresses Geospatial Technologies (referring to Geographical Information Systems (GIS), Global Positioning Systems (GPS), and Remote Sensing (RS)), even though geospatial technologies are becoming essential to many of the economic sectors that existing ATE Centers address. Each year the National Science Foundation (NSF) funds new GIS-related projects under numerous directorates, but coordination among the Centers and projects involved in GIS/Geospatial Technologies is limited. As a result, efforts are often duplicated while emerging areas of opportunity may be overlooked.

The primary goal of this project is to develop a vision and a plan for a national geospatial technology resource center in order to facilitate the development of curriculum, network technical expertise, and serve as a clearinghouse for products and services that will meet the needs of students, educators, government, business, and industry across a wide spectrum of disciplines. This project will form a steering committee of leaders in geospatial education to research issues critical to industry and education. These issues will include workforce needs, geospatial core competencies, certification, curriculum, pedagogy, educational pathways (including articulation and internships), professional development, communication, geospatial awareness and diversity, globalization and regionalize, future trends, and the qualities of a successful ATE Center.

The Forum

Forum participants read several new geospatial and educational reports prior to attending the forum. The most significant document was the 'Body of Knowledge' on Geographic Information Science and Technology (GST) from the University Consortium for Geographic Information Science (UCGIS). The Body of Knowledge included more than 330 topics organized into seventy-three units and ten knowledge areas. Each topic is defined in terms of formal educational objectives from which instructional activities and assessment instruments can readily be derived. It was agreed that community colleges would base the content of their courses on those objectives contained in this document. A separate report, with the standards to be selected for community colleges, would be produced at a later date when funding is acquired.

Additionally, the project steering committee identified eleven critical issues for Geospatial Technology, to which the participants responded. The responses to these critical issues will be posted on the internet at <http://www.geotechcenter.org/>

Project Goals

This project advances the knowledge and understanding of a myriad of issues critical to geospatial technology education. These efforts will help identify barriers to effective geospatial technology education and provide a plan on how best to remove them. Additionally, this project will bring the geospatial technology education community closer together, which will enable community college educators to more effectively and efficiently meet the geospatial technology education and training needs of our workforce. It is anticipated that a geospatial technology resource center will be proposed in the near future. These efforts will pull together a diverse group of partners, solidify communications, build consensus and provide a roadmap for the implementation of that new center.

Goals for New York

The three participants from New York State agreed that submitting an application to NSF to host an ATE for Geotechnology, perhaps as either a national center, a regional center or even a resource center, was an achievable goal for New York State. It was noted that New York State has no ATE center of any type (see below).

Submitted by Robert Lord, Instructor, Niagara County Community College:

Rlord@niagaracc.suny.edu

More information about the National Geospatial Technology Resource Center can be found online at <http://www.geotechcenter.org/>.



NEW ATE AWARDS FY1998

127 proposals received

42 awards made: 4 centers (*), 36 projects, 2 special projects

NYS GIS Conference

**NYS
GIS
2007**

23rd Annual Conference

October 1-2 2007
Holiday Inn Albany – Albany, NY
<http://nysgisconf.esf.edu/>

The New York State Geographic Information System (GIS) Conference has become a major GIS professional development opportunity for hundreds of GIS users across the State. This year, the 23rd NYS GIS Conference is being held in Albany, NY at the Holiday Inn Wolf Road. The conference is a great place to discover how New York businesses, government organizations, academic institutions, and not-for-profit entities are using GIS to accomplish important objectives. Technical presentations featuring working professionals will share their GIS experiences and solutions in dealing with real world problems like yours and detailed presentations by the state's academics will provide a deeper understanding of the technology. In the exhibit area, GIS vendors and consultants will display the latest in GIS hardware, software, analytical techniques, and services. Additionally, prizes will be awarded for a Poster Contest. Winners will be decided by a panel of cartography experts from the academic, federal, state, local and private sectors. Conference attendees will also be able to vote for their favorite poster. Early conference registration with reduced fees and poster submissions will be accepted up through September 6, 2007. More information about the NYS GIS Conference can be found online at <http://nysgisconf.esf.edu/>.



Public Version of the NYS GIS Streets Data Now Available

The NYS Office of Cyber Security & Critical Infrastructure Coordination (CSCIC) is pleased to announce that a public version of the NYS Streets data set is now available on the NYS GIS Clearinghouse. The data was first made available with the October 2006 NYS Streets data maintenance release and includes two different public versions of the NYS Streets data set:

One version is the Statewide NYS Streets data set, which includes all street names, alternate/alias street names, route numbers, topology, and unique segment IDs. In order to meet our contractual obligations, this does not contain address and routing information. Currently this version is only available in Shapefile format but plans are to make it also available in ESRI Geodatabase and MapInfo TAB formats.

The second version is a simpler version of Statewide NYS Streets data set that is optimized for efficient display and labeling. This version contains only a very few attributes and the topology has been minimized by dissolving on the FullStreetName attribute. Quarterly releases of these files are available on the NYS Streets Data Set Details Page (<http://www.nysgis.state.ny.us/gisdata/inventories/details.cfm?DSID=932>). The user must agree to a click through license before they are allowed to download the data. Comments on the usability of these new data sets are welcome and can be sent to us at nysgis@cscic.state.ny.us. NYS GIS Data Sharing Cooperative members can access the complete NYS Streets data set and all other CSCIC data sets at (<http://www.nysgis.state.ny.us/gisdata/inventories/member.cfm?organizationID=522>).

Files available to the Public

Files	Download
Statewide – Streets Public	SHAPE (updated quarterly)
Statewide – Simplified Streets for Labeling	GEODATABASE (updated quarterly) SHAPE (updated quarterly) TAB (updated quarterly)

CSCIC continues to develop an on-going data maintenance program based on the data users' participation. Several different maintenance options that minimize the amount of effort required by program participants are being piloted across the state with much success. State and local government agencies interested in participating in data maintenance should contact John Borst (john.borst@cscic.state.ny.us) or Cheryl Benjamin (cheryl.benjamin@cscic.state.ny.us) to discuss how they can assist with keeping the data up-to-date.

As always, your input on any problems encountered while using the data is encouraged as it greatly helps us to improve the quality of the data and geocoding solutions for everyone. Please let us know if you have any questions or comments by contacting us at nysgis@cscic.state.ny.us.

The Giving Map

Last December, the 2006 version of the Giving Map (<http://www.agishost.com/givingmap/>) was released. This is a simple, web-based mapping application highlighting locations in New York's Capital District where donations of food, money, clothing, or time could be made during the holiday season. Information on a charity's name, address, phone number and items accepted, are referenced at each location.

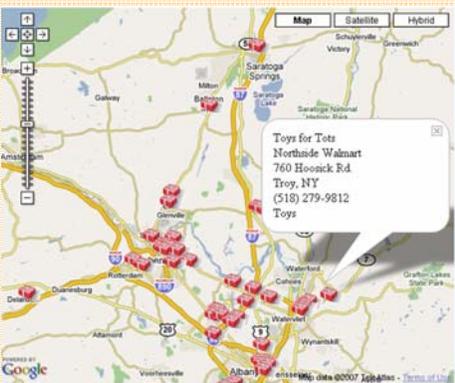
"Working with this powerful technology everyday, it's easy to lose sight of the many potential non-business uses of GIS. This project gave us an opportunity to illustrate a less traditional application of geospatial technology without dwelling on the bottom line cost/benefit," said company president, Austin Fisher.

The original concept of the Giving Map was developed in 2001. At that time, a hardcopy map was displayed in the storefront of FSI's (then Applied GIS, Inc.) headquarters in Schenectady, NY, and a web based application was made available via the Internet. This year, FSI decided to develop the Giving Map with the Google Maps API. This approach was very easy to implement, and had no direct costs (other than staff time). It also leveraged Google Maps' well recognized and user-friendly interface.

The most time consuming aspect of this project was developing the database of organizations accepting donations. A single source for this information was not identified, and so a variety of techniques were used to compile these data including phonebook and Internet research, telephone calls, and networking. While sufficient to support the Giving Map, the resulting database is still not considered comprehensive, and updates are being added as they are identified.

FSI plans to continue to develop and improve the Giving Map in coming years, and will explore other alternative uses of GIS technology.

For



Click on present icons to locate DONATION LOCATIONS and addresses
Use controls on left side of map to zoom in, zoom out and pan map

more information contact Austin Fisher at austin.fisher@fountainsamerica.com.

Carthage High School Takes GIS to the Next Step

The mapping partnership between Carthage Central High School, River Area Council of Governments (RACOG), and the Tug Hill Commission was started when Carthage Central High School contacted the Tug Hill Commission looking for a real life project for their new "Introduction to GIS" class. The Commission was soon afterward able to find a project that would fit what the school was looking for. The RACOG Recreation Committee was looking to produce a map with all its existing recreation trails, but discovered that there was no digital documentation of them. At the time, the Commission was working with RACOG, a 4-member inter-municipal cooperative, to develop the mapping project. The Commission was then able to partner RACOG with the school as a means to get the trails documented.



The Commission provides technical assistance to the ongoing mapping project and to the partnership to help with any GIS or GPS questions that may arise. They also help to relay information between the school and the RACOG when needed. For the most part, the Commission tries to act primarily as a resource that can be called upon when needed, otherwise it lets the school and RACOG work directly with each other. Carthage Central High School has been offering the full year science elective in GIS for several years. The design of this inquiry-based course moves from the general concept of a GIS to specific capabilities of the course software. The major course objectives include defining a GIS with examples, identifying how a GIS may be used to display information, using a GIS to discover relationships in data and, ultimately, creating new data for use in a GIS. An integral part of this course is the ability to participate in meaningful scientific and/or community-related GIS projects as a capstone experience.

The partnership with RACOG and the NYS Tug Hill Commission has provided real life experiences for GIS students in allowing them to create authentic datasets as part of a solution to real problems. This continues to be a positive asset to the

(Continued on page 12)

(Carthage High ...continued from Page 11)



instruction in the high school GIS course; in fact, it has become a focal point. The RACOG Recreation Committee determines the area of trail documentation as well as deciding the trail attributes to be included. Students then take to the trails, armed with recreational grade Garmin GPS units and clipboards to record the trail locations and various attributes. This data is converted to electronic form, applying data management techniques learned in class, and then sent to NYS Tug Hill Commission for final processing and map distribution to the RACOG Recreation Committee members. Discussions and decisions concerning trail placement, costs and other factors are then facilitated by the use of these partnership maps.

The school has recently acquired a Thales Mobile Mapper Pro mapping grade GPS with post-processing. This addition opens a new avenue of documentation, as it will possibly improve the horizontal accuracy of documented positions. This resource is currently being used in the GIS course.

This partnership has been ongoing for the last three years. It is partnerships like this that help mold the future leaders of the GIS industry and our country with real life work experiences in the field.

For more information contact Mickey Dietrich at Mickey@tughill.org.



New York State GeoSpatial Summit 2007

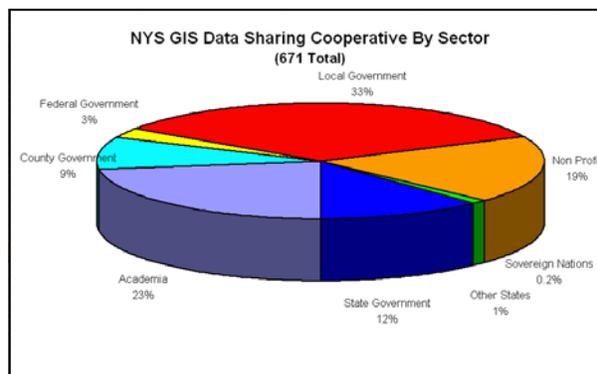
The New York State GIS Association and the New York State GIS Coordination Program are pleased to announce the second annual New York State GeoSpatial Summit. The Summit will be held on Friday June 8, 2007 at The Welch-Allyn Lodge in beautiful Skaneateles, NY (<http://TheLodge.WelchAllyn.com>). The event is targeted for GIS professionals who want to look beyond the technical issues and hear what's really shaping GIS in NYS and around the country. Also new this year will be an evening reception at the Lodge on Thursday, June 7th. More information about the New York State GeoSpatial Summit can be found online at <http://www.nysgis.org/summit/>.



These and other GIS-related events in New York State can be found online at the NYS GIS Calendar of Events: <http://www.nysgis.state.ny.us/outreach/calendar/>

GIS Data Sharing Cooperative Still Growing

Membership in the NYS Data Sharing Cooperative has shown a steady increase with more and more governmental entities, not-for-profits, and academic institutions signing the Data Sharing Agreement, allowing each other to share their GIS data sets. The number of Cooperative Members is at the time of this publication an all-time high of 671. A breakdown of Cooperative members by sector is as follows:



Old Forest Mapping and Preservation Partnership

On October 23, 2006 at the New York State GIS Conference, the Old Forest Mapping and Preservation Partnership received the New York GIS Coordination Program's 2006 GIS Partnership Award. This award, given annually by the NYS GIS Coordination Program, recognizes a new, innovative, and diverse partnership that increases the use of GIS technologies in New York State.

The Old Forest Mapping and Preservation Partnership is a collaborative effort among the Hobart and William Smith Colleges (HWS) Environmental Studies Program, the Finger Lakes National Forest (US Forest Service), Finger Lakes Forest Watch and Friends of the Forest (local citizen advocacy organizations), the Finger Lakes Land Trust (a regional environmental conservation group) and Hobart and William Smith Colleges' Finger Lakes Institute (FLI). The central goals of the Old Forest Mapping and Preservation Project are to increase GIS mapping and analytical skills of students, faculty, and local citizens concerned about forest management and protection, to produce new information to assist forest management and protection efforts in the Finger Lakes Region, and to build a strong foundation for continued collabora-



tion among forest planners and managers, faculty and students, and community members.

During the recent management plan revision process for the Finger Lakes National Forest (FLNF), a number of stakeholders have advocated strongly for the preservation of forest stands containing old trees, but a current map of the oldest forest stands on the FLNF and adjacent lands did not exist. In response to these concerns, the Partnership developed a collaborative project to map patches of old forest in the FLNF and surrounding lands between Seneca and Cayuga Lakes. This current mapping effort traces its roots to mid-2004, when Kathy Engel of Friends of the Forest and Karen Edelstein of the Finger Lakes Land Trust (who now also works for the Finger Lakes Institute at Hobart and William Smith Colleges) began talking about overlap in their interests in conservation of forest land in Central New York. Using historical land use data developed in the mid-1990s by Stephen DeGloria at Cornell University, information provided by the US Forest Service, and data from the NYS GAP Project, Engel and Edelstein undertook a new analysis of the National Forest, identifying areas of oldest forest stands.



Inspired by the power of GIS for this analysis, Engel and Edelstein teamed up with Anne Wibiralske, an environmental studies professor at HWS, to develop a new mapping effort.

In June 2005, they received a grant for a team comprised of Engel, Wibiralske, and Crystal Hans, a HWS student, to attend the Conference on Remote Sensing Education (CORSE) run by the Institute for the Application of Geospatial Technology in Auburn, NY. Grant funds were provided by the Mid-Hudson Service Learning Institute for Watershed and Environmental Studies. At CORSE, the team developed a community-based, GIS-mapping project for the Fall 2005 HWS Environmental Studies Senior Seminar. This initial project design was further refined in discussions with Finger Lakes National Forest staff and the GIS specialist at the Finger Lakes Institute. The eight seminar students, in collaboration with community and forest service partners and under the direction of Wibiralske and James Hall, then the GIS Specialist at FLI (now GIS Analyst with the firm NewFields), began mapping old forest stands in and around the Finger Lakes National Forest.

Using GIS software and a set of scanned and georeferenced historic aerial photographs dating from 1944, the students delineated areas of forested land in the FLNF and surrounding land for 1944, 1954, 1964, 1985 and 2002. Analyzing these data layers, they created a map of areas continually forested since the mid-1940s based on aerial photograph interpretation. This important new information is contributing to ongoing forest planning processes. This summer the Partnership will field-verify the map produced by the seminar students.

Article submitted by Anne Wibiralske, Assistant Director/Professor for the Environmental Studies Program at Hobart and William Smith Colleges - Wibiralske@hws.edu

Introducing High School Teachers & Students to Geospatial Technology

The Finger Lakes Institute at Hobart and William Smith Colleges recently received a grant of \$899,000 from the National Science Foundation to launch the Finger Lakes GIT Ahead Project. Focusing on geospatial information technologies (known as GIT), the project is set up to help high school teachers introduce their students to this technology as path to a high-demand career they might not have thought of before.

This project builds on expertise within a variety of organizations, schools and associations, and Jim MaKinster of the Education Department, who is co-directing the project with Nancy Trautmann at Cornell University, said that NSF was looking for collaboration and “many partners.”

MaKinster explained that the grant will help teachers develop lesson plans and involve their students in projects that use GIT and assist with developing computer software to display images in two dimensions (think Mapquest) or three dimensions (think Google Earth).

Other members of the project team include John Halfman, Professor of Environmental Studies at HWS; Marion Balyszak and Karen Edelstein of the Finger Lakes Institute; Dana Piwinski at the Institute for the Application of Geospatial Technology, and Abu Badruddin, associate professor of GIS at Cayuga Community College.

High school and middle school teachers who attend the two-week GIT Ahead summer institute learn to use geographic information systems to address relevant local environmental issues and develop watershed-focused projects to conduct in their science classes. Teachers may earn college credit or professional development credit for participating in the Institute. The first session drew 14 teachers to the HWS campus; enrollment for the 2007 session, which has been increased to 20, is filling fast.

Ann Moore, who teaches in the New Visions Environmental Science and Technology Program at Cayuga-Onondaga BOCES and attended the 2006 seminar, said, “I loved the eclectic nature and teaching styles of the GIT staff. Jim, Nancy, Karen and Michelle each have their own unique teaching style. They were a great match for a heterogeneous group of teachers. (Michelle Thompson of Thompson Real Estate Consultants in Ithaca, teaches GIS at Cornell, Columbia and several other schools, and was part of the faculty for the 2006 seminar.)

“Some of us turned on a GPS unit for the first time, others refined their technical skills and acted as impromptu tutors. The line between teacher and learner, neophyte and expert was blurred ... geospatial technology levels the (learning) playing field,” Moore added.

“I absolutely loved and appreciated the opportunity to be surrounded by such thoughtful, dedicated, charismatic teachers. This experience was one of the highlights of my professional development experience.”

The first week of the institute has teachers attend the Conference on Remote Sensing Education, held at Cayuga Community College in nearby Auburn, and includes introductory information for those not as familiar with GIT. The second week, on the HWS campus in Geneva, N.Y., concentrates on developing curriculum. Follow-up workshops are held during the year after the institute, to support the teachers with tools, techniques, and resources in lessons and planning.

In addition to professional training for teachers, GIT Ahead provides career-related opportunities for high school students: more than a dozen who have completed their junior year will work during the summer in nearby businesses, government offices and non-profit agencies, getting a taste of what’s available in a field they might not have thought about before. The summer internships are arranged in collaboration with the New York State Geographical Information Systems Association.

This introduction will show students what’s offered in the GIS associate’s degree program at Cayuga Community College. Bachelor’s degrees in GIS are offered at State University College at Cortland, among other places, and graduate courses in it are taught at the State College of Environmental Science and Forestry at Syracuse University.

Moore said she’s already putting the training to practical use. Her current projects include delineating the wetland boundaries at Owasco Flats, in conjunction with Sandie Doran of the U.S. Fish and Wildlife Service, mapping the boundary of the gravel delta on Great Gully on Cayuga Lake, creating a vegetation cover map of an urban forest near Auburn and mapping the hiking trails and vegetation changes at Goodnow and Rondaxe mountains in the Adirondacks.

In the planning stage is a collaboration with CORALations, a not-for profit group on the Isle de Culebra in Puerto Rico, where they’re looking at using GPS to map the boundaries of coral reef restoration areas and leatherback turtle nesting sites.

MaKinster concluded, “This project is an excellent example of how the Finger Lakes Institute can serve as an umbrella, under which various organizations and entities come together to create and sustain new and meaningful collaborations.”

Reprinted with permission from the Pulteney St. Survey.

For more information contact at Fred Schühle at SCHUHLE@hws.edu.



Map-Analyze-Plan, Upstate New York (M-A-P:UNY) Continues To Move Forward

The Neighborhood Preservation Coalition of New York State, Inc. (NP Coalition) continues its commitment to our large scale project to Map, Analyze and Plan all Upstate New York (M-A-P:UNY) counties using Geographic Information Systems (GIS) data, specifically integrating Real Property System (RPS) data.

RPS data currently provides baseline information on housing conditions to local assessors, Real Property Tax service agencies and county planning and regional planning organizations. By giving community-based organizations (CBOs) access to this specific data set, they can begin to analyze, add to or reevaluate their community's housing and land use conditions, their comprehensive plan or their own strategic plan.

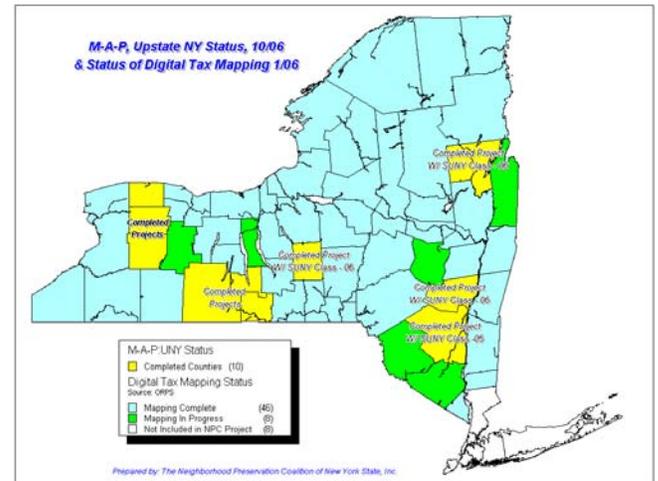
NP Coalition's mission is to advocate for and to provide technical assistance to community-based organizations and their stakeholders statewide. The NP Coalition envisions that planning entities, banks, nonprofit groups, local and county governments will utilize this valuable source of information to begin a meaningful dialogue about community planning, neighborhood and rural revitalization. This ambitious project has presently completed ten Land Use and Housing Condition atlases throughout upstate New York [see map]. The three most recent atlases, completed by a graduate planning class at SUNY/Albany summer of 2006 which was taught by Mr. Breglio, can be seen and downloaded [in PDF format] at:

<http://www.nysgis.state.ny.us/coordinationprogram/reports/partnerships/partners/mapuny.htm>

Daniel Dineen, the Director of the Cortland County Planning Department, had this to say for the atlas that the class completed for his county this past summer "...these documents will be an invaluable tool for municipal officials, assessors, realtors, and other organizations that use this information on a daily basis. Thank you for providing this data to Cortland County in a clear, concise manner." Bob Breglio looks forward to completing several more counties this summer with his GIS class and feels that making future planners and geographers more aware of currently available data, specifically RPS data will make for more widespread usage of the data as these students begin their careers in upstate New York. This will in turn lead to better data being in the RPS system as assessors more fully realize the potential of the data.

In a unique partnership with the MapInfo Corporation, the NP Coalition is offering ten MapInfo software packages (valued at \$1,500.00) to ten community-based organizations (CBO's) who are community development practitioners and whose mission is to develop affordable housing. The software license is valid for one year at which time the CBO will have to purchase a maintenance agreement from MapInfo.

MapInfo has also agreed to provide training for 1-2 staff persons at their training facility in Troy, NY only for the opportunity to learn MapInfo (valued at \$800.00), based on availability of seating. Awardees of the MapInfo software grant will: develop their staff's capacity in mapping, data collection and planning; evaluate and strategize housing development and rehabilitation needs in their service area; and use the data and maps as visual tools for stakeholders, for building partnerships and for internal program



After a group receives basic training from MapInfo, they will then have access to individualized trainings with Bob Breglio, the NP Coalition's GIS Specialist to begin having their service area mapped using RPS data. He will teach the group to utilize RPS data for their particular service area and can also train with other data sets such as Census Bureau data, etc. Mr. Breglio has a Master's Degree in Education, Master's Degree in Urban and Regional Planning, is a Town of Broome (Schoharie County) elected Assessor and a sole assessor in the Town of Olive, Ulster County as well as Secretary of his town's Planning Board. He is also a member of the Coordinating Body of the GIS Clearinghouse hosted by CSCIC. He brings teaching, planning, assessment, and mapping expertise to the project. He has worked with hundreds of non-profits to assess and analyze their service area.

Following the individualized training, the awardees will then have hands-on access to their own data, increased skill levels and will be better able to market their own services and products. The CBO will be able to map and analyze their service area(s) as housing conditions change or land use changes.

M-A-P:UNY is an outgrowth of two Land Use and Housing Condition Atlases that Mr. Breglio completed for Steuben and Chemung counties. The community groups, the Regional Planning Associations, the counties and the local housing groups have all utilized this information to systematically plan their revitalization efforts. At the present time, ten counties have had a land use and housing atlas created. See

<http://www.nysgis.state.ny.us/coordinationprogram/reports/partnerships/partners/mapuny.htm> for the most current atlases.

For more information contact Bob Breglio at b.breglio@npcnys.org.

New York State Orthoimagery Program

NYS Digital Orthoimagery Program

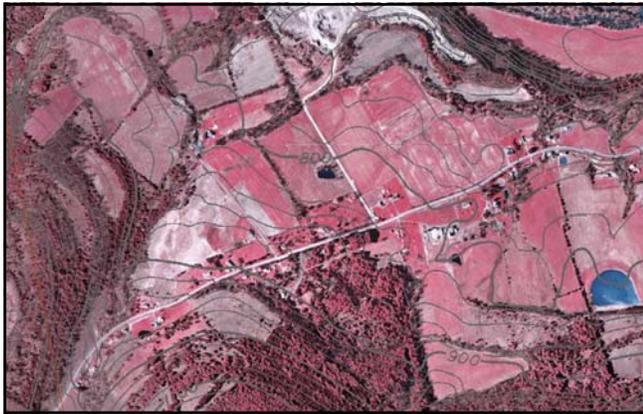
Orthoimagery from Lot 6 is in QA/QC with the first delivery to counties to begin in late February. New imagery should start becoming available on the Interactive mapping Gateway in early March as work progresses. Most of the Lot 6 imagery should be available on the Clearinghouse by the end of June.

Imagery in New York City will be available to New York State and New York City agencies with limited distribution to members of the New York State Data Sharing Cooperative.

Interactive Mapping Gateway Enhanced

The following enhancements have been made to the New York State Interactive Mapping Gateway:

- Orthoimagery is now visible at 2 miles across the map window (previously 1 mile across).
- The NYS Street Centerline file has been incorporated into the gecocoding process used in the Gateway. Street address searches will now be based on this file and will produce more accurate results.
- Elevation contours have been added as a viewable map layer. The contour layer is taken from the NYS Dept. of Transportation 1:24,000, raster topographic 7 ½ minute quad maps. Users can now get a snapshot of the landforms displayed in the map window. The contour layer is visible in the map window from 0.5 to 3 miles.



Color infrared (CIR) orthoimage with NYSDOT elevation contour lines

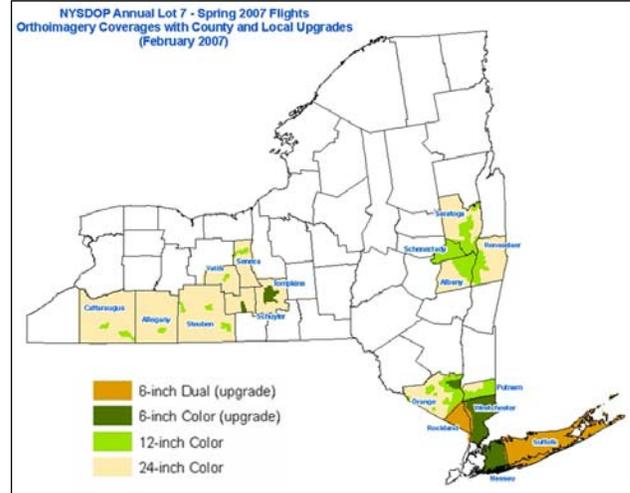
Annual Lot 7 and Beyond

Flight planning is currently underway for the Spring 2007 flying season. Western and Central counties in the state that have not been flown since 2002 will be updated, as well as 10 counties with 2004 vintage photography.

Several counties have sponsored significant upgrades to the NYSDOP base program of 1 foot color in urban areas and 2 foot color in rural areas. Nassau, Rockland, Suffolk and Westchester counties have all funded upgrades to ½ foot GSD (1 pixel is equivalent to ½ foot on the ground). There were also several upgrades funded at the local level.

Areas to be flown in 2008 are tentatively in the Adirondacks (2003 vintage), New York City and the Buffalo area. Letters are expected to be distributed to the counties involved in late Spring 2007.

Submitted by Ray Faught (Ray.Faught@cscic.state.ny.us)



Special thanks to the contributors to this issue: Joe Salo (NYS Department Of Transportation), Brian Schrantz (Southern Tier West Regional Planning & Development Board), Brian Judycki (Mohawk Valley Community College), Daniel Martonis (Cattaraugus County), Beth Miller (The Institute for the Application of Geospatial Technology), Sheri Norton (Warren County), Keith Jenkins (Cornell University), Frank Lopresti (New York University), Rob Lord (Niagara County Community College), Austin Fisher (fountains America, inc.), Mickey Dietrich (NYS Tug Hill Commission), Cheryl Benjamin (NYS CSCIC), Anne Wibiralske (Hobart & William Smith Colleges), Fred Schühle (Hobart & William Smith Colleges), Bob Breglio (Neighborhood Preservation Coalition of New York State) and Ray Faught (NYS CSCIC).

Associate Editor: John Borst
Editor: Eileen Guild

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