

Special Population Planner: An Emergency Planning GIS

By Jim Kuiper and Dan Miller

Argonne National Laboratory developed and implemented an emergency planning GIS focused on special needs populations to support the State of Alabama Emergency Management Agency's Chemical Stockpile Emergency Preparedness Program. The Special Population Planner (SPP) was developed as a county-level emergency planning system with detailed, geographically referenced information about populations, facilities, potential events, emergency response resources, infrastructure, and traffic control points.

The SPP permits easy production of maps, reports, and analyses to develop and revise emergency response plans. It is a broadly applicable GIS designed to support emergency planners as they address emergency management issues.

Emergency Planning for Special Needs Populations

Planning for the needs of the handicapped is now a standard practice in the design and construction of buildings. However, much remains undone in addressing emergency planning issues for the handicapped and others – such as latchkey children – who may have difficulty responding to an emergency without assistance.

The stories of wheelchair-bound individuals in the World Trade Center on September 11, 2001 are a chilling reminder. One woman had a specialized chair that allowed her to be carried to safety from the 68th floor, while a wheelchair-bound man who worked on the 27th floor lacked such a chair. He and a friend who waited for help from emergency responders died in the collapse (HR 2001, Newsday.com 2001, WRAL.com 2001).

(continued on page 4)

Inside this issue...

New USGS liaison	2
MAF/TIGER	3
GIS in education interview	8
Dahlberg Award	9
ILGIC update	11

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Mapping the Trails of Lake County

By Richard Hilton and Keith Caldwell

Not too long ago the word "trail" would conjure up rustic images of dirt paths in state and national parks. Over the last decade in northeastern Illinois and many other parts of the country, trails have become popular and important components in recreation and transportation plans. Many miles of new trails have been created and much greater expansion is expected.

Trails serve a number of purposes for the public and enjoy wide support. There are now a number of websites that offer information about the trail system in northeastern Illinois. However, most websites deal only with portions of the overall evolving trail system. Maps, if present, vary widely in their level of detail, accuracy, and currency. It can be difficult to distinguish between what has

(continued on page 6)

The Editor's Corner

By Ruth Anne Tobias

Just back from a week in Paris, riding the Metro everywhere throughout the city. There are poster-sized maps in every 'Metropolitain' station of the subway system, bus system, and suburban trains. There is even a map of the local neighborhood, or quartier, with buildings and monuments marked, outside every Metro station. Historical information says that no building in the city is more than 500 meters from a metro stop! With 389 stations, that's a lot to put on a map, but they make it work. We never got lost. That's good communication and education.

We use maps a lot on vacation—to get where we're going and to find what we want to see when we get there. Many guide books have maps of walking tours, whether in a city or on a hiking trail. We depend on maps to help us have fun.

We use maps to integrate huge amounts of information and communicate ideas back to others. That's what we hope the posters at our spring and fall conferences will do, and why we keep asking you to set one up—so others will learn from what you are doing. Log on to www.ilgisa.org and see the first 'People's Choice Award' winner! We communicate with GIS and maps.

And K-12 teachers are using GIS to help kids learn and communicate. This newsletter issue has an interview with Ann Schickner of Springfield High School on how she started their GIS program. Then look for a feature article in the winter issue on what her students have learned and how they communicate that on their website. I think GIS in the schools is a terrific idea! A new way to educate and communicate!

Ruth Anne Tobias is Editor of Illinois GIS Notes and a Research Associate with the Center for Governmental Studies at Northern Illinois University.

New USGS Liaison for Illinois and Wisconsin

Diane Eldridge was born in Grants Pass, Oregon. In 1982, she received a B.S. in Earth Science from Northland College in Ashland, Wisconsin. She continued her education as a master's candidate in the Geography Department at Western Illinois University. Family obligations pulled her away from the university prior to completion of her degree.

Diane's professional career began at the Defense Mapping Agency (predecessor to the current National Imagery and Mapping Agency) in Bethesda, Maryland. She joined the staff of the USGS in Reston, Virginia in 1989.

Her career has focused on quality control of digital map products, standards coordination, production efficiency, and workforce transition.

Diane has developed training and procedure manuals for the production of vector data. She incorporated these ideas and manuals into retraining efforts as the workforce of the USGS made the transition from the production of traditional mapping products to the production of digital data.

Diane's most recent assignment was as the USGS Eastern Region Geography Customer Service Coordinator for the National Civil Applications Program. The National Civil Applications Program allows for the use of National Technical Means Data (satellite imagery) by federal and civil agencies in support of their mapping and other environmental and science missions.

Diane is currently on a detail to oversee the transition of USGS

National Mapping Program activities within Illinois and Wisconsin from the USGS Central Region office in Rolla, Missouri to the USGS Eastern Region Office in Reston. She is serving as the liaison officer, and as such, is your point of contact for all USGS mapping-related questions and activities.

Long-range transition activities call for the permanent placement (perhaps as early as FY03) of one or more National Mapping Program employees within Illinois as the USGS moves toward dispersal of its employees across the landscape in support of *The National Map*.

Diane currently lives with her husband and two high-school-aged sons in a small town in Loudoun County, Virginia.

Contributed by Gail Kremenec.



From where I sit...

Notes from the desk of
Larry Gunderson
ILGISA President 2001-2002

By now all ILGISA members should have received a call for nominations for the 2003 ILGISA Board of Directors. With this call for nominations we are looking to fill two seats on the board, as well as to bring in a new President-elect.

First of all, if you haven't been on the ILGISA board, consider this an invitation to serve our organization in a leadership role. If you do not feel called personally, please think of nominating someone you feel is qualified and, most importantly, is interested and enthusiastic about serving ILGISA.

As you consider the candidates for the board, I would like to take up an issue that was originally voiced two years ago in this column by former ILGISA President Jim Carter. He noted back then that the founding members of ILGISA, of which he was one, "were a diverse group of persons employed in federal, state, and local government as well as academia." He went on say that the founding members of ILGISA wished to ensure that the makeup of the ILGISA board was representative of this diverse mix. He suggested that perhaps ILGISA should consider mandating that the composition of the board include a representative from each constituency (i.e., a federal employee seat, a local government seat, and so on).

While ILGISA did not move forward with his proposal, it should be noted that over the years through the nominations process, ILGISA has largely maintained representation from each of these constituencies on the board.

The reason I bring this point forward now is that with current past-President Gail Krmeneč of the U.S. Census Bureau ready to step down, the ILGISA Board of Directors will be without federal government representation for the first time. It is still quite possible that someone from the federal government may be nominated and be elected to the board.

However, this brings me to a question that I would like the members of ILGISA to ponder: Is it important to you for the leadership of ILGISA to include delegates from all of the public sector and academic arenas as originally envisioned? Or should the ILGISA board be merely representative of its membership?

My guess is that over time, assuming that there isn't strong sentiment from the membership to mandate the makeup of the ILGISA board, the latter situation will occur. While I don't necessarily see this as a negative, I would like the ILGISA membership to at least be aware of its history and heritage while selecting its leadership for this year and all upcoming years.

MAF/Tiger Modernization Gets Underway In Illinois

By Gail Krmeneč

As the one of the initial steps in the Census Bureau's Master Address file (MAF)/TIGER Modernization Program, the bureau's Chicago Regional Office has been conducting a statewide GIS and imagery inventory. This inventory will be used at the county level to help determine how the Census Bureau will update TIGER to support the American Community Survey and the 2010 decennial census.

The initial goal of MAF/TIGER modernization is to acquire county GIS files with better positional accuracy than TIGER (where they exist) and to evaluate and then process them to enhance the coordinate accuracy in TIGER.

A better TIGER will be able to better support new technology that can be used in field data collection activities. It will also make future TIGER products more compatible with local GIS files. A few county GIS files have already been requested and acquired for evaluation and processing.

For more information about the MAF/TIGER Modernization Program, refer to the Summer 2001 issue of *Illinois GIS Notes* or visit the Census Bureau's home page at www.census.gov. Questions can be directed to Gail Krmeneč at (708) 562-1738.

Gail Krmeneč is Assistant Regional Census Manager with the U.S. Census Bureau.

(continued from page 1)

It is speculative to conclude that the efforts of an emergency planner would have changed the outcome for a particular individual, but the example does highlight that effective emergency planning must first identify unique situations where individuals or groups may have difficulty responding to an emergency, and then plan accordingly for the assistance needed.

The Special Population Planner is a GIS tool produced by Argonne National Laboratory for the Alabama Emergency Management Agency. It is used by emergency planners supporting the Chemical Stockpile Emergency Planning Program (CSEPP) to identify and plan for the needs of special populations in emergency situations. Special populations identified in the project include those with physical or mental limitations, persons without transportation, and persons too young to drive.

The SPP GIS database covers a six-county region around the Anniston Army Depot in north-eastern Alabama, the location of a large U.S. Army stockpile of aging chemical weapons that are scheduled for destruction. Although the chance of a large release of chemical agents into the air before destruction is complete is considered very low, such an accident would require rapid implementation of protective actions for threatened residents.

Two planning zones are used for emergency planning around the depot. The Immediate Response Zone (IRZ) encompasses an area of 8-10 miles around the site where the response to an accident would be most urgent. The Protective Action Zone (PAZ) is the area 8-30 miles around the site that could be affected by a

chemical release, but less quickly than the IRZ.

Identifying and Locating Facilities and Special Needs Persons

The first requirement when planning for special needs populations is finding them. In this case we used an aggressive public safety survey with saturation mailings to invite those with special needs to identify themselves. Telephone interviews were conducted with persons referred by others as possibly having special needs.

SPP presents relevant information to the planner in a graphic interface that includes evacuation routes, resources, and traffic control points.

All mailings were synchronized with newspaper and radio announcements and with letters to community leaders. Our survey identified approximately 3,294 persons with special needs from 31,000 IRZ households and 1,785 persons from among 125,000 less-intensively surveyed PAZ households.

The data collection effort also targeted facilities for which unique planning would be required. These facilities include areas of public congregation (e.g., churches, malls, hotels); facilities hosting controlled populations (e.g., hospitals, schools, nursing homes); facilities with loud noise environments where public warning sirens could be difficult to hear; and facilities with large numbers of employees.

The data on special needs individuals and facilities were compiled into two database tables (Persons and Facilities). Address geocoding was used to spatially locate these database records.

Geocoding involves locating a point in a GIS layer based on a specific street address. The process requires a street layer in the GIS coded with street names, address ranges, and zip codes. For the six-county project area, U.S. Census Bureau TIGER street data were examined to assess the capability of the information to support geocoding.

In the initial street layer, only 27% of the streets had both name and address attributes—2,981 street miles had name and address ranges while 4,046 street miles had names but no address

range, and 4,059 street miles had no name or address range.

To improve the geocoding process, the TIGER street layer was extensively edited. This process involved close cooperation and data sharing with local E-911 centers, the development of editing tools, and extensive editing of the TIGER data to provide more complete information. In the end, nearly all of the Persons and Facilities records were successfully geocoded using the revised street layer.

Special Population Planner

SPP is an extension of a commercial GIS system that provides the GIS interface to the database. It was designed to simplify map visualization, analysis, reporting, and database maintenance related to emergency plans and to create and retrieve text-based emergency response plans.

SPP presents relevant information to the planner in a graphic inter-

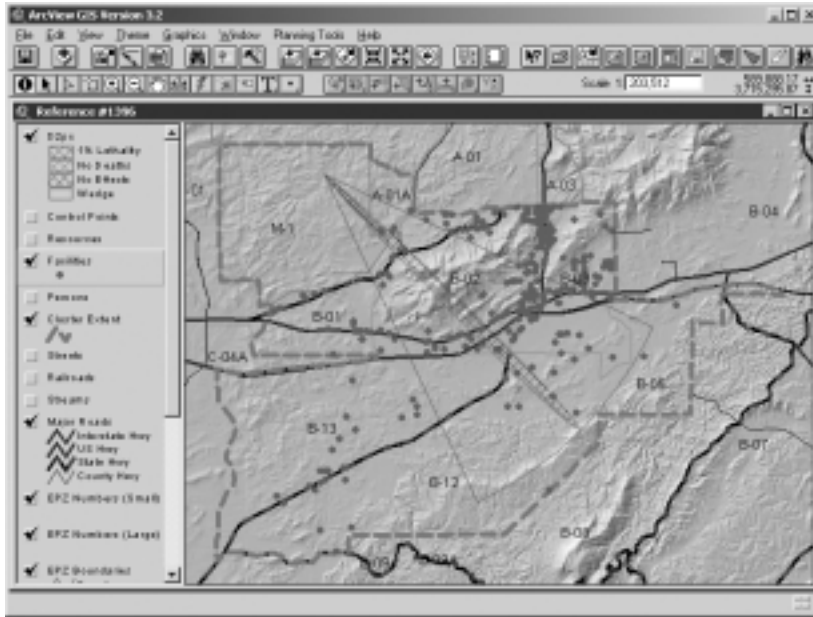


Figure 1. Example SPP Map Display

face that includes evacuation routes, resources, and traffic control points. For analysis of CSEPP-related chemical release emergencies, it displays an air dispersion model result and shows the locations of special-needs individuals and facilities in the affected area.

The SPP planning tools use the IRZ and PAZ planning zones and predetermined emergency events familiar to the planners from their other CSEPP activities and software.

In SPP users can define their own emergency events, specify the planning zones they cover, and formulate plans for those zones. When a user selects an emergency event for planning or response, SPP generates a map of the planning zones and supporting GIS layers associated with the event and enables tools for planning (Figure 1).

Point locations of special-needs persons, facilities, and other layers are dynamically generated from the database. Many custom

reports are available to summarize the results for the event being analyzed. The planning tools are sufficiently generic to adapt to a wide range of emergency planning and response needs.

The system also includes tools for database maintenance. These capabilities include individual record editing, batch-table update tools, a location editor for point locations, and street-editing tools to update the street layer. The location editor tool (Figure 2, see page 10) is used to input or edit locations using a street address, map coordinate, or by clicking within the map view.

An attribute table editor tool (Figure 2) is used in editing many of the supporting database tables by communicating with the database with SQL statements. This tool is an example of the flexibility designed into the SPP. Because the attribute editor window dynamically adapts to the structure of the table being edited, no additional programming is needed to edit records of new tables added to the SPP. As the

database is updated, changes to the underlying database are immediately available to planners.

The success of the system is due in part to a series of workshops held between system developers and emergency planners to refine the system requirements and design and demonstrate initial versions of the software. This allowed SPP development to be focused on the most useful features and to steer away from potential limitations and problems. One example of this was moving the database to PC-based Microsoft Access from Oracle on a Unix server, which was too complex for some of the smaller county offices to administer successfully.

SPP was designed to complement its host commercial GIS software package rather than to operate as a proprietary system. The SPP extension is self-contained and can be added or dropped from the GIS interface during any session. No changes were made to the standard GIS software interface.

Installation, Documentation, and Training

In the fall of 2001 version 2.0 of SPP was installed at six county Emergency Management Agency (EMA) offices in Alabama and at the state EMA office. Workshops were held with the full group of users, and individual training was provided at each installation.

Emergency planning groups in rural counties often have very limited resources and relatively high personnel turnover. To address these factors, the SPP help system needed to be usable, relevant, and sufficiently informative to allow future users to easily and quickly train themselves.

(continued on page 10)

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actually been constructed and what is planned for the future.

This makes it challenging to plan an outing, much less to comprehend the full interconnected scope of the public access trail network. Because trails are being planned and constructed on a continual basis in our area of the state, maps need to be republished at least annually for the system as a whole.

Responsibility for constructing and maintaining trails is distributed among a large number of state, county, and municipal government agencies. There is a good level of cooperation and a high degree of awareness among northeastern Illinois governments that their individual trail plans have a relationship to a larger system. In addition, there are quasi-public and private trails which may or may not connect to the public trail system that must also be included.

When we initially decided to develop and maintain a trail theme for the Lake County GIS, we thought it would be a fairly simple project. However, our experience has been that there is more complexity involved than that simple word "trail" might suggest.

The complexity starts at the most basic level, which is the definition of "trail." For example, a bicycle trail has a formal definition from an engineering perspective and is regarded as a part of the overall transportation system along with roads, railroads, airports, and other modalities. But a trail may or may not be designed and intended for use as a bicycle path. There are a variety of other users and uses, sometimes in conflict with each other.

If the GIS is intended to be able to generate a bicycle map, then the

trails that meet those criteria have to be separable by attribute. Existing trail maps by various agencies may not make that distinction, so research is needed to confirm which trail segments actually meet the criteria for bicycle trails used by transportation agencies such as the Illinois Department of Transportation and its county, township, and municipal counterparts.

Various uses are typically permitted or not permitted on various trail segments, and this, too, needs to be part of a comprehensive trail theme. Uses include hiking, jogging, horseback riding, skateboarding, rollerblading, cross country skiing, and use by various motorized vehicles.

Attributes may reflect whether trail segments are accessible 24 hours a day or only during daylight hours. Attributes may also reflect whether a trail segment is accessible for people in wheelchairs or walkers and what degree of difficulty they might encounter due to elevation changes, narrow bridges, and other impediments.

Linear features work well to represent trail segments in GIS

but are inadequate by themselves to capture all of the information needed. Maps or interactive applications would also need to show where the access points are, whether parking is permitted or not, and potentially a long list of other relevant information that might be included as point or polygon features in a fully evolved trail theme. Such data could include locations of boat rental sites, camping areas, low areas, picnic areas, public restrooms, recreational facilities, scenic views, signs, steep slopes, and water fountains, for example.

The challenge in designing the trail theme is to decide the level of detail that is needed and can realistically be developed. There is always the option to start simply, without extensive attributes, capturing instead the identity of the agency responsible for each trail segment so that questions can be referred to that entity. However, that limits the flexibility of the theme both for making static maps and for interactive use.

Another fundamental design decision is the degree of spatial accuracy. In Lake County we decided that our objective was to



Figure 1. Ryan Williams, GIS Analyst with the Lake County Division of Transportation, stands next to the vehicle used to do GPS mapping of bicycle trails. Note the roof-mounted GPS receiver.



Figure 2. Bicycle trail line theme developed by field GPS data gathering is shown superimposed on a digital orthophoto at a scale of 1" = 100'.

create a theme that would have sufficient positional accuracy to overlay our Spring 2000 digital orthophotography, which is meant to be used at a scale of 1:1200.

Source materials for mapping trail segments vary widely, ranging from engineering drawings to generalized, artistic portrayals. It was beyond the scope of the project to do field GPS data collection for the entire existing trail system in the county. We decided to use the orthophoto as a backdrop for digitizing trail segments for which there was no superior resource, and then to work with each jurisdiction to review and comment on their portion of the trail network.

GIS staff at the Lake County Division of Transportation used vehicle-based GPS to map the trail segments that it develops and maintains, with excellent results. Figure 1 shows the GPS-equipped vehicle used by Ryan Williams and Michael Morrone for this mapping effort. The resulting line theme overlays the orthophoto very well (Figure 2).

Jack Nowak, Lake County Forest Preserve District GIS coordinator, is digitizing the extensive trail network within the forest preserves using digital orthophotos and attribute information available internally.

Municipal data-sharing partners who have developed trail themes have also shared them with us. Lake County

maintains active GIS data-sharing partnerships with more than 100 federal, state, local, and non-profit agencies, in which there is a very free interchange of data at no cost. This has accelerated the development of data resources like the trail theme.

The GIS Managers of the municipalities of Highland Park (John O'Connell), Lake Forest (Mary Clement), Lincolnshire (Jennifer Hughes), Gurnee (Eric Venden), Vernon Hills (Brent Kastor), and Libertyville (Ken Strathman) have all provided copies of their trail

data for this effort. No two are identical in terms of their specifications and attributes, but they are very useful contributions to the project. The county GIS staff is integrating them and/or using them for reference to evolve a countywide, consistent trail theme which will, in turn, be shared with all partners.

This article can only skim the surface of this topic. There is much more involved in understanding the northeastern Illinois trail system from a GIS perspective and designing products to serve internal users and the public.

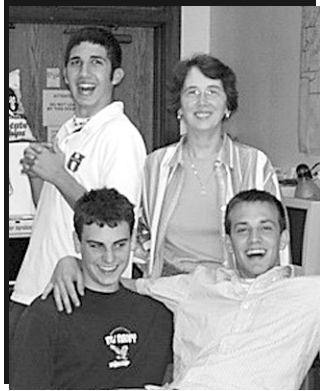
It is clearly important for public-sector GIS programs to work together on this topic, just as the engineers who are planning and constructing the trail segments cooperate to make sure it all connects both on the ground and in our maps.

We're all conscious as we work on this project that the Lake County trails are part of an even larger trail system. This requires cooperation and data sharing on an even broader scale — across both county and state borders.

Richard Hilton is GIS Manager and Keith Caldwell is GIS Applications Supervisor for the Lake County Department of Management Services.

Some interesting Illinois trail-system websites:

- ▶ www.dot.state.il.us/bikemap/STATE.htm
Illinois Department of Transportation Bicycle Maps
- ▶ www.bikelib.org/trails/git
The Grand Illinois Trail
- ▶ www.ridemidwest.com
RideMidwest: A Cyclists' Forum
- ▶ www.americantrails.org/resources/statetrails/ILstate.html
American Trails
- ▶ www.gorp.com/gorp/location/il/il.htm
GORP
- ▶ www.lcfpd.org
Lake County Forest Preserve District (trail maps for each forest preserve site)



GIS Experts in Training

A conversation with Ann Schickner

Ann is a teacher and GIS Coordinator at Springfield High School. She has developed an innovative and fascinating program that introduces high school students to the world of geographic information systems. (Ann's the one in the upper right corner.)

You started out as a Home Economics/Consumer Education teacher. How did you become interested enough to start such an innovative program as GIS at the high school?

Well, I also coordinate the School-to-Work Program, and I'm always looking for new ideas to motivate the students and help them get good jobs, especially using technology. I want them to be able to work at a good job if they don't go to college—or to work their way through college—if they need to help pay for their education.

About three years ago, I saw an Intergraph presentation for school-teachers on GIS in the Schools. I was really excited, thinking that this would be interesting to the kids and provide new job skills, but we couldn't afford to buy in. After speaking to some community people who said that some area businesses were using GIS, I found out about ESRI's GIS in Education program, which we chose.

What kinds of support were you able to get from the vendor, your school, and any other sources?

ESRI provides a lot of supportive materials, and their *GIS in Education* book has many ideas on how

to get started and what activities to look at.

I also found out about a grant program from the State of Washington that would provide funding for start-up and training as long as we involved teachers from other schools and got the word out that GIS is a great program for schools—particularly for Social Studies and Science.

The high school enabled me to get started with an independent studies course for several seniors and gave us space on the school website for our project results. Take a look at www.shs.springfield.k12.il.us/gis. It was designed and is maintained by students.

How did you develop ideas for projects for the students?

ESRI provides some ideas for projects, and if a school takes part in their Community Atlas project, we get up to two free software kits each year for participating. So our Community Atlas is online.

The students are already interested in hi-tech kinds of things, so we got involved in the e-school project. In a brainstorming session, we figured out that knowing about the school district and the

community fit into the state standards for educational goals, so the kids digitized the school district boundary maps and came up with historical data. Now there's a new section on our website with this information.

We'd hoped to do a project on bacteria in Lake Springfield this semester, but time and weather did not cooperate. The lake has several problems, including low water levels and outbreaks of leptosporidia. The students wanted to test the water in different areas and map the results to maybe help the public health department decide on management.

How did you recruit participation from the students?

Well, I sought out several former students who I knew were interested in technology and who were going to be seniors this year. They were interested also because it was so new to them, and they would be able to help design lessons and projects for students who came after them.

Another hook is that this was an independent study—I was their guide, but I wasn't telling them what to do. We were going to figure it out together. Other students are now interested—fascinated, really. These projects will help them to see the world a little differently and help them to become self-starters.

What do you hope the kids will learn from your GIS program?

I think the most important thing they learn is teamwork—we're all in this together, and we depend on each member to get his or her part done so that the project can be completed. This is very different from the rest of high school,

which is very individual with kids competing against each other.

Another important outcome is that the students see real world applications from what they are doing in school, as well as applications of technology to other subjects they are studying.

A third outcome is in the technology itself, where it allows the kids to see how systems work together. They had no real conception of the uses of databases. Now, with GIS, the students see how databases fit in and why they need to create them.

They also are impressed with the visual projection of the data. Maps are so different from charts and tables and communicate very effectively.

Lastly, working through this course in GIS gives the kids opportunities to express themselves in non-traditional ways, and it provides them with another way of learning about their world and how they can work in it.

Do you think your students will continue with their GIS activity once they graduate?

I think they will. They were really excited to come to the ILGISA Spring Conference and see all the applications. One student will work with the school district over the summer, and another will work with one of the city departments in the summer. And I know that one of the boys will be going to NIU or WIU to study GIS.

I think this is a great program to give the students skills they can use again and again.

You are retiring from teaching at Springfield HS this year. Where will you use all the skills and knowledge you've gained? And will the program continue?

Well, I'd like to reach out to other school districts and help them learn how to learn with GIS and help their students develop skills to communicate knowledge about their world. Maybe I can provide some basic training and insight that will further spread the good word about GIS in Education!

And yes, the program will continue with another teacher – Jenny Dawes – who is really ready to take the program and run. We'd hoped it would be a course added directly into the curriculum, but with state budget cuts, it will still be an independent study course this year.

Interview by Ruth Anne Tobias.



2001 ILGISA Dahlberg Distinguished Achievement Award Recipient

Donald E. Luman

Don Luman has had a long and distinguished career in cartography in the State of Illinois. He was privileged to work with Dick Dahlberg in the Geography Department at Northern Illinois University, where Don taught both undergraduate and graduate classes in geography and cartography. While there, he also conducted research on the use of satellite imagery for making land cover maps of metropolitan Chicago.

Don left academia to join the Illinois Natural History Survey and completed work begun on the Land Cover Map of Illinois. Don now works at the Illinois State Geological Survey, where he promotes the use of digital orthophotography for routine and special projects such as geologic mapping.

Don's most recent notable work is in preserving the records of recent Illinois history and land use through preservation of aerial photography from the 1920s and 1930s. These unique historical records are used by private and public agencies for environmental and scientific work of many kinds. The negatives were destroyed because they had become a fire hazard, and excessive use of the only remaining prints has caused them to become worn, lost, and faded. Don has pioneered the use of high-quality scanning as a means to enable storage and high-quality digital copies of this one-of-a-kind heritage, thus reducing the deterioration of this irreplaceable historical record. For this contribution, Ken Lovett, ILGISA President-elect, presented Don with this distinguished award at the fall conference last year.

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The documentation was designed to satisfy two broad objectives: (1) to provide relevant, concise, and easily accessible information to allow users to quickly become familiar with each aspect of the system, and (2) to provide enough information to be used for training purposes. Documentation was provided in the form of context-sensitive help files on the system and hardcopy manuals.

The next phase of SPP development is underway, beginning with a workshop to gather feedback on data updates and new functionality from emergency planners who use the system. Special needs individuals and facilities change significantly over time, so it is essential to keep the database up-to-date.

Also, a new air dispersion model is now available that takes into account variations in wind direction and surface topography. Support for the new model will be added to SPP.

Conclusions

Although SPP was explicitly designed to prepare response plans for conceivable emergency events at a specific facility in Alabama, it is a general-purpose tool suitable for planning for other emergency events as well. This enhanced utility allows it to be used for more frequent incidents. Thus, if and when an accidental chemical weapons agent release ever occurs, users will have established a familiarity with the system, data, and its maintenance.

The need for a county-level emergency planning system with detailed, geographically referenced

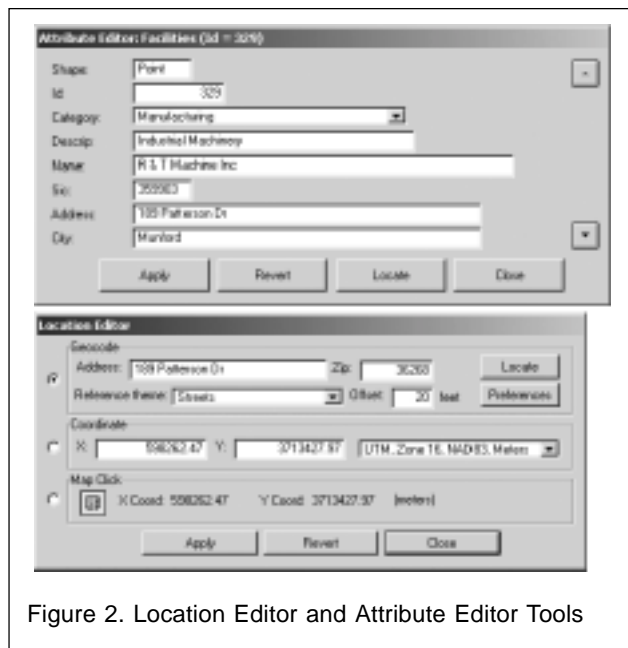


Figure 2. Location Editor and Attribute Editor Tools

information about special needs populations, facilities, events, and resources is not specific to this hazard or this location. The use of GIS to support emergency management—both in planning and response—is increasing. As this project demonstrates, developing such a system for a localized area is both uniquely valuable and challenging.

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References

HR 2001. Emergency Evacuation. HR Magazine, Society for Human Resource Management, Reprint available at <http://bc.workink.com/articles-single.asp?ID=9354>. Accessed June 3, 2002.

Newsday.com 2001. Focusing on the Day's Work. Available at <http://www.newsday.com/ny-bzfeel182370706sep18.story>. Accessed May 27, 2002.

WRAL.com, 2001. Cary Man Becomes Hero in World Trade Center Attack. Available at <http://www.wral.com/News/962120/>. Accessed May 27, 2002.

Jim Kuiper is a GIS Analyst / Biogeographer, and Dan Miller is a System Architect, both with Argonne National Laboratory.



ILGIC Activities Update

By Sheryl Oliver

*The Illinois Geographic Information Council's
new website*

www100.state.il.us/ilgic/
was unveiled May 15, 2002.

*We would like to thank Patrick Beard
and the staff of ITO for designing and serving
ILGIC's new site.*

The ILGIC Framework Implementation Committee is working on how to strategically develop and maintain basic GIS foundation layers for organizations in the state to add their own spatial information and attributes. The basic Framework layers have been identified as Street Centerline/Transportation, Geodetic Control, Hydrography, Elevation, Orthoimagery, and Cadastral/Government units. Two work groups have been established thus far: Street Centerline/Transportation and Geodetic Control.

The Street Centerline/Transportation Workgroup is co-chaired by Ken Lovett, President-elect of ILGISA and GIS Manager at the Department of Revenue with Mary Ann Paulis and Rob Robinson of the Illinois Department of Transportation (IDOT). Other members of the work group are Scott Dragoo, CWLP; Bill Faedtke, DuPage County; Bob Kosin, Village of Barrington Hills; Kevin Kothe, City of Bloomington; Mike Koutnik, ESRI; and Ken McCann, Department of Public Health. The Centerline/Transportation database is named I-ROADS (Illinois Roadway, Operations, and Address Database System).

In light of heightened awareness of homeland security and emergency response, ILGIC, in conjunction with IDOT, is moving forward in the development of a geographic database of the entire road system with an associated address file for the State of Illinois. The purpose of I-ROADS is to develop and maintain a comprehensive digital street centerline database that is use-

ful for all levels of Illinois government. This database is designed for transportation and emergency response applications and numerous other program management projects and responsibilities. The goal of the I-ROADS initiative is to provide consistent, seamless data across jurisdictions.

An Illinois Street Centerline Survey was designed and distributed to local, state, and federal government agencies to ascertain what centerline information currently exists. Results of the survey can be found on the ILGIC website under "I-ROADS."

The Geodetic Control Workgroup is chaired by Chris Pearson, Geodetic Advisor for the State of Illinois. Members are Case Grintjies, IDOT; Paul Marchese, Illinois Professional Land Surveyors Association; Bill Rice, Department of Natural Resources; and Chris Stohr, Illinois State Geological Survey (ISGS).

As perhaps the most fundamental of the Framework layers, geodetic control provides a common reference system for establishing the coordinate positions of all geographic data. This information plays a crucial role in developing all Framework and user applications data, because it provides the spatial reference source to register all other spatial data. The first meeting of this workgroup was to be held June 10, 2002 (as of this writing, the group had not met). Agenda and meeting minutes are provided on the ILGIC website.

ILGIC Summer Meeting

*July 30, 2002
9:30am-11:30am
Capitol City Center
130 W. Mason
Springfield, Illinois*

The ILGIC Clearinghouse/Public Access/Web Committee is co-chaired by Patrick Beard of the Illinois Technology Office (ITO) and Rob Krumm of the ISGS. The major challenge for this committee is how to effectively populate and maintain a statewide clearinghouse of geographic information and serve it to various types of users.

The ITO is in the process conducting an inventory of potential and existing GIS databases from all state agencies and various state organizations. This will be the largest inventory of this kind that the state has undertaken.

The ITO and its partners will facilitate the delivery of a wide range of geographically based data. This will be accomplished in two ways: 1) through a secured Homeland Security/Public Safety website devoted to the delivery of all available data, including sensitive energy and infrastructure data, and 2) selectively, through the publicly accessible pages of the state's websites.

Representatives from each organization have been assigned to this initiative. The Clearinghouse Committee will meet with these representatives late in the summer of 2002.

GIS Day 2002

is November 20, 2002.

*If you would like to participate,
or for more information,
contact Connie Waggoner at
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*Sheryl Oliver is GIS Coordinator for
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Please direct comments, questions, and news items to the ILGISA secretariat's office above or to taylor@niu.edu.

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Calendar of Events

October 3-5, 2002
Iowa's 5th Biennial GIS Conference, Iowa City
www.igic.gis.iastate.edu/conference

October 26-30, 2002
URISA 2002 Annual Conference, Chicago
www.urisa.org

November 4-5, 2002
ILGISA Fall Conference, Lisle
www.ilgisa.org



**GIS in Illinois
Spring 2002 Conference**

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