

ILLINOIS GIS NOTES

THE NEWSLETTER OF THE ILLINOIS GIS ASSOCIATION

U.S. Geological Survey National Geospatial Program Office Activities

By Dick Vraga

The U.S. Geological Survey has realigned the geospatial programs for which it has leadership responsibility into a National Geospatial Program Office (NGPO) to serve the needs and interests of the geospatial community throughout the nation. The NGPO strives to engage partners throughout the community in its planning and in ensuring that its activities meet the needs of those on the landscape. By connecting the components of *The National Map* (integrated base data), Federal Geographic Data Committee (coordination, policy, and standards), and Geospatial One-Stop (information discovery and access), and by embracing and communicating the message of the importance of the National Spatial Data Infrastructure (NSDI), the geospatial community and the nation will realize the vision of “current and accurate geospatial data ... available to contribute locally, nationally and globally to economic growth, environmental quality and stability, and social progress.”

NGPO National Activities

Fifty States Initiative

The Fifty States Initiative outlines the way all governments should work together to build the National Spatial Data Infrastructure. This program encourages coordinated state activities with an emphasis on strategic and business planning. The Federal Geographic Data Committee (FGDC) and the National States Geographic Information Council (NSGIC) are supporting this initiative by developing and providing a variety of tools, such as specifically targeted implementation grants, strategic and business plan templates,

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Vol. 7, No. 2 Summer 2006

Northeastern Illinois County GIS Cooperative Program Status

By Richard Hilton, in cooperation with Alan Hobscheid, Bill Faedtke, Nicole Gattuso, Thomas Nicoski and Greg Johnson

Background

The six counties of northeastern Illinois (Cook, DuPage, Kane, Lake, McHenry and Will) are engaged in a long-term cooperative program in GIS and are consulting with neighboring counties in Illinois, Wisconsin and Indiana as well. These six counties have a combined population of more than 8,000,000 people (U.S. Census Bureau, 2004), representing 65 per cent of the population of Illinois. A major factor underlying this effort is the need to support public safety agencies having responsibilities that span multiple counties, but there are a number of other goals as well.

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Ruminations from the Desk of a Man with Three Hats



Keith Caldwell is the Editor of "Illinois GIS Notes," current President of ILGISA and GIS Applications Supervisor with Lake County GIS/Mapping Division.

Where does the time go? It's hard to believe that a year has passed and my term as President Elect is over... I consider it an honor to serve as President of such a worthwhile and growing organization as the Illinois GIS Association.

I'd like to take this opportunity to talk a little about the membership profile, how you can volunteer your time to help ILGISA continue to grow, and the challenges we face in finding adequate conference space as our membership and conference attendance continue to increase.

First, there are now more than 770 members! The very first ILGISA conference in 1990 had an audience of 220. This increase is a direct reflection of how much the GIS industry has grown in our state. As posted on the U.S. Department of Labor's website, the geospatial industry was identified by President Bush's High Growth Job Training Initiative as one of the three "important" emerging high growth industries that are being targeted for expansion (To learn more about this initiative, visit <http://www.doleta.gov/BRG/Indprof/Geospatial.cfm>).

Today ILGISA's membership make-up looks like this: approximately one-quarter each is from local, county and state government. The remaining members come to us from the federal government, colleges and universities, utilities and members of the private sector. Areas of interests in our organization range from public health, planning, environmental mapping, census, and parcel mapping to the ever-growing area of web development—truly a diverse group.

Secondly, it's gratifying to see ILGISA grow and still retain its core principals. Mainly, that it serves as an opportunity for professional GIS practitioners to meet and learn from sharing their experiences. ILGISA seeks to provide high quality, cost-effective programs at each conference. It survives and grows because of contributions from its members.

As a volunteer-based organization we depend on the members for support. Help can range from serving on a committee, presenting at a conference, putting on a

workshop, moderating a session, displaying a poster or writing an article for *Illinois GIS Notes*. Volunteering is as easy as contacting a member of the Board of Directors, ILGISA staff or a committee member and letting them know you're interested.

Having a record of volunteering is a great foundation for running for the ILGISA Board of Directors too! ILGISA is very fortunate to have had so many talented members choose to run. The intent of the association is to have the Board of Directors reflect the make-up of its members. By striving for this balance, the board can "keep its ear" on the factors and events that affect the membership.

One of the more interesting challenges to this growth is finding available hotel space for an organization like ours. Appropriate conference hotels are difficult to come by. Two of the criteria to consider when selecting a location are the need to have it in close proximity to the majority of the attendees and for it to be near major highways for those members who must travel farther.

Availability of space for the keynote presentation and lunch is important too, while at the same time having enough rooms for the individual session presentations. There must also be enough room for the vendors to demonstrate their products. It's amazing how quickly the choices narrow down once all these factors are taken into account! We have been fortunate to have found the Crowne Plaza in Springfield for the spring conference and the Oak Brook Marriott for the fall.

With the growth in membership has also come an increase in the number of vendors displaying their services. ILGISA has benefited from their support through the sponsorship for a portion of the session breaks and lunch. So take some time to visit them at the next conference. See what services they provide and ask them to demonstrate what's new.

I look forward to the opportunity to serve with the other dedicated board members and to participate in the continued high-quality growth of ILGISA. I am also grateful to those who have come before me, many of whom served as a role model, knowingly or not.

Intergovernmental Cooperation: County GIS and the Illinois State Geological Survey Work Together

By Richard Hilton and Richard Knodel

County GIS programs often work with other government agencies on a wide range of applications, but perhaps one of the more unusual opportunities for collaboration is with the Illinois State Geological Survey (ISGS). This article will share Lake County's experiences working with the ISGS to facilitate its geologic work in our county—a pattern likely to be repeated in many other parts of the state due to its many benefits for both parties.

County governments rarely, if ever, have professional geologists on staff. Groundwater issues are typically the province of public works departments or agencies that manage public water wells and water distribution systems.

The 2005 drought and rapid growth of population in northeastern Illinois in areas not served by Lake Michigan water have greatly increased awareness and concern about long term groundwater capacity and water quality. Local governments look to the ISGS and the Illinois State Water Survey for expertise in these topics.

GIS data development for geology has some significant contrasts with all other GIS data development in county government. It involves mapping features that can't be directly seen and that only make full sense when mapped in three dimensions. It often requires using expensive and sophisticated equipment in the field, such as drilling rigs, hoverprobes for drilling test holes under water and devices used for geophysical (seismic) sensing.

The work that has been going on in Lake County is part of a multi-state project known as the Central Great Lakes Geologic Mapping Coalition (CGLGMC), a partnership between the state geologic agencies

of Illinois, Indiana, Michigan and Ohio, and the U.S. Geological Survey. In addition to the Great Lakes states, this area also has a common heritage of extensive glacial geology. The CGLGMC has selected counties in each state to serve as pilot areas to develop new standards for three-dimensional geologic mapping. Lake County is the pilot county in Illinois.

Geologic mapping is inherently three-dimensional, and it involves tools and methodology that are very different from those used for all other county GIS data development efforts. However, it

turns out that there is a lot that a county GIS program can do, not only to assist the geologists in their work, but also to incorporate the results into useful county applications.

Following are examples of how we've been able to help the geologists through our county GIS program.

1. Well drilling log maps

Well drilling logs are a primary source of information for geologic mapping. Historically, the location information on well log records may be very inaccurate. Tax parcel data can be used to verify the location of wells and improve the locational accuracy of the point features representing the wells.

Well logs contain descriptions of the type of material found in the core as the well is drilled; for example, a well log might say that blue clay was found for the first sixty feet of a well, followed by fifty feet of sand and gravel. Geologists review and classify this information for each well.

When a sufficient number of wells and an acceptable spatial distribution of the data has been

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Illinois State Geological Survey team drilling at Deer Park in Lake County in September, 2006. ISGS scientists and drill rig operators include, from the right: Dr. Steven Brown, Dr. Michael Barnhardt and Dr. Dave Larson.

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performance measures and incentives. It identifies the criteria, characteristics and activities that will lead to effective coordination councils in the future. In addition, it lays out implementation steps that the federal government and other entities need to undertake to establish more formal statewide coordination councils that will take an active roll in completing the NSDI.

Ramona Inventory Tool

Ramona was developed by NSGIC through a National Oceanic and Atmospheric (NOAA) grant to inventory GIS data holdings of tribal, state, and local governments and their partners. It provides one consistent platform for the nation that is designed to work in concert with the Geospatial One Stop (GOS) Portal, but it can also be customized for use by each state.

Ramona allows its users to create their own profile, which includes information on their organization, systems, and data distribution and management policies. The system also provides a quick way to inventory individual data layers and creates a very basic metadata form with enough information to support “data discovery.” The user can choose to send these forms to the GOS Portal.

Using Ramona will help state, local and tribal government agencies reduce the number of data inventory requests made by federal agencies. For example, the Census Bureau routinely contacts agencies to obtain information for the TIGER Enhancement Database, and the Federal Emergency Management Agency inventories all available data when it begins to update flood maps in each jurisdiction. By entering the information, an organization can reduce the complexity and frequency of these contacts and manage time more effectively.

Imagery for the Nation

Aerial and satellite imagery in the form of digital orthoimagery is the foundation for most public and private geographic information systems. It is an essential commodity that is being developed by hundreds of different entities across the nation, leading to higher costs, varying quality, duplication of effort and a patchwork of products. An improved national approach is needed to keep the cost to the taxpayer as low as possible and to improve the availability of standardized, high-quality products.

In the Imagery for the Nation program, NSGIC is working with the National Digital Orthophoto Program Committee (NDOP) and the FGDC to create a new nationwide, federally funded aerial

imagery program that will collect and disseminate standardized multi-resolution products on set schedules. As proposed, it will allow for “buy-up options” for higher resolution products where needed. The imagery acquired through this program will remain in the public domain and be archived to secure its availability for posterity.

Technical specifications vary by state. For Illinois, the program calls for 1-foot resolution, natural color, leaf-off imagery for the entire state funded 100 percent by the federal government. In the urbanized areas of Chicago, Springfield, and East St. Louis, 6-inch resolution imagery will be supported, but at a funding level of 50 percent.

Imagery for the Nation Vision

The nation will have a sustainable and flexible digital imagery program that meets the needs of local, state, regional, tribal, and federal agencies.

NGPO in Illinois

Since its inception in 2004, the NGPO has been active in Illinois through the efforts of its Geospatial Liaison. The following summarizes three significant initiatives of the NGPO in Illinois: the 2005 orthophoto project, the Innovative Partnership Funds for 2006, and the establishment of an NSDI Partnership Office in Illinois.

2005 Statewide Orthophotography

This project to acquire and make available orthophotography for the entire State of Illinois is complete. Initiated by an agreement between the Illinois Department of Transportation and the USGS, the project required cooperation and contributions by 16 federal, state, regional, and county agencies.

To meet user requirements, the project was conducted in two parts. The “Chicago Urban Area,” defined by Cook, DuPage, Kane, Lake, McHenry and Will Counties, used USGS Urban Areas high-resolution orthophotography specifications to meet Department of Homeland Security needs. The second part, consisting of the remaining 96 counties, used National Aerial Photography Program (NAPP) orthophoto specifications as the foundation, with one significant change, the ground spatial resolution for the data was increased from the standard 1 x 1 meter to 0.5 x 0.5 meters per pixel, providing the ability to discern greater detail in the photographs.

The aerial photography was primarily collected from mid-February through April 2005.

The results of the 2005 Statewide Orthophotography project are a significant contribution to *The National Map* (TNM), and through the extraordinary efforts of the Illinois State Geological Survey (ISGS) staff, data are available for access and downloading via the Illinois NSDI Clearinghouse.

Online since 1997, the Illinois Clearinghouse is maintained and managed by the Illinois State Geological Survey and is part of a network of more than 300 NSDI nodes worldwide, a program managed by the FGDC. These nodes use a common suite of technology tools that allow users to easily search, locate and download geospatial data hosted on one or more of the NSDI servers. As an example of the popularity of the 2005 Chicago Urban Area orthophotography, more than 650,000 files were downloaded during the first five months they were available for access through the Illinois Clearinghouse (<http://www.isgs.uiuc.edu/nsdihome/>).

Innovative Partnership Funds

In Fiscal Year 2006 the USGS Eastern Region NGPO awarded Assistance Grants to USGS partners to improve elements of the NSDI in the region. Two such awards were made to the Illinois State Geological Survey for two important geospatial activities within the state: the Illinois Clearinghouse and coordination of geospatial activities.

The Illinois Clearinghouse

An Assistance Award was made to ISGS to expand existing Illinois Clearinghouse Web resources into a true Illinois GIS Portal. This new clearinghouse identity will present a broader array of Illinois data resources to support the expanding needs of the state's geographic information systems user community, and the Illinois Clearinghouse will be a principal contributor to *The National Map* for the state. This project will emphasize content updates so that available data are relevant and current.

In recent years many state, county and professional organizations in Illinois have launched web-based mapping applications. The revised web portal will include metadata about and links to known Internet-based mapping applications serving Illinois data. It will include links to other metadata servers and pertinent data sources to make GIS resources for the State of Illinois much easier to discover. In addition, the Illinois Clearinghouse will provide access to critical data sets.

Illinois Coordination

An Assistance Award was made to ISGS to lead the development of a process for establishing a recognized geospatial coordination mechanism for Illinois. It includes developing a draft strategy and conducting a meeting to raise the level of awareness among decision-makers and geospatial professionals for the need and benefits of statewide geospatial coordination. It will require meetings with geospatial leaders in the state to develop the strategy and a single-day seminar to develop broad support for the concept. Guidance will be sought from the Federal Geographic Data Committee and the National States Geographic Information Council.

NSDI Partnership Office

Since the inception of the NGPO, Illinois has been served by the Geospatial Liaison for Wisconsin and Illinois located in the NSDI Partnership Office in Madison, Wisconsin. It is a goal of the program to establish an NSDI Partnership Office in all 50 states as funding and available talent will allow. An NSDI Partnership Office was established on September 5, 2006 at the USGS Illinois Water Science Center and is staffed by Shelley Silch, Geospatial Liaison for Illinois. Below is a brief biographical sketch.

Shelley began her employment with the USGS in Rolla, Missouri in May 1976, "... back in the good old days when maps were created by hand." Shelley transferred in the 1980s to the Branch of Photogrammetry, compiling map manuscripts using PG-2 and B-8 vintage stereoscopic plotters. Shelley left government service in 1982 and returned to the USGS in Rolla in 1991. As a Cartographic Technician in the Production Operations Branch, she revised and updated digital maps. Shelley enrolled at the University of Missouri-Rolla as a part-time student. She was selected for a conversion to GIS Specialist, and she began working with GIS data and an assortment of GIS applications. After a conversion to a Physical Scientist series, she devoted her time to research projects related to remote sensing. Shelley's contact information is as follows:

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Will Your Community Be Ready for the 2010 Census Local Update of Census Addresses Program?

By Gail A. Krmenech, U.S. Census Bureau

The Local Update of Census Addresses program, also known as LUCA, is a decennial census geographic partnership program. LUCA allows the Census Bureau to benefit from local knowledge in developing its Master Address File (MAF) for the 2010 Census and yearly ongoing household surveys.

The MAF is used for census questionnaire delivery and also provides the framework for address sampling for the numerous other surveys conducted by the Census Bureau, including the American Community Survey. The American Community Survey will replace the long form questionnaire (which collects the sample of demographic, housing, and economic information) in future censuses, including Census 2010, and is a critical element in the reengineered 2010 Census plan.

Tribal, state and local governments can contribute to a complete enumeration of their community by reviewing and commenting on the list of housing unit and group quarters addresses that the Census Bureau will use to deliver the census questionnaires within their jurisdiction. An accurate census count starts with an accurate Master Address File.

Why is the LUCA program important to your community?

Because federal and state grant money is distributed in large part based on population figures, a complete census count is vital to cities and towns nationwide. If a housing unit or group quarters address is listed on the Census Bureau's Master Address File, it

will ensure that the people residing at the address will be enumerated in the census.

The decennial census will be a snapshot of our nation as of April 1, 2010. If an address is not included in the decennial census process, the address (and the people associated with it) cannot be added to the census count later if it discovered that the address was not originally included in the decennial census process.

How will the LUCA program be conducted for 2010?

For the 2010 LUCA program:

- Participating governments designate a LUCA liaison to review the MAF for their jurisdiction. Because the Master Address File is protected under Title 13 U.S. Code, all LUCA participants electing to receive the MAF must review a set of security guidelines and sign a confidentiality agreement promising to protect the confidentiality of the addresses.
- The LUCA liaison receives the Census Bureau's Master Address File for their jurisdiction, corresponding maps and address tallies. (The type of LUCA materials provided depends on the LUCA option selected).
- In areas with city-style addresses, the LUCA liaison can provide input regarding individual addresses on the list, as well as add addresses that may be missing. The Census Bureau will verify this input during the Address Canvassing Operation and

provide feedback to the participants about the results.

- In areas with non-city-style addresses (e.g., rural route and box number or post office box numbers), LUCA liaisons will provide input regarding the count of housing unit and group quarters addresses. The Census Bureau will visit each census block during the Address Canvassing Operation and update the census address list. The Census Bureau will provide LUCA participants with updated address counts and maps during the feedback phase.
- LUCA participants may appeal final Census Bureau decisions. An agency independent of the Census Bureau will review and decide on all appeals prior to Census Day, April 1, 2010.

How has LUCA 2010 changed from Census 2000?

The Census Bureau is making a number of improvements to the 2010 LUCA program:

- There will be a single review cycle for all address types.
- There will be a longer review period: 120 calendar days.
- There will be more advance notice so that participating governments can prepare.
- There will be more comprehensive program communications, as well as periodic contact to answer questions and measure each participating government's progress.
- There will be three options for participation.

- Participating governments will be offered the option of using the Census Bureau supplied MAF/TIGER® Partnership Software application that combines the census address list, address count list and maps in an easy-to-use software package.

Participation Options

Three different participation options are available for LUCA 2010, which will provide more flexibility for local governments. A local government can choose the option that best suits their needs based on the type of addressing within their jurisdiction, access to an address list, willingness to sign a Title 13 confidentiality agreement and the resources available to conduct the review.

Getting Started

Make sure your community responds to the initial LUCA program announcement letter by letting us know the highest elected official for your jurisdiction and by designating a Census Liaison.

A representative from your community should plan on attending a LUCA orientation workshop. Numerous workshops will be offered throughout the first half of 2007. The workshops will describe the LUCA program in greater detail, including various participation options, products and formats, and confidentiality and security issues, as well as demonstrations of our new MAF/TIGER Partnership Software.

By attending an orientation workshop, potential participants should be able to determine which participation option is right for their community and what preparations they should make. Look for LUCA orientation workshop announcements early next year.

AMERICAN COMMUNITY SURVEY - America's Changing, So is the Census -

Local Update of Census Addresses Timeline

TIMEFRAME	ACTIVITY
January 2007	LUCA advance notice letters mailed to the Highest Elected Official and other contacts in all active functioning governments
February - June 2007	Census Bureau conducts Orientation Workshops, describing the LUCA program, participation options, products & formats, confidentiality & security issues, demonstrating the MAF/TIGER Partnership Software
July 2007	LUCA invitation letters and registration materials mailed to the Highest Elected Official and other contacts of each government
July 2007 - January 2008	Invited governments register for LUCA and the Census Bureau ships the LUCA review materials to each participating government
August - October 2007	Census Bureau conducts Technical Training Workshops: participation products, options and formats, mechanics of updating address list and maps, submission requirements
August 2007 - April 2008	LUCA participants review and update the address list and return their comments to the Census Bureau's Regional Office within 120 days of LUCA material receipt
April 2008 - October 2008	Census Bureau reviews the participant's LUCA submission and updates the Master Address File and TIGER® geographic database
November 2008 - May 2009	Census Bureau prepares for and conducts the Address Canvassing Operation using GPS equipped handheld computers
June 2009 - October 2009	Census Bureau provides feedback materials to LUCA participants, showing how it processed each government's LUCA submission
September 2009 - December 2009	LUCA participants review their LUCA feedback and may appeal the results to the LUCA Appeals Office
September 2009 - January 2010	LUCA Appeals Office reviews and adjudicates appeals

More information on the LUCA program can be accessed at <http://www.census.gov/geo/www/luca2010/luca.html>. If you would like to learn more about the American Community Survey, the numerous data products we offer, or other Census Bureau topics, visit us at www.census.gov. You may also contact the Regional Office geography staff at (630) 288-9245 for additional information.

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Helping You Make Informed Decisions

Gail Krmeneč is a Geographer with the U.S. Census Bureau regional office in Chicago.

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established, the methodology involves interpolating the layers connecting these sample points. This is referred to as stratigraphy.

2. Surface topography

Surface topography is an important GIS theme because it establishes the elevation of the top of a well and so can be used to correctly position the well log details with respect to the elevation of other wells. Many counties are acquiring high quality LIDAR (Light Detection and Ranging) elevation data that can directly assist with this need.

3. Digital terrain models

Surface topography in the form of digital terrain models and high resolution contours help geologists visualize the landscape and understand the glacial movements that shaped it and the surface beneath.

4. Surficial geology maps

Soil data typically created in partnership with the U.S.D.A. Natural Resources Conservation Service, the State Department of Agriculture and the county in a three-way intergovernmental agreement is very useful to geologists as well in developing surficial geology maps. Soil data can also be interpreted to reveal parent materials, which are the original rocks, sand and other material that form the basis for particular soil types through natural processes over long periods of time.

Surficial geology is the term used to describe the first approximately 20 feet under the surface of the earth, which is an area of great importance to vegetation and drainage.

5. Well drilling site location

Existing well data logs by themselves don't typically provide enough information to map an area, since only well logs

meeting standards of accuracy and completeness are used. Also, the spatial distribution of wells may not provide sufficient data over the area to be mapped.

It is sometimes necessary to drill new test wells in specific areas in order to obtain more information. Parcel data is useful in finding potential drilling sites, typically on government-owned property, since it is easy to determine ownership of an area that might be a target for a test well.

6. Surface water and wetlands

GIS themes showing surface water and wetlands are also useful for geologists as they consider connections between surface water and groundwater. Surface water bodies may be recharge areas for groundwater; sometimes surface water bodies are fed by underground springs. The action of glaciers resulted in many complex layers of differing material above bedrock, with complex paths for movement of groundwater and linkages with the surface.

7. Taxing district boundaries

Taxing district boundaries are used to determine which jurisdiction is responsible for a particular area where field data collection is planned. Some data collection procedures can impact traffic flow or may require advance notification. This is particularly true when working in or near sensitive natural resource areas.

8. More up-to-date maps

Consistent with U.S. Geological Survey mapping standards, the



Dr. Richard Berg, ISGS, oversees a U.S. Geological Survey hovercraft drilling a test well through water at Redwing Slough in Lake County in April, 2001.

ISGS frequently publishes paper maps using USGS. 7.5 minute (1:24,000 scale) quadrangle map geographical areas. The ISGS traditionally uses road, contour, political boundaries and major water features from these quadrangle maps as a backdrop for the geologic mapping information.

USGS does not currently have a program for updating the data in these maps on a regular basis. As a result, most of these maps are quite old and are in serious need of updating. Essentially all of the information in a quadrangle map is part of the core data maintained independently by county GIS agencies these days, so counties can provide this information to the ISGS for mapping purposes resulting in more accurate products.

For a more in-depth (pun intended) discussion of the geologic perspective on this work, visit the ISGS website at www.isgs.uiuc.edu and visit the Geologic Mapping Coalition quick link. Some maps and posters from this ongoing project have been published as Adobe documents and are also available on the ISGS website to view and download.

Richard Hilton is the GIS Manager at Lake County and Richard Knodel is a Principal GIS Analyst specializing in Environmental GIS at Lake County.

New ILGISA Board Members

ILGISA Board Members are elected from the membership and serve two-year terms on the eight-member board. Curtis Albert and Kevin Gibbs took office at the fall conference.



Curtis Albert has worked for more than 16 years at the Illinois State Geological Survey using GIS. He began his career at the ISGS as an undergraduate hourly assistant while pursuing a Bachelor of Science degree in Geology at the University of Illinois. His GIS experience began with using ArcInfo 4 on a Prime Minicomputer shared by the Illinois State Geological Survey and the Illinois Natural History Survey.

Over the years Curtis has worked on a wide variety of projects, including county-level geologic suitability screening for landfill sites, statewide geologic suitability screening for a Low-Level Radioactive Waste repository, working with 2-D and 3-D modeling software to model subsurface geologic units and identifying aquifer resources. His research interests include using geographic information systems tools to create maps that make the understanding of geology and geologic processes more easily understood by non-geologists.

Kevin Gibbs has been an employee of the City of Chicago since 1998. From 1998 to 2002 he worked as an analyst for the Chicago Police Department's Chief of Detectives researching GIS solutions for motor vehicle theft and sex offender laws. In 2002 he began working for the Chicago Department of Public Health as GIS Coordinator, where Kevin is responsible for department-wide GIS support and solutions for 1300+ employees. Successes such as the department's innovative use of GIS for West Nile virus surveillance have been highlighted recently in *Time* magazine.

Kevin's love of maps began while serving in the U.S. Army National Guard and Reserve Officer Training Corps from 1991 to 1997 as an M1 tank gunner. During his enlistment, Sgt. Gibbs trained soldiers in map reading, orienteering and land navigation. Kevin has a BA in Graphic Design and History from the University of Wisconsin-Stevens Point and a Master of Urban Planning from the University of Illinois at Chicago. A lifelong Illinois native, he grew up in Naperville and has resided in Chicago since 1996.



Visit the Illinois Natural Resources Geospatial Data Clearinghouse

Digital archives of Illinois Historical Aerial Photographs for 51 Illinois counties are available for viewing and download at <http://www.isgs.uiuc.edu/nsdihomewebdocs/ilhap/>.

The archives consist of more than 30,000 photographic paper prints of statewide aerial photographs acquired for Illinois from 1938 through 1941. Because use of the prints over time has resulted in their becoming faded, worn, defaced, or lost, access to these print collections is becoming increasingly restricted. Portions of the state have been scanned in an effort to create a lasting archive of this irreplaceable collection.

Illinois GIS Notes is published by the
Illinois GIS Association
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DeKalb, Illinois 60115
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The GIS Managers (Alan Hobscheid, Cook County; Bill Faedtke, DuPage County; Thomas Nicoski, Kane County; Nicole Gattuso, McHenry County; Richard Hilton, Lake County; Greg Johnson, Will County) all knew each other and had shared experiences with each other but had not come together as a group with common purposes until quite recently.

Building a county geographic information system is a large, multi-year task under the best of circumstances, so it is natural for a county GIS staff to focus on getting that internal job done. As more county GIS programs reach maturity, it becomes possible to begin to respond to application needs and opportunities that involve multiple counties. This seems to be a natural evolutionary step for county-level GIS programs, particularly in urban areas.

County GIS programs everywhere are being requested to provide data to support municipal and regional 911 centers, particularly as these dispatch centers migrate to more sophisticated software that includes mapping displays using GIS capabilities. When someone dials 911 on a land line, the dispatch center automatically receives the phone number of the caller and the address where the phone is located.

Not long ago dispatch centers began to handle cellular 911 calls in which the only automated information transmitted was the cell phone number and the identity of the cell towers that received the transmission. The most recent technology returns coordinates of the cell phone location. In both cases the dispatch software seeks to use GIS data to determine the appropriate jurisdiction to be dispatched.

When a resource like a fire truck is dispatched from Jurisdiction "A" to provide assistance somewhere in Jurisdiction "B," that resource continues to receive



Left to right: Mary Elliott, Mike Semenek and Bill Faedtke (DuPage County GIS Manager); Chairman Schmidt; Peter Schoenfield and Richard Knodel (Lake County)

directions from its original dispatcher, even when being sent some distance into unfamiliar areas. There is a need for dispatchers to have access to detailed mapping information, as current as possible, for areas well outside their normal jurisdiction. This is a result of the strong growth in mutual aid arrangements since the events of September 11, 2001.

The fire service has a mutual aid system that is exceptionally well developed in Illinois and neighboring areas of Wisconsin called MABAS (Mutual Aid Box Alarm System). With MABAS, a fire department facing a serious emergency can summon aid from other agencies, and those agencies in turn can receive support from still other agencies. This system has been activated several times over the last two years and is credited with enabling Illinois agencies to respond rapidly to requests for assistance with Hurricane Katrina.

County GIS programs are also being called upon to forge partnerships with the county Emergency Management Agencies (EMAs). In the northeastern counties, GIS staff routinely support planning and mapping of critical resources and participate in emergency exercises and a variety of related tasks, including ad hoc analysis of evolving emergencies. These needs have come to the forefront during just the last few years. County GIS staff are now often written into official emergency plans and expected to report to Emergency Operations Centers when needed.

Health Departments are also increasingly discovering and using GIS for a variety of purposes, some of them related to emergency planning, analysis and management, all of which are regional in nature.

Process

As reported in *Illinois GIS Notes* earlier this year, the six county GIS managers met last December to share experiences and discuss how we could work more effectively together. This meeting resulted in defining some common goals:

- To standardize the data that we share with each other and with other government agencies.
- To reconcile any differences in county boundary lines so that each shared county boundary is a coincident line in GIS. As a result, our data will fit together seamlessly.
- To reconcile mapped features, whether legal boundaries or natural resources, along shared county boundaries.

Although these goals sound simple, they actually involve considerable analysis and work to accomplish.



Left to right: Jason Verachtert (Kane), Keith Caldwell (Lake), Tom Nicoski (Kane GIS Manager), Richard Hilton (Lake GIS Manager), Greg Johnson (Will GIS Manager), Edward Emoo (McHenry).

The managers continued to develop a plan through conference calls and email exchanges in preparation for a more extended meeting that took place in Lake County in May of this year. The six county GIS Managers were joined by the manager of the Kendall County GIS program and senior GIS Analysts from all six counties. The group discussion among the twenty-four people present was highly productive. More extended group meetings are planned.

The May meeting led to the creation of three intercounty standards workgroups. Each workgroup includes GIS Managers from two counties plus six GIS Analysts (one from each county). The workgroups communicate through conference calls, email and Internet tools. Each workgroup began its work by inventorying current practices in each county. These workgroups represent the current phase of our work together. A number of other joint tasks are planned when these are done.

The Transportation Workgroup focuses primarily on street and railroad themes. The Addressing Workgroup deals with addressing issues and standards. The Cadastral and Government Boundaries Workgroup develops proposed standards for shared tax parcel data and taxing and elective district boundaries. These standards deal with shared data formats only, not with how each county stores the original data internally. This project does not involve any discussion of or attempt to standardize the data distribution policies of the individual participating counties.

County GIS programs have a very significant investment in the software and database structure they have each built for their data: they may have many applications that rely on that particular design, so that changing that to meet an external standard

doesn't make sense. The understanding is that we can each translate data from whatever form we store it in internally to follow a common format as shared data.

Conclusions to Date

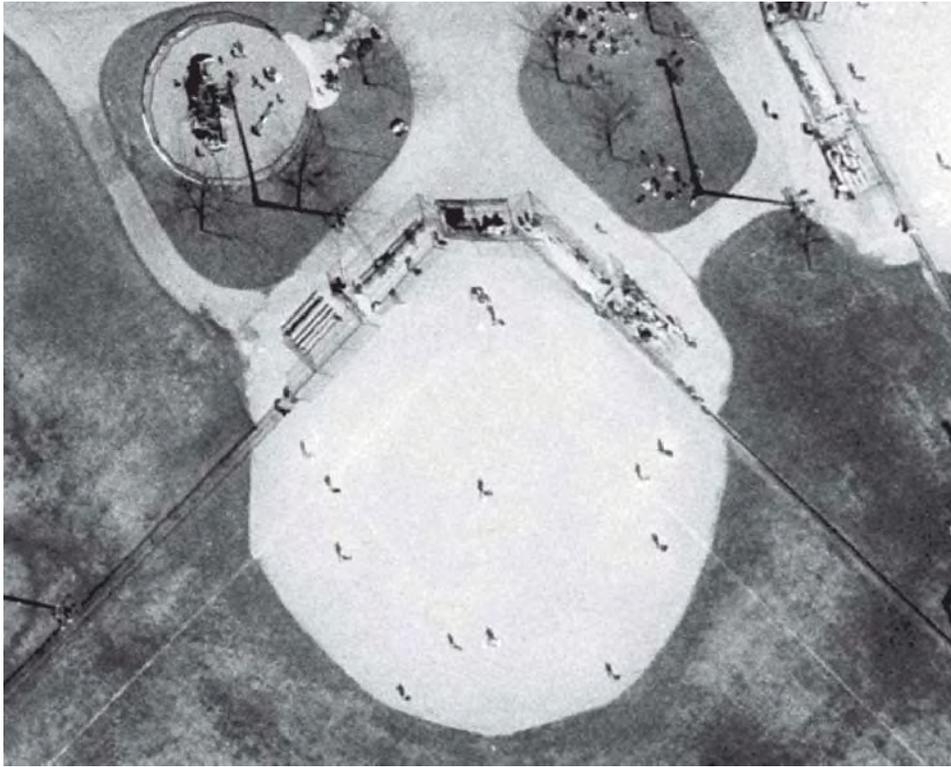
1. There is a core set of attribute data for each dataset that we can all agree must be present, and beyond that there is optional attribute data that may or may not be provided by a given county.
2. We will use identical names for attributes having the same meaning, and these attributes will appear in the same order within a shared dataset.
3. All of our records need to contain a unique county identifier. We have decided to use the GNIS (U.S. Geological Survey Geographic Names Information System) county identifiers for this purpose. Counties can, and do, have (legitimate) duplicate property index numbers (PINs), so a county ID is needed when working with regional data.
4. When municipalities or school districts cross county boundaries, we need to spell their names identically in each county's dataset.
5. We will use shapefiles to share data since they represent an open standard and can be accessed by a large number of software packages used in dispatch and other emergency management software.
6. We will use identical metadata for shared attributes.
7. We will format address information using U.S. Postal Service standards.
8. We will comply with Illinois Department of Revenue guidelines for such items as permanent index numbers.

Meetings were held with adjoining counties including Kenosha and Walworth counties in Wisconsin and Kendall and Kankakee counties in Illinois. Further meetings are planned with additional neighboring counties in Illinois and Indiana. They have been invited to review and comment on the evolving standards before they are finalized with the hope that the area of cooperation will expand for mutual benefit.

All of the participants in this project are active ILGISA members and plan to share information about our progress with our GIS colleagues through ILGISA publications, conferences and the website. Because our work will ultimately benefit GIS staff in many municipalities, public safety agencies, health departments, emergency management agencies and dispatch centers, we have chosen ILGISA as a vehicle to provide progress reports.

Richard Hilton is the GIS Manager at Lake County.

Interesting Aerial Photography



City of Rockford GIS Manager Chris McGarry submitted this grayscale image, which portrays "bases loaded" during a softball game at the SportsCore recreation center in Rockford, IL [89 3' 45" W // 42 19' 47" N]. The orthophoto was taken using standard methods on April 8, 2001 with a 6-inch pixel resolution.

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