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MN GIS/LIS Consortium  
**Fall Conference Taking Shape**  
By Sally Wakefield, Conference Chair

Although summer has only just arrived (finally!), many of us are already thinking ahead to the fall conference. The 15th Annual Minnesota GIS/LIS Consortium Conference is taking shape and those of us working on organizing the event are excited about the planning so far, and the new ideas being implemented into this year’s conference!

The conference will again take place during the first week in October in St. Cloud. The conference and workshop dates are **Monday October 3 - Wednesday October 5**, though next year the conference will move back to the Wednesday - Friday format. Below are a few of the conference highlights we would like to share with you!

**Workshops:** Many thanks to those of you who answered the workshop survey and helped us define a workshop slate with member input. The result is an excellent blend of workshop offerings. Topics range from software-specific lessons to open source applications, beginner to advanced. The goal is to offer a large range of topics to satisfy the needs of our diverse membership.

The workshops will be held on Monday, October 3. This year all workshops will be held at St. Cloud State University using the SARC labs and conference facilities at the University’s Atwood Center. This will allow all participants to attend workshops in one location. Check-in, parking and a continental breakfast will be available that morning at the St. Cloud Civic Center. The Consortium will furnish transportation to and from the University.

**Sessions:** Again, thanks go out to those of you who submitted abstracts for the conference. The response was overwhelming! The Sessions Committee is currently reviewing and scheduling presentations into tracks. Due to the number of fine submissions, we will be adding an additional track to the conference schedule. While not every abstract will be placed, we are working hard to include as many as possible. In addition a student track has been organized that includes a competition among our scholarship students (see accompanying article in this newsletter).

**Plenary Sessions:** Karen Siderelis, GIO and head of the National Geospatial Programs Office for the U.S. Geological Survey, will open the conference with the keynote address. Karen was the first national officer to be given the title GIO (Geographic Information Officer) in 1999, and her experience stems from her history in State GIS coordination. Federal GIS management affects all of us. Karen will speak to changes in store at the USGS, the growth of federal geospatial programs, and how these changes are likely to play out locally.

During his day job, Rob Nurre is a Land Records Manager for the State of Wisconsin’s Public Lands Commission. In his spare time Rob is the “Surly Surveyor,” assuming the dress and personality of the original public land surveyors. During in the mid-nineteenth
century, surveyors sub-divided the state of Minnesota, at that time mostly wilderness, in preparation for settlement. Using the records from that era, Rob will introduce us to the surveyor who measured and mapped the area we now know as St. Cloud. Rob appeared at a couple of our conferences in the early 1990s and helped us understand the Public Land Survey System, the basis of all our land records. His presentations are enlightening and highly entertaining. This is one you will not want to miss!

**Events:** There will be plenty of delicious food and good conversation throughout the conference, but none as fine as during the vendors reception on Tuesday evening. The reception promises to have the tastiest morsels, the liveliest of discussions, and of course a cash bar. Following the reception, The Boreal Brewers of Bemidji will return to the conference to conduct the annual beer tasting event. GeoComm will be hosting this event at their beautifully renovated facilities in the historic Lahr building, downtown St. Cloud. Entertainment to follow the Monday workshops is in the planning stages – stay tuned!

Excellence among us will be honored during the awards portions of our luncheons both days, and a good selection of prizes will be given away during the vendor reception and after the business meeting that closes our conference on Wednesday.

**Registration:** Online conference registration will open late July. We have worked hard to keep the rates stable this year while providing a top-notch conference experience. In honor of the 15th Annual Conference the Consortium is inviting people who haven’t attended the conference in the past, or at least in the past three years, to take advantage of a special “newcomer” rate. This may be the perfect opportunity for those who only use GIS part time or are new to GIS to attend and experience all the conference has to offer. Please help us “spread the news” about this limited opportunity!

For more details about the conference, watch for the preliminary program to hit your mailbox later this summer!

Please feel free to contact me with any conference related questions, comments or suggestions at conference2005@mngislis.org. I hope to see you all in October!!

**Scholarship Contest Heats Up**
By Will Craig and Banette Kritzky

For this year, 13 students from 10 institutions of higher education in Minnesota will be competing for cash prizes at the 2005 GIS/LIS Conference in St. Cloud. All of these students are already scholarship winners – having been selected to represent their schools at the conference. As such, each will receive a certificate, free conference registration and, for those traveling more than 75 miles to the conference, free lodging.

The students will be competing for cash prizes worth $3500. Each will be presenting their work at the conference. They will be judged on content and quality of the presentation. Awards will be made at the conference closing luncheon, Wednesday, October 5.
Graduate Student. Written paper and oral presentation. $1250 top prize.
Minnesota State University, Mankato
St. Cloud State University
St. Mary’s University of Minnesota
University of Minnesota, Twin Cities

Undergraduate Student. Oral presentation. $1000 top prize, $750 for second place.
Bemidji State University
Macalester College
Minnesota State University, Mankato
St. Cloud State University
St. Thomas University
University of Minnesota, Duluth
University of Minnesota, Twin Cities

Associate Degree. Poster presentation. $500 top prize.
Anoka Ramsey Community College
Fond du Lac Community College

State

LMIC’s Budget Partially Restored

The Land Management Information Center’s budget has been set for the next two years. The budget compromise reached by the legislature partially restores the 75% funding cut recommended in the Governor’s original proposal (see article <http://www.mngislis.org/newsletter/issue40/Governor_Proposes_to_Cut_LMIC_Budget_75_Percent.htm> in the spring newsletter). The final cut averages about 30% for the 2006 and 2007 fiscal years (7/1/05 through 6/30/07). However, the bill (HF 1481) retains the full 75% funding cut for the 2008 and 2009 fiscal years, setting LMIC’s “base budget” at $258,000 a year. Normally, the base budget for 2008 would be the 2007 budget. In this case, HF 1481 provides only a short-term fix that will need to be addressed in future legislative sessions.

So what does this mean for LMIC services? With supplemental funding from grants and cost reduction measures, the budget will support LMIC’s core commitments to GIS coordination and Clearinghouse activities for the next two years. The budget cut will result in some reduced support for other LMIC programs, including the Minnesota Environmental Atlas and Datanet. LMIC’s contract services will be unaffected.

Faced with a disastrous budget prospect last January, even partial restoration of LMIC’s budget was a major success. Restoring LMIC’s budget to a viable, though reduced, level would not have happened without support from those who lobbied on LMIC’s behalf. LMIC staff deeply appreciates the tangible and emotional support offered by the GIS community and pledges its commitment to justifying the vote of confidence through continued service.
Reorganization Creates Office of Geographic and Demographic Analysis

On June 6, the Department of Administration created a new Office of Geographic and Demographic Analysis that includes LMIC, the State Demographer, the State Archeologist, and the Environmental Quality Board. GDA brings together the department's programs that provide coordination, data, and expertise to help guide development around the state and confirms the important role of geospatial technology. David Arbeit, previously LMIC's Director, was named Director of the new office.

Minnesota’s High-Resolution NHD is now complete
By Susanne Maeder, Land Management Information Center and Jeff Simley, USGS Mid-Continent Mapping Center, Rolla, MO

As of March 2005, Minnesota has border-to-border coverage of the High-Resolution National Hydrography Dataset. High and medium resolution NHD datasets can be downloaded in a variety of formats from http://nhd.usgs.gov

The National Hydrography Dataset is a federal framework data set that includes:

- River and lake features for mapmaking
- A national stream addressing system
- A modeling network for navigating upstream/downstream
- A maintenance infrastructure

Originally developed at a medium-resolution (1:100,000-scale) through a cooperative effort between the U.S. Geological Survey and the U.S. Environmental Protection Agency, NHD combined the hydrography linework of the USGS Digital Line Graph data with the reach identification and networking capability of EPA’s Reach File 3. The need for more detailed information and partnerships among federal, state, and local agencies is driving the production of the high-resolution (1:24,000-scale) NHD.

Minnesota’s high-resolution NHD is built upon the Minnesota Department of Natural Resources’ 1:24,000-scale streams and lakes linework. NHD was produced in partnership between the USGS, the U.S. Forest Service, the Minnesota Land Management Information Center, the Minnesota Pollution Control Agency and the Spatial Analysis Research Center at St. Cloud State University. MPCA, USGS, EPA and USFS provided the funding for the three Minnesota organizations to do much of the production work. Production work was also performed by the USGS Mid-Continent Mapping Center in Rolla, Missouri and its contractor/partners SAIC and Sanborn Colorado, LLC, as well as the USGS Water Resources Office in Mounds View, Minnesota. The overall effort was managed by the Mid-Continent Mapping Center. Earlier work to create and improve the state’s 1:24,000-scale rivers and lakes linework was supported by DNR, EPA, MPCA, the Metropolitan Council, SARC, the U.S. Fish and Wildlife Service, and the Basemap Project at the Minnesota Department of Transportation. These GIS layers were used in the production of Minnesota’s high-resolution NHD.
NHD data is used in a variety of applications including the mapping of impaired waters in cooperation with EPA. The strengths of NHD are its consistency across state boundaries and its network navigation and standardized nationwide addressing capabilities. In addition, many tools and ancillary data are being developed nationally to further improve water management and water-related mapping.

A tool of particular importance is the Reach Indexing Tool (RIT) developed by EPA. RIT enables points, line segments and polygons representing the geographic extent of information associated with a surface water feature to be referenced to NHD. These referenced entities, representing a feature or activity associated with a surface water feature, are identified as “events” on the hydrography network. The “event” concept, located by a combination of Reach Identifier and measurement along the Reach, provides a hydrographic addressing system, similar to a road addressing system for transportation networks. The linear addressing (or reach indexing) function allows users to tie river-related data (water quality information, gages, monitoring locations, dams, NPDES discharges, fish habitat improvement areas, spills, etc.) via indexed “events” to the river network itself. Lake information – pertaining to a portion of a lake or an entire lake – can also be indexed.

USGS and EPA are now working with the State of Minnesota to implement a stewardship program to keep NHD current and accurate.

For further information about the High Resolution NHD and its application in Minnesota, contact Susanne Maeder, LMIC (susanne.maeder@state.mn.us), Mark Olsen, MPCA (mark.olsen@state.mn.us) or Ron Wencel, USGS, Mounds View, Minnesota (rwencl@usgs.gov).

**MnDNR Web Mapping Services**

By Tim Loesch, Minnesota Department of Natural Resources

Some of you may have heard the acronym WMS lately and wonder how it relates to you. WMS stands for Web Mapping Services and it's a protocol for accessing GIS data from a web server via a standardized set of URL based requests. WMS is an image-based technology that delivers to the user an image - usually a jpeg or gif file.

At the DNR, GIS staff has been investigating WMS technology as a way of distributing increasing amounts of imagery - such as the Farm Service Agency, 2003-4 color DOQs – to an increasing user base both inside and outside of the DNR.

One of the big advantages of WMS is that you can access imagery without hosting it on your site. You don't have to load or process any data or wait for it to be delivered to you once it is available. This results in a significant savings in staff time and effort that it takes to integrate data into your organization.

WMS works by fulfilling a request for a set of data for an area of interest in the form of an image. All the geoprocessing, which may include clipping, mosaicing and projecting
the data, is done on the server side. The image that is returned is only as large as it needs to be based on the size of your screen so that slim file can be transferred quickly to your PC.

Based on the speed of the server and the network, WMS served images can be as fast, if not faster than local file-based images, especially when viewing large areas. As an example, you can view a statewide image of FSA data from WMS just as fast as you can view one square mile!

So what is a client? A client is a program that can request an image. Several clients are currently available:

ArcGIS 9 with Service Pack 2
ArcGIS 8.x with the Interoperability Extension available for free on the ESRI website
The DNR WMS Client for ArcView 3.x
(www.dnr.state.mn.us/mis/gis/tools/arcview/extensions/wmsclient/wmsclient.htm)

What WMS services are out there? More and more WMS services are becoming available all the time. Here are a few:

Minnesota DNR Data Deli – This service provides a number of image-based layers for the state.
http://deli.dnr.state.mn.us/cgi-bin/wms?map=DELI_WMS_MAPFILE&

Available Layers:
1) USGS 1991 DOQs (3-meter)
2) Public Waters Inventory maps
3) GAP land cover
4) 2003 FSA color DOQs
5) 24K, 100K, and 250K DRGs

LMIC – This service provides a suite of raster and vector data in Minnesota.

Available Layers:
1) Place names
2) Township/Range/Section
3) Municipalities
4) County borders
5) 2003 FSA color DOQs
6) USGS 1-meter DOQs (metro area)
7) Landsat (metro area)
State of Iowa – this site provides access to a variety of raster-based data for Iowa.
http://cairo.gis.iastate.edu/server.cgi?wmtver=1.0

Available Layers:
1) Shaded relief
2) 24K, 100K DRGs
3) Historic vegetation
4) 1992 land cover
5) 2002 land cover
6) GAP land cover
7) 2002 black-and-white DOQs
8) 2002 color infrared DOQs
9) FSA 2004 color DOQs

EROS Data Center
This service provides two URLs that distribute imagery for selected cities across the U.S. with varying cell resolutions and coverage areas. High resolution 1- and 2-foot imagery from the St. Paul-Minneapolis metropolitan area are available from these sites.

URLs =

For more information consult the ArcGIS documentation or download the DNR WMS Client for ArcView 3.x and give it a test run.

New Beta DNR Garmin GPS Extension Released
by Chris Pouliot, Minnesota Department of Natural Resources

A new BETA release of DNRGarmin 5.0 is available on DNR’s website for download at www.dnr.state.mn.us/mis/gis/tools/arcview/extensions/DNRGarmin/DNRGarmin.html. This extension was built to provide users the ability to directly transfer data between Garmin GPS handheld receivers and various GIS software packages. The extension currently works with ArcView, ArcMap (8.x and 9.x), LandView and ArcExplorer.

DNRGarmin allows a user to use point features (graphics or shapefile) and upload them to the GPS as waypoints. Line and polygon graphics or shapes can be uploaded to the GPS as tracklogs or routes. Conversely, waypoints, tracklogs, and routes collected using the GPS can be transferred directly to ArcView/ArcMap/Landview and saved as graphics or shapefiles.
Some of the functionality highlights of the new beta release include:

- ArcGIS compatibility (8.x and 9.x)
- Save to shapefile/graphics/geodatabase feature class
- Load from layer/graphics
- Real-time tracking
- Expanded help documentation
- A variety of bug fixes and minor enhancements. See the upgrade log in the documentation for more.

Since this is a BETA version you may see a bug or two. We are interested in hearing about bugs. To ask questions or report a bug, please post your request on the new DNR Garmin WIKI Discussion page at http://156.98.35.198/cgi-bin/wiki.pl?Minnesota_DNR_GIS_Wiki. Once on the page, click on the DNR Garmin Discussion link.

Thank you to all who have filled out our user survey. We've received 1000+ responses from over 110 countries. We are reading your comments, and though we can't respond to everyone directly, we do try to incorporate suggestions into the final product.

The extension transfers data between Garmin GPS receivers and a variety of software packages.
Data Deli News
By Tim Loesch, Minnesota Department of Natural Resources

Since the release of the latest version several months ago, the Data Deli (http://deli.dnr.state.mn.us/), DNR’s data delivery website, has received a high amount of activity. Here are the answers to two frequent questions:

Pop-up Window Blocking
Some users have experienced problems accessing the interactive map selecting tools, and most of these have been traced to security provisions in web browsers. Please be aware that the Data Deli makes extensive use of JavaScript and popup windows. If your browser is set to block pop-ups or JavaScript has been disabled, the Deli won’t work for you. Typically what users see is a blank or gray image where the outline of the state should be. Make sure your browser is configured correctly using the instructions available on the Deli main page.

FSA 2003 Color DOQs and ECW Format
The FSA imagery has been compressed to ECW format using ERMAPPER software. ECW is a wavelet compression that greatly reduces the size of the images and provides excellent draw times. To be able to use this imagery in ArcGIS or ArcView 3.x, you require a plug-in extension that is available for free at ERMapper’s website via the following links:

ArcGIS plug-in:

ArcView 3.x extension:

Animal Finder Web Mapping Site at the DNR
By Tim Loesch, Minnesota Department of Natural Resources

Want to find out where the ospreys are? Want to know what turtle species live in your county? Now you can look up all kinds of Minnesota critters on AniMap, a new interactive tool on the DNR website. Based on the findings of the Minnesota County Biological Survey team of scientists, AniMap gives everyone from birders to educators to zoologists an easy way to located common animals in the state.

Visit http://www.dnr.state.mn.us/maps/animap for more details.
Governor's Council

Council's Website Takes on a New Look
By Bill Swing, IT Director, Wright County

The website for the Minnesota Governor’s Council on Geographic Information, www.gis.state.mn.us, has taken on a new look over the past year.

It was apparent early on that the site needed some major repairs. Visitors were having difficulty navigating and locating desired information. The Outreach Committee met to define what was wrong with the site and determine how to fix it.

The purpose of the site was first clarified – the site should support the mission of the council and its committees. Its function should be considered in tandem with the council’s promotional materials and newsletters in promoting GIS in Minnesota as stated in the council’s mission statement. The committee then clarified the target audiences to be GIS stakeholders – those most likely to benefit from GIS, GIS professionals, and IT professionals.

The following significant changes were made to support these guidelines.

- **New Calendar**
  The old tabular method of publishing council events has been replaced by a “Gregorian” calendar that provides a more intuitive means of finding the date and time of upcoming events.

- **New Publications Page**
  Council publications have been classified under four document types and consolidated under a single “Publications” page:
  - Annual reports
  - Strategic planning
  - Development guidelines
  - Promotional materials

- **Committee Pages**
  Each council committee maintains information on their committee’s activities and other pertinent information. Committee pages generally contain the following information:
  - Chair and co-chair
  - Work plan
  - Publications
  - Minutes
  - Workgroups
  - Related resources
  - Related links
Resources
Links to significant information that promotes the Council’s mission have been grouped under the category “Resources” accessed from the home page. Tabs provided are:
- Data
- Mapping
- Organizations
- Grant opportunities

And finally, the latest GIS news of the day can be found on the center of the homepage.

The Outreach Committee is always looking for better ways of communication. Ideas are welcome. Please submit suggestions, ideas, or comments to Outreach Committee Chair, Will Craig, University of Minnesota, (612) 625-3321; wcraig@umn.edu

Emergency Management for GIS Professionals
By Rick Gelbmann, Metropolitan Council

More than 60 GIS professionals attended the Emergency Management for GIS Professionals workshop held at the New Brighton Public Safety Center on April 25, 2005. Four presentations were made by emergency managers to cover managing emergencies from local, regional, state and federal perspectives.

Although being prepared for emergencies is important to all of us, most first-responders come from local government agencies. Speakers Rick Larkin, Emergency Manager for the City of Burnsville, and Kim Ketterhagen, Regional Program Coordinator, Metro Region Homeland Security and Emergency Management Division, provided a city and regional perspective. They described three priorities when responding to an incident: 1. life safety; 2. incident stabilization; and 3. property and environmental conservation. All three of these priorities can be aided by timely and accurate information.

Coordination of information is a prime concern of state and federal agencies. Lieutenant Eric Waage, Minnesota National Guard, and Captains Steve Swazee and Brad Gawboy, Navy Emergency Preparedness Liaison, U.S. Navy Reserve, gave state and national perspectives. Being called to an unfamiliar location to respond to an incident makes it difficult to coordinate with local responders. Having accurate information that uses standards shared by all agencies is critical.

Members of the MetroGIS Emergency Preparedness (EP) Workgroup and the Governor’s Council on Geographic Information EP Committee organized the workshop. The Minnesota GIS/LIS Consortium supported this free workshop with announcements and a grant to pay expenses. Homeland Security and Emergency Management Division provided the facility and some of the presenters.

Emergency Management for GIS Professionals is part of one goal of the MetroGIS and Governor’s Council EP groups. This goal is to identify GIS professionals interested in emergency management issues and help them communicate with emergency managers.
For more information about GIS and Emergency Management visit the following sites:

Governor’s Council:  www.gis.state.mn.us/committe/emprep/
MetroGIS:  www.metrogis.org/data/info_needs/emergency_prep/index.shtml

**MetroGIS - Sharing Geospatial Data across Boundaries**

**MetroGIS Explores Regional Occupiable Units Data Solution**
By Jeanne Landkamer, MetroGIS Consultant

MetroGIS is exploring a regional strategy to capture and maintain “situs” addresses for all occupiable units – both residential and nonresidential – in the seven-county area. (“Situs” means “site of,” or location, as opposed to mailing addresses.)

The goal of a regional solution is to minimize duplication of effort at the local level and maximize consistency of address data so that the data can be shared readily by government interests that serve the seven-county region.

Addresses of all occupiable units is one of the common priority information needs first identified by MetroGIS stakeholders in 1996.

The MetroGIS Address Workgroup is working closely with the Metropolitan 911 Board, which has a significant future need for a regional “situs” address solution. The address solution would further enhance the proposed enhanced street centerline dataset, also being pursued by MetroGIS (see related story <http://www.mngislis.org/newsletter/issue41/New_Street_Centerline_Dataset_Would_Be_E911_Compatible.htm>).

The Address Workgroup, formed in March 2004, conducted an investigation of how and by whom addresses are created, changed and used at different levels within the jurisdictions of each of the seven counties. Workgroup members interviewed numerous county and city personnel who are responsible for processes involved in the capture and maintenance of address data records. As a result, the group reached the following conclusions:

- Most addresses are created at the local (city) level.
- This results in many, many address authorities with many different processes.
- Address authorities seem to update their address records (digital or paper) right away.
- Address data flow is fairly complicated and is different in every location.
- Address data do not flow consistently from different sources (e.g., cities to a school district).
- There is a desire at the county level (and beyond) for a single source for address data.
- Many authorities mentioned wanting a standard process.
- A single best source for address data would benefit many people.
The proposed vision for the initial regional solution assumes multiple avenues for creating, maintaining and storing address point data, and providing it to the regional dataset. Local procedures and results pertaining to naming of streets and assignment of address numbers would be retained. However, a standardized address data transfer format will be needed to implement the solution.

The workgroup is considering a pilot study to frame compatibility issues and identify viable solutions. The Ramsey County GIS Users Group is exploring building an occupiable units database for the county, which could serve as a pilot project for the regional solution.

The dataset would ultimately be created by cities in the region on a voluntary basis, unlike most other regional datasets endorsed by MetroGIS which are largely in the realm of county government (e.g., parcels). Because of this, the workgroup envisions that some kind of online data maintenance application will be needed to allow participation by cities with minimal GIS resources.

The workgroup’s purpose, membership, workplan, meeting agendas and summaries, findings of investigations, etc., can be viewed at www.metrogis.org/data/info_needs/street_addresses/add_wkgp.shtml. The group expects to have a white paper ready for discussion at the October 2005 GIS/LIS Consortium annual conference. A decision on whether to implement the solution would subsequently be made by the MetroGIS Policy Board.

New Street Centerline Dataset Would Be E911 Compatible
By Jeanne Landkamer, MetroGIS Consultant

MetroGIS is coordinating the development of a new regional street centerline dataset that would be compatible with the needs of the emergency response community.

Most of the public safety answering points (PSAPs) that serve the seven-county area use GIS mapping applications to accurately locate calls and dispatch emergency services, especially for wireless calls. Many PSAPs currently use or modify the regional centerline dataset endorsed by MetroGIS, which is created and maintained by The Lawrence Group (TLG).

However, the TLG dataset does not satisfy some of the 911 response community’s business needs. One of the largest “needs gaps” is the dataset’s lack of compliance with the Master Street Address Guide (MSAG) used by phone companies to validate address information before sending it to 911 dispatchers. Compliance would require adding the address ranges defined in the MSAG, and using road naming conventions endorsed by the National Emergency Number Association, which creates national E911 GIS data standards.

Dispatchers and emergency responders also need the ability to locate emergencies in areas that are not currently represented in the TLG dataset, such as private developments,
utility access roads, perimeter roads for shopping malls, and dirt or gravel roads in new developments.

In response, several counties and cities are creating their own street centerline data for E911 and other purposes. A collaborative, regional effort could avoid costly duplication of effort and achieve cross-jurisdictional operability, explained Gordon Chinander, co-facilitator of the MetroGIS E911 Address and Street Centerline Workgroup and GIS Coordinator for the Metropolitan E911 Board.

“We will be expanding the traditional definition of a street centerline, but we will not be changing the data model paradigm of the TLG dataset,” Chinander said.

Like the regional parcel dataset, the new centerline dataset would likely be a compilation of multiple street centerline datasets provided by local data producers. These local datasets would be collected and reassembled to form a seamless region-wide layer. The regional dataset would utilize data standards, yet to be established, for both the spatial and attribute components to ensure MSAG compliance and compatibility between producers. The MetroE911 and MetroGIS communities are charged with developing the standards.

A unique aspect of the proposed address dataset as envisioned by the workgroup is that individuals who assign addresses and street names at the local level would simultaneously update the regional dataset alongside official permitting processes. A backup solution would be developed for circumstances where local officials are not involved, for whatever reason. As with all MetroGIS-endorsed solutions, participation would be voluntary.

The Metropolitan E911 Board would be the regional custodian of the dataset. Procedures for maintaining the street centerline data would be coordinated with procedures to maintain the proposed regional occupiable unit regional dataset (see related story).

Another goal of the workgroup is to further the integration of locally produced street centerline data into U.S. Census Bureau TIGER files, which currently lack spatial accuracy and completeness (see accompanying graphic). Inconsistencies between local and federal data lead to major inefficiencies and costly duplication.

Both the MetroGIS Policy Board and the Metropolitan E911 Board have reviewed the proposal and provided comments on the vision. Workgroup members include employees of Dakota, Hennepin and Scott counties, Minneapolis, LOGIS, the Metropolitan E911 Board, and the Metropolitan Council. A prototype dataset will likely be ready sometime in mid-2006. A decision on whether to implement the solution would subsequently be made by the MetroGIS Policy Board.
This map shows topological problems and spatial inaccuracies in U.S. Census TIGER data, shown in thick white lines over aerial photos and parcel boundaries in Dakota County.

**Local**

**Internet Mapping Applications Workshop a Success**
By Doug Bartels, GIS Coordinator, Richland County, North Dakota and Pine to Prairie GIS User Group Steering Committee Member

GIS professionals from around the region attended the Internet Mapping Applications Presentations (I-MAP) workshop last April at West Central Initiative in Fergus Falls, Minnesota. The event was hosted by the Pine to Prairie GIS User Group and funded through an event grant provided by the Minnesota GIS/LIS Consortium.
The event included one half day of HTML training on April 27 in the West Tool and Design computer lab in Fergus Falls. Bonnie Schillinger of the North Dakota State College of Science (NDSCS) Computer Information Systems Department provided instruction for the group of 13 attendees. For attending the HTML training, Jim Dahl of Douglas County won a gift certificate from NDSCS valued at $99 to use with any online course from ed2go.com or LEARNITonline offered through NDSCS Outreach. For more information on NDSCS College Outreach courses go to: www.ndscs.nodak.edu/outreach/.

The following day, attendees interested in Internet mapping applications sat in on four different product presentations. The products included in the presentations were ESRI’s ArcIMS, Autodesk’s Mapguide, Manifold GIS, and the University of Minnesota’s MapServer. Brian Armstrong and Scott Backstrom of Otter Tail County presented on ArcIMS, showing how the county uses it to produce and manage online maps for the public. Todd DeBoer of the City of Baxter and Adam Jonasson of the City of Grand Forks presented information on Mapguide, an Autodesk product (Autodesk also makes the popular computer aided drafting application, AutoCAD). Jim Dahl of Douglas County delivered his presentation on a small though robust GIS software with a built-in Internet mapping application called Manifold GIS. Christa Shostal and Mike Juvrud rounded out the mapping presentations with the University of Minnesota’s Open Source application of MapServer, highlighting its most enticing feature… it’s FREE.

Twenty-six GIS professionals from around the region attended the Internet mapping portion of the one and a half day event. Some attendees came from as far away as Winona and Grand Rapids, Minnesota and represented a diverse cross-section of organizations, from universities to private sector businesses and local, state, and federal government.

The event was a first of its kind for the Pine to Prairie GIS User Group which normally includes GIS related workshops and presentations during their quarterly meetings. “We had a lot of fun putting it together, especially since there seemed to be so much interest,” said Wayne Hurley of West Central Initiative, who provides staff support to the Pine to Prairie GIS user Group and was co-organizer of the event. “It makes it easy to put forth the effort when you know people are really interested and excited about what you’re doing for them.”

The Pine to Prairie GIS User Group helps facilitate interaction between GIS users in Minnesota, North Dakota and South Dakota, and is sponsored by West Central Initiative and numerous contributions from GIS firms throughout the region. For more information on the Pine to Prairie GIS User Group, including upcoming events and forum discussion topics, navigate to their website at http://gis.pinetoprairie.org.
Metro Regional Park Maps on the web

Looking for a regional park getaway in the Metro area? The Twin Cities Metropolitan Council has online maps [http://www.metrocouncil.org/parks/parks.htm] of the region’s park system. Metro maps are available for quadrants of the metro area or 69 more detailed map panels. The regional park system includes 43 parks and park reserves, 18 trails and four special recreation areas. These parks are operated by several partnering cities and counties, which also have direct links from the site. The maps also show state and national recreational facilities in the metro area. In addition, the site has links to:

- Proposed 2030 Regional Parks Policy Plan
- Order the printed map
- More about regional parks and the 2002 parks map
- Partnering city and county parks
- Regional Recreation Open Space Policy Plan (2001)
- Parks Commission meeting minutes and agendas
- Annual use estimate of the metropolitan regional parks system for 2004
K-12 Education

2005 GIS Professional Development Opportunities for Educators
By Sara Damon, Stillwater Area High School

The Minnesota Alliance for Geographic Education (MAGE), housed at Macalester College, is an organization of educators and professionals who share a commitment to quality education and the expansion of geographic education. The Alliance coordinates geography-related events such as the Minnesota State Geographic Bee, the Geographer’s Fair and National Geographic’s Geography Action! program. MAGE promotes the development of Advanced Placement (AP) Human Geography courses at the high school level and sponsors quality professional development opportunities for educators during the school year and summer months.

Along with information about all of these activities, MAGE’s website provides access to hundreds of classroom-ready geography lesson plans: www.macalester.edu/geography/mage/.

In 2005, MAGE and Macalester College will offer the following GIS education opportunities for educators:

Firewise Teacher Trainings
Three dates and locations:
- June 20 to 22 at Macalester College, St. Paul, MN
- June 27-29 at Itasca Community College, Grand Rapids, MN
- August 8-10 at Bemidji State University, Bemidji, MN

The training is free to educators, is co-sponsored by the Minnesota DNR Firewise Program, and is correlated to new Minnesota Academic Standards in Geography and Science. Educators will receive GIS and GPS training, AtlasGDS software, Firewise curriculum, CEUs, a stipend, and access to laptop computers, GPS units and Minnesota DNR support to carry out a Firewise project. A Firewise project is a collaborative project between students, the Minnesota DNR and the local fire department. Students use GIS, GPS and fieldwork to assess their community for wildfire risk and communicate the results of their study to local homeowners and the community.

For more information and application materials, see: www.macalester.edu/geography/mage/teachers/institutes/firewise/index.htm

GeoTech Minnesota 2005 Workshop for Educators
Saturday, November 19, Como Park High School
740 Rose Avenue West, St. Paul, MN

Looking for a GIS Day related event to participate in? Professional GIS exhibitors encouraged! If interested, contact Sally Wakefield at sally.wakefield@dot.state.mn.us
This one-day workshop will focus on Geographic Technologies (GeoTech) including Geographic Information Systems (GIS), Global Positioning Systems (GPS), and satellite imagery. Presentations and displays will feature free and low-cost options for integrating GeoTech into the K-12 curriculum. Sessions are designed for both beginning and intermediate users.

For more information and application materials, see: www.macalester.edu/geography/mage/teachers/index.htm

Higher Education

Articulation Agreement between Anoka-Ramsey and Minnesota State University, Mankato
By Martin Mitchell and Banette Kritzky

An articulation agreement has been approved tentatively by the Geography Departments at Anoka-Ramsey Community College http://www.ar.cc.mn.us/Geog/ and Minnesota State University, Mankato http://www.mnsu.edu/geog/, effective August 2005. The agreement will allow students from Anoka-Ramsey with associates degrees in geography or GIS/cartography to transfer directly into the Geography Department at MSU where they will pursue a bachelors degree in geography with a likely focus on GIS, GPS and remote sensing related technologies.

The departments are quite excited about the opportunities for students. Anoka-Ramsey has a number of introductory and applied GIS/cartography courses which will provide a solid foundation for taking more advanced GIS, GPS and remote sensing courses at Minnesota State University, Mankato. Both institutions are eligible for Consortium scholarships, and participation by students from these programs in forthcoming GIS/LIS Conferences is expected to grow.

The University of Minnesota’s MGIS Program Offers GIS Courses to Enhance Your Professional Development
By Susanna McMaster, University of Minnesota

The Master of Geographic Information Science Program at the University of Minnesota will offer a number of GIS technology courses during the Fall 2005 semester that may be of interest to members of the Minnesota GIS community. These courses include:

- *Introduction to ArcInfo* (GIS 5571) taught by Mark Lindberg, Geography Department, University of Minnesota;
- *Desktop Mapping* (GIS 5573) taught by Catherine Hansen, Rowekamp Associates;
- *GIS and the Internet* (GIS 5574) taught by Steve Lime, Minnesota Department of Natural Resources;
- *Basic Spatial Analysis* (GIS 5555) taught by Dick Skaggs, Geography Department, University of Minnesota;
Individuals not formally admitted to the program can register for these GIS courses through the College of Continuing Education (CCE); for more information, please call CCE at 612-624-4000. It is also possible to register for graduate credit as a non-degree student; for details, please visit http://onestop.umn.edu/onestop/Registration/nondegree.html. To view the class schedule, please visit http://onestop2.umn.edu/courseinfo/classschedule_selectsubject.jsp?institution=UMNTC and select the appropriate term then “Geographic Information Science” for the meeting dates and times of these courses. Technology course descriptions are available at http://www.geog.umn.edu/graduate/mgis/Program/courses.htm#2

If you have any questions regarding technology course offerings or the MGIS program, please contact Susanna McMaster, Associate Director of MGIS at 612-624-1498 or mcmas002@umn.edu

**Update on the Saint Mary’s University GIS Program**
By John D. Ebert, Saint Mary's University

**Saint Mary's University of Minnesota M.S. GIS Program Supports MSGIS Program Member for Tsunami Relief in Indonesia**

The Resource Analysis Department’s current learner/adjunct instructor, Jay Meehl, departed for Jakarta, Indonesia as a tsunami relief volunteer. Jay is offering his GIS skills and will be inventorying, preparing and finalizing UNJLC Indonesia, tsunami relief data and products.

Jay is currently in Banda Aceh. He has commented that he has been very busy creating logistic maps of sea ports, airfields, and transportation routes. He is also hoping to get out to some of the islands to collect GPS points to help the British Red Cross.

Flooded rice fields
He has been overseas now for almost two months and will remain in Indonesia for several more weeks. He will then return to Saint Mary's to complete his Masters Degree in Geographic Information Science.

You may read a full text news article about Jay at: www.gis.smumn.edu/pages/News/learners.html

Jay Assisting Indonesian Staff Members.

Program News

The Winona program’s 12 month ‘fast-track’ M.S. GIS degree has been very successful during the last academic year. Twelve month program learners are completing degree coursework this summer and many are already finding key employment opportunities after just beginning the program last fall – many who began with few or no GIS skills.

Alison Wieckowicz, a current 12 month M.S. GIS degree candidate, offered comments regarding her experience with the accelerated degree option:

"I have found many educational advantages to completing the fast-track program. The intensity of the coursework facilitates a learning community where students work together to complete tasks with the help of instructors. Although the coursework is intensive, the fast-track program promotes curriculum overlap among courses which encourages strong understanding, while still covering a wide range of subjects."

You may view the fast-track academic sequence by visiting the RA homepage at: www.gis.smumn.edu

Fall Course Offerings

The following courses are scheduled for Fall 2005 in Minneapolis:

RA554 GIS Analysis (3 cr)
RA660 Introduction to ArcGIS 9.1 (1 cr)
RA560 Introduction to ArcView 3.x (1 cr)
RA570 Advanced GIS (3 cr)
RA GIS Distance Learning Courses per degree requirements
GM/PRM (General Management/Project Management) courses per degree requirements
In Winona, Fall 2005 courses are:

RA554 GIS Analysis (3 cr)
RA645 Project Management (2 cr)
RA556 Spatial Data Methodology (2 cr)
RA660 Introduction to ArcGIS 9.1 (1 cr)
RA560 Introduction to ArcView 3.x (1 cr)
RA536 Communication Strategies/Grantwriting (3 cr)
RA519 Statistical Analysis (3 cr)
RA549 Fundamentals of Business (1 cr.)
RA574 Entrepreneurship and Small Business (3 cr.)
RA577 Market Research (3 cr.)
RA586 Field Methods (3 cr)
RA GIS Distance Learning Courses per degree requirements

Contact Information

For more information on either the Master of Science in Geographic Information Science (MSGIS) degree or the University-accredited GIS Certification, please visit our website at www.gis.smumn.edu or contact John Ebert, Assistant Program Director, at jebert@smumn.edu or at 507-457-6961.

Federal

SSURGO Update
By Danielle Evans, Natural Resources Conservation Service

At this time, all counties in Minnesota have tabular soils data and 53 counties have complete Soil Survey Geographic Database (SSURGO) coverage. Since the beginning of 2005, SSURGO has been completed for Blue Earth, Carver, Douglas, Nobles, Olmsted and Stearns counties. A status map can be found at www.mn.nrcs.usda.gov/technical/soils/images/maps/mnssurgo.pdf. Both tabular and spatial datasets are available at the Soil Data Mart (http://soildatamart.nrcs.usda.gov); users can subscribe to be notified whenever updates are available.

NRCS is also creating a national online web application for viewing and analyzing SSURGO data, called the Web Soil Survey. This will be an interactive interface where it will be possible to use the official U.S. Department of Agriculture soils information in GIS applications and/or report generation. Using the Web Soil Survey, users will be able to specify an area of interest, thus enabling them to query map units that cross political boundaries. Output capabilities will include printing, writing to CD, downloading or re-accessing online. The Web Soil Survey’s projected release date is summer 2005.
USGS Director Resigns
Adapted from USGS press releases

Dr. Charles G. Groat resigned as Director of the U.S. Geological Survey effective June 17, 2005. Dr. Groat was confirmed as the 13th Director of the USGS on November 13, 1998. He plans to accept appointments as the Jackson Chair in Energy and Mineral Resources in the School of Geosciences and the founding Director of the Center for International Energy and Environmental Policy at the University of Texas at Austin.

On June 13, 2005, Interior Secretary Gale Norton named Dr. P. Patrick Leahy as acting director of USGS. A permanent replacement for USGS director must be nominated by President Bush and confirmed by the U.S. Senate. Dr. Leahy is currently the associate director for Geology of the USGS. He has responsibility for federal Earth-science programs, which include worldwide earthquake hazards monitoring and research, geologic mapping of land and seafloor resources, volcano and landslide hazards, and assessments of energy and mineral resources. He also is responsible for all USGS international activities.

Additional information about these announcements can be found at:
www.doi.gov/news/05_News_Releases/050609c
www.doi.gov/news/05_News_Releases/050613a

New Geologic Map of North America Illustrates Discoveries and Advances in Geoscience
Adapted from USGS Press Release

The last definitive geologic map of North America was published in 1965 before the theory of plate tectonics was widely accepted, back in the days when impact craters were known simply as "anomalies" and knowledge of ocean floor geology was in its infancy. To update the map, the Geological Society of America (GSA) has recently introduced the 2005 Geologic Map of North America.

A work of beauty as well as science, the map is printed in 11 colors with approximately 700 shades and patterns. It distinguishes more than 900 rock units, 110 of which are off-shore. It depicts more than seven times as many on-land units as the 1965 map. Perhaps the most significant additions are detailed features of the seafloor, including spreading centers, seamount chains, and subduction zones.

"Our knowledge of the Earth and how it works has grown exponentially over the last 40 years," said Jack Hess, Executive Director of GSA. "We are pleased and excited to offer this great mapping achievement to the scientific community."

This map is the result of a cooperative effort by GSA, the U.S. Geological Survey (USGS), the Geological Survey of Canada (GSC), and the Woods Hole Oceanographic Institution (WHOI). John C. Reed Jr. (USGS) and John O. Wheeler (GSC) compiled the
on-land geology, while Brian E. Tucholke (WHOI) mapped and compiled the seafloors. The Pikes Peak Lithographing Company, Colorado Springs, Colorado, printed the map.

More than twenty years in the making, this 3-sheet map which measures 74” x 39” and is at a scale of 1:5,000,000, illustrates approximately 15% of Earth's surface. It spans an area from the North Pole to Venezuela and from Ireland to Siberia.

Unlike its predecessor, the map is not a static end-product. Because it was produced with digital technology, a digital database is planned by David Soller of USGS. According to Soller, “Geoscientists for years to come will be able to access and analyze the data behind the map. This will stimulate additional research, expanding our body of knowledge at an increasingly rapid rate.”

The map is available for purchase through the Geological Society of America. For additional information visit: [www.geosociety.org/bookstore](http://www.geosociety.org/bookstore) or contact GSA Sales and Service, gsaservice@geosociety.org, 1-888-443-4472. This product comes rolled or folded. For the rolled version, the member price is $125.00 and the non-member price is $155.00; the folded version is $5.00 less for both members and nonmembers.
Enhanced 1857 Library of Congress Map of the United States Available and Online
Adapted from USGS-ESIC Information Bulletin

The newest map from the U.S. Geological Survey has been digitally enhanced and reproduced by the USGS from the original, which is held in the collection of the Library of Congress, Geography and Map Division. The original map was drawn by George W. Colton and engraved by John M. Atwood, with extensive border design and engraving by W.S. Barnard. This is one of several maps published in New York by J.H. Colton and Company in the 1800s.

Displayed on the map are: The United States of America, The British Provinces, Mexico, The West Indies and Central America, with parts of New Grenada and Venezuela, as they were in 1857. There are two insets which show a map of the Atlantic Ocean with both the American and European ports, and a reproduction picture of the Isthmus of Panama. The border around the map also includes several insets such as Willamette Falls in Oregon, Valley of the Connecticut, the Bunker Hill Monument in Boston Massachusetts and the Cathedral in Mexico City.

This map measures approximately 36 x 46 inches and can be viewed by navigating through the Map Collections Homepage of the Library of Congress <http://memory.loc.gov/ammem/gmdhtml/gmdhome.html> or directly. <http://memory.loc.gov/cgi-bin/map_item.pl?data=/home/www/data/gmd/gmd370/g3700/g3700/ct000804.jp2&style=gmd&itemLink=D?gmd:1:./temp/~ammem_TY74::&title=Map%20of%20the%20United%20States%20of%20America.> It can also be viewed online through the USGS Store. <http://store.usgs.gov/> Online orders can be placed through the store: Stock # 113632, Price: $10.00 for the map plus $5.00 handling. For questions or to place an order by telephone, call the Earth Science Information Center (ESIC) offices at 1-888-ASK-USGS.
Other Places

Ten Ways to Support GIS Without Selling Data
By Bruce Joffe, GIS Consultant

Controversy has been raging for more than a decade on the appropriateness, legality, and effectiveness of public agencies selling their geodata. The problem often centers on the need to sell data to pay for GIS operations. A new group, the Open Data Consortium <http://www.OpenDataConsortium.org/>, examined this question.

They found most public agencies that sell data have not realized significant revenues, and some have even lost money. So the group began looking at other sources of funding to support GIS operations. Their funding sources fall into four categories:

- Revenue produced from existing taxes
- Revenue produced from service fees
- Cost savings
- Internal budgeting

For the complete story in the recent issue of the URISA Journal, see www.urisa.org/Journal/Vol16No2/Joffe.pdf

Adapted from UN and BBC websites

One Planet, Many People: Atlas of Our Changing Environment provides a comprehensive, visual presentation of scientifically variable information, on changes in the global environment—both the good and the bad—acquired and assessed through state-of-the-art remote sensing technology.

One Planet, Many People is intended for environmental policy makers, non-governmental organizations, the private sector, academics, teachers and citizens. This colorful and approachable atlas contains photographs, satellite images, maps and narratives that provide insights into the many ways people around the world have changed, and continue to change, the environment.

The main purpose of this hardcover, 332-page, large-format atlas is to document visual evidence of global environmental changes resulting from natural processes and human-induced activities. Special objectives of One Planet, Many People include:

- generating awareness of human interactions with the environment that alter the environment in demonstrable ways;
- providing scientific measurement of over-exploitation of the environment and consequences of such action.
To meet these objectives, the atlas provides:

- a collection of spectacular “before and after” satellite image pairs on various themes for 80 sites around the world;
- over 30 environmental case studies supported by narratives, images and ground photographs;
- a compilation of recently released environmental maps.


**Fourth Annual PPGIS Conference**  
by Will Craig, University of Minnesota

The 4th Annual Public Participation GIS Conference will be in Cleveland, Ohio, July 31 – August 2. This is a chance to find out what other governments and non-profits are doing to make maps and data more useful to the community. Denis Wood, author of *The Power of Maps*, is the keynote speaker.

For program details, see [www.urisa.org/PPGIS/2005/PPGISprogram.htm](http://www.urisa.org/PPGIS/2005/PPGISprogram.htm)