**FROM OUR CHAIRPERSON**

**JIM DALY**

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Do you know any professions that celebrate their own day? Well, for starters, we do! Since 1987 GIS Day has been held on the Wednesday of Geography Awareness Week, which is sponsored by the National Geographic Society to promote geographic literacy with emphasis on educating children. This year it will be held on November 19th and LIGIS, in conjunction with Brookhaven National Laboratory and ESRI, is excited to announce we will be sponsoring a GIS Day event at Brookhaven National Laboratory.

Dr. Mary Daum, who is quite familiar with sponsoring GIS Day events, has graciously offered to lead our GIS Day Sub-committee. This event will certainly entail a great deal of effort and its success will depend on your involvement. I hope you will share with us this endeavor to provide an opportunity to expose some young minds to GIS. Please read Mary’s article in this issue for more information about this event and how you can get involved.

At our Spring meeting on Thursday,

(Continued on page 4)

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**I’m Retired & You’re Not……**

**RON GREEN - LIGIS STEERING EMERITUS**

As many of you know from my Velcro business cards, over the last 30 years I have moved through a variety of positions in Suffolk County. Now I have finally retired from my Suffolk County responsibilities to pursue GIS full time. I will perhaps see some of you more often than before as I intend to stay on in my assorted GIS rolls (LIGIS, LIARC, NYS GIS/LIS and on the NY State Data Standards Committee, etc). Although GIS isn’t the only thing I have been involved in over the years it has certainly been the most interesting and rewarding……….

**A Short History of GIS on Long Island**

While to many of today’s GIS community I am the grandfather of GIS, in truth I’m just another one of the first generation of GIS users (after the Earth cooled and the dinosaurs died we used ArcInfo 4.1 & ArcView 1.0 to stay clear of the active volcanoes). Few of you probably know that the founder of LIGIS, 16 years ago, was in fact Ed Oaksford of the United States Geological Survey {1987-1988}. John Stonebanks {Suffolk County Water Authority (SCWA), 1988-1989} and I {Ron Green, Suffolk County Department of Health Services (SCDHS), 1989-1990} traded the post of Chairperson back and forth until Dennis Jackson {New York State Department of Environmental Conservation, 1990-1991} took over the reins. The position of LIGIS chairperson, by the time Alan Scott {SCWA, 1991-1992} left Long Island and I once again filled the role {1993}, had acquired a reputation that leaving your job and holding the position were one and the same (my departure from SCDHS in 1993 capped a string of five LIGIS chairs departing their jobs in six years). Fortunately this streak was followed by ten years of relative stability while Joe Jones {Nassau County, 1993-1996}, Mary Daum {Brookhaven National Lab, 1996-2000} and Jeff Altorfer {SCWA, 2000-2003} all quite proficiently chaired LIGIS. Come to think of it, now that Jim Daly is at the helm, I do feel like a grandfather (hey, I remember when we hired that kid)!!!

**But Enough About The Past**

The ESRI breakout will be my chance to go over the new enhancements of ArcGIS 9.x with some special attention to mobile computing. We hope to follow up any interest generated with a LIARC meeting (and perhaps a Dr’s office) in June hosted by Suffolk County Community College.

At any rate, as you can see by my picture, retirement hasn’t slowed me down one bit. I’m hard at work. See you May 6th. - RG*
Southampton Uses Customized Mobile GIS Software to Streamline Field Data Collection

NAT NORTON - VANASSE HANGEN BRUSTLIN, INC.

Geographic Information System (GIS) technology is recognized as a powerful data creation and analysis tool that helps governments perform a variety of diverse tasks, from developing and maintaining infrastructure to complying with environmental regulations and fighting crime. Global Positioning System (GPS) technology is a popular and timesaving navigation tool that is fast becoming a fixture in cars, boats, planes and handheld computers. Both of these technologies can help governments run more efficiently, however they are often used independently of each other. GIS is most commonly associated with in-office use, and GPS is recognized as a field data collection tool and navigation device.

Until now, a common data collection practice has been to use GPS in the field to collect point data, bring it into the office, export it to a format that can be read by a GIS software system and import it into GIS. Once imported into GIS, skilled personnel must manipulate the data to combine newly collected or modified data with existing information.

Sound complicated? Like a duplication of effort? That may be true if you are using GIS for in-house data creation, analysis, and management, but are using traditional GPS data collection methods in the field. In today’s economy with cities and towns struggling to maintain funding levels, maximizing efficiency to conserve resources is key.

The availability of mobile GIS software that can run on small hand held Pocket PC’s is streamlining this process and changing the way data is collected. This mobile software combined with integrated GPS data receivers now permits asset managers to bring their GIS inventories directly into the field for data collection, verification and modification.

Using this method, both location and attribute data attached to physical features can be managed simultaneously. The same GIS software that is available in the office is also used in the field with the added benefits that GPS brings to the field data collection process.

The Town of Southampton, commonly considered throughout Long Island to be a pioneer of implementing sophisticated technologies, is using this method to edit and verify their stormwater collection system.

Background

The Town of Southampton started an Infrastructure Management System project in 1999. The primary focus of the system was to collect, evaluate and manage pavement condition data town wide. Also included in the project was the development of a process for the Town to collect drainage and utility data in order to meet pending GASB34 financial reporting requirements.

In 2002 the focus on drainage outfall locations became a priority as the Environmental Protection Agency’s Phase II regulations expanded the NPDES program to include small municipal separate storm sewer systems.

The Town’s GIS department started by reviewing existing as-built plans and digi-

(Continued on page 5)
GIS Day – November 2004
MARY DAUM - BROOKHAVEN NATIONAL LAB

What is GIS Day? GIS Day is a grassroots event that encourages GIS users and vendors to open their doors to schools, businesses and the general public to showcase real-world applications of this important technology. The event is principally sponsored by the National Geographic Society, the Association of American Geographers, University Consortium for Geographic Information Science, the United States Geological Survey, The Library of Congress, Sun Microsystems, Hewlett-Packard and ESRI. The goal and purpose of GIS Day is to educate children and adults about how geography and GIS technology make a difference in their lives while highlighting your organization’s GIS contribution to the community.

LIGIS is planning to partner with ESRI and Brookhaven National Lab (BNL) this year to co-sponsor a Long Island GIS Day. This will take place in mid-November and will serve as our Fall LIGIS meeting. Currently we are planning to hold GIS Day in Berkner Hall at BNL as usual. The format will include a brief opening presentation in the auditorium to introduce the concepts of GIS and an overview of how GIS is being used every day on Long Island. The rest of the day (approximately 10 a.m. to 2 p.m.) will be in the mode of a trade fair with LIGIS members and vendors of GIS products and services sharing their knowledge at display tables, booths and exhibits.

Activities during the day will be geared mainly to high school and college students to introduce them to GIS, GIS technology and the wide variety of GIS applications. All LIGIS members and their organizations are encouraged to set up booths. Posters are also invited. So far we have commitments for subject matter covering tidal wetlands, open space programs, fire prevention and GPS. We would also like to have booths with information on business, military and community applications. Since GIS Day is targeting a student audience, each booth should, if possible, include some hands-on demos to engage the interest of the young people. The possibilities are many – for example, students interested in art may enjoy learning about a program that provides end users with map templates that implement good cartographic design.

Several area high schools have expressed interest in our plans and are considering sending a small group, along with chaperones. We hope that LIGIS members who do not have a booth will volunteer to escort the students through the exhibits. We are also asking you to plan to bring a guest (or guests) with you to GIS Day; either a student or perhaps a colleague who is not familiar with GIS and all it can do.

There will be a volunteer sign-up sheet at the registration desk at our Spring LIGIS meeting. You can also talk over your ideas with (or e-mail) any member of the LIGIS Steering Committee. For more information about National GIS Day and ideas of activities that you can do with students, visit the GIS Day website at www.gisday.com.
Online Availability of New York State Dept. of Environmental Conservation’s 1974 Tidal Wetland Inventory Maps

FRED MUSHACKE – NEW YORK STATE DEPT. ENV. CONSERVATION

In 1973 the Tidal Wetlands Act (NYCRR Article 25) went into effect. The Act recognized that tidal wetlands in New York’s Marine District had certain intrinsic values to fish, wildlife and even man. Those benefits include marine food production, wildlife habitat, absorption of silts, organic material and pollution, flood hurricane and storm control, and aesthetic and educational values.

Then in 1974, in order to determine the location and extent of these valuable tidal wetlands, the New York State Department of Environmental Conservation (DEC) then contracted a vendor to classify and inventory the tidal wetlands within the marine district. The marine district’s extent is the Tappan Zee bridge on the Hudson River south to the southern tip of Staten Island and east to Montauk and Orient points and includes Fishers Island. Aerial infrared photos were acquired at low tide, in the late summer/early fall, which is the height of the tidal wetland growing season. The photos were taken within three hours of low tide at an altitude of 6,000 feet. Contact black and white internegatives were produced from the infrared transparencies. The internegatives were then enlarged to produce 40x40 inch mylar photobase maps. The tidal wetland boundary delineations and other pertinent markings (scale, wetlands description, coordinates) were added to the border of the mylar maps. Individual maps are identified on five index maps covering the marine district. A 2000m x 2000m grid system, overlaid on a 1:24,000 scale Department of Transportation map, defines the area covered by each map. Grids that contain tidal wetlands are numbered at the bottom of each grid with a six-digit number that represents New York Transverse Mercator coordinates. Each cell also shows the numbers of the aerial photos that occur within the area that the map covers.

Hard copy maps are available for viewing purposes at the DEC regional and county offices. The maps are also commercially available in paper from Nassau Suffolk Blueprinting in Hauppauge ((631) 234-0666).

During the months of December 2003 and January 2004, thanks to the efforts of DEC staff Amy Hapeman in the Tidal Wetlands Inventory and GIS Unit (East Setauket DEC office), the 40x40 inch mylar maps and five index maps were scanned with a large format 50-inch Contex scanner. All maps were scanned in grayscale mode at a resolution of 100 or 150 dpi as jpeg images. The images were then post-processed using Adobe Photoshop 7.0 to illuminate tidal wetland classifications and water bodies. Individual map file size ranges from 1mb to 7.3mb. Special thanks to Vinny Lautato of Suffolk County Water Authority who has taken the unregistered maps and will be making them available as FTP files on the LIGIS website at www.ligis.org by June 2004 (if all goes well). A link to the maps will also be available on the DEC website at www.gw.dec.state.ny.us.

These digital renditions of the official tidal wetlands inventory maps are provided for reference purposes only. They do not represent survey quality accuracy. Since tidal wetlands are living entities, changes may and have occurred. Some changes have been noted and map amendments are noted at the bottom of the affected maps; other changes have not been documented. Developmental activities in and adjacent to tidal wetlands fall under the preview of the Tidal Wetlands Land Use Regulations Article 25 6 NYCRR Part 661.
Field Data Collection Pilot Project

The Town’s GIS and Highway Department worked together with their GIS and Asset Management consultants to develop an efficient approach to collecting this field data. They chose ESRI’s ArcPAD™ software, which was customized by its consultant and integrated with GPS to streamline the collection process. This solution best fit their needs. They could check out pertinent GIS data from their network files server and load it onto handheld Pocket PCs. It would also include background data layers from the Town’s GIS inventory. The combination of having a GIS inventory on a handheld loaded with background data layers and the use of GPS would prove to be very effective.

The GIS and Highway Department staff reviewed available town-wide GIS data to determine the most appropriate background layers to bring into the field. A decision was made to use the color digital orthoimagery provided by the State of New York. They were then trained by the Town’s consultant to use the mobile data collection software. The training included in-office instruction on how to “check-out” data for field collection, conduct GPS mission planning and connect to a GPS data receiver to verify, modify, add and possibly delete information as found in the field.

Necessary equipment used for the pilot project included a Compaq Ipaq Pocket PC with an extended battery pack and additional disk space capable of storing the orthorectified aerial photos. It also included a Trimble Pro-XR sub-meter GPS receiver.

Field data collection process

The Town selected a typical representative neighborhood and began the field data collection process. Town personnel walked streets stopping at manhole and catch basin locations. Each drainage structure location was verified, moved, or created to capture its true field location, description and condition in the GIS database.

After a day of field collection the stormwater data was copied back to the Town’s network files server and “checked-in”. The customization element of the software, created by the Town’s consultant, synchronized the data collected and/or modified in the field. Every data point that was “check-out” for data collection was tested by the application to determine if any of its many attributes were modified or if the location was changed. The newly collected data and updated inventory were written back to the master database along with the date, data collector and method of location (GPS or digitized).

Next Steps

Now that the field data collection process has been defined and the software is in place, field data collection hardware is being purchased and the GIS staff can transition into more of a support role for the Highway Department. Personnel familiar with the Town’s drainage system, not necessarily a GIS technician, will use the system to proceed with data collection town wide. This approach has allowed the Town to do more with their own personnel and spend less, which is consistent with other initiatives that make use of GIS throughout the Town’s government.
The coordinating committee members represent the principal agencies and organizations within LIGIS as a whole.

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