Fall 2011 **Issue 66**

GIS/LIS NEWS

The Newsletter of the Minnesota GIS/LIS Consortium

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MN GIS/LIS Consortium

From the Chair

By Sarah Schrader, 2011 Chair

Fall Conference and Workshops

The 2011 Fall Conference and Workshops are just around the corner and on-site registration is still available! I hope you will join us October 5-7 in St. Cloud where the conference will be held at the River's Edge Convention Center and the workshops will be held on the campus of St. Cloud State University. Visit our website to register and to view more information including the preliminary program listing sessions, workshops and exhibitors.

Board and Committee Participation

We are a volunteer-run organization and always need more people, new energy and fresh perspectives. Consider giving some of your time and skills to help with the Consortium's work, either by serving on the Board or on a committee. Open board positions this year are Chair-Elect, Secretary, Higher Education, Conference Chair-Elect, Local Government and At-Large. You can nominate yourself or someone else interested in supporting the GIS/LIS community anytime until November 4 using theonline nomination form. Please contact any Board member to ask questions about their position, find out how much and what kind of work is required and decide if a Board position is something in which you're willing to invest some time. New Board member terms begin in January.

While board positions are elected, there are many other opportunities for you to volunteer and make a difference without having to run for office. Please see the list of committees that would welcome your help along with contact information for each committee chair.

Scholarship Endowment

The scholarship endowment is over $29,000 and continues to grow. The Board's goal is to increase this account to $100,000, at which point the interest will then become the primary source of funding for the Consortium student scholarships. Thank you to those individuals and organizations that have contributed so generously to this fund. If you would like to donate, see the form on the Consortium website, or donate directly at the GiveMN website.

Outreach

In addition to an information-packed website, the Consortium also maintains a presence on both Facebook and LinkedIn. These two sites are a great way to network and stay in touch with other Consortium members throughout the year.

Website Advertising

Would you like the opportunity for your geospatial business to reach the hundreds of Consortium members? The Consortium website now has section for advertisements. Click here to view the website advertising form for more information.

Newsletter
All members are invited and encouraged to submit articles tonewsletter@mngislis.org about GIS projects, activities and events. Please consider submitting an article or encouraging others to contribute a piece about an interesting project or topic. Suggested length of articles is a few paragraphs with related links and/or supporting graphics. The Consortium is a member-driven organization and relies on the greater community to distribute informative and timely information. The newsletter is published three times per year. More information can be found here.

Event Grants Available
Each year the Consortium Board sets aside funds to assist GIS/LIS-related activities or events in Minnesota such as the University of Minnesota's GIS Student Organization's annual Career and Networking Fair. The Consortium can provide limited funding for printing costs, mailing costs, meeting room rental fees, food services, speaker fees and advertisements. For details and an Event Grant application, clickhere.

Free Membership
Membership with the GIS/LIS Consortium is FREE and all you need to do is go to our website and sign up. Membership is required to register for the conference or any workshops. Members include GIS/LIS professionals as well as students in the geospatial fields. Please forward this information to non-members you feel would be interested. If you are already a member, I encourage you to review your member profile and update it if needed.

Welcome to the 21st Annual MN GIS/LIS Conference and Workshops, October 5-7
By Tami Maddio, 2011 Conference Chair

It is almost time to head to St. Cloud for the 21st annual MN GIS/LIS Conference and Workshops. I am looking forward to seeing everyone and meeting new attendees. Whether you are coming to your first conference or you've never missed one, the experience is always inspiring. Each year, attendees come away with new ideas, new contacts and a sense that the Minnesota GIS/LIS community is quite impressive.

Our opening keynote speaker this year is Dr. Scott Mest, a research scientist from NASA who uses GIS technology to study the surface of the Moon and Mars.

Mr. Kenny Salwey, the self-proclaimed "Last River Rat", is our closing keynote speaker. He has spent his life living on the Mississippi River and is a master storyteller.

The 2011 Conference Committee has worked hard to provide an enriching experience. There is something for everyone, including presentations and workshops for all levels of expertise. Wednesday Workshops are offered

at beginner, intermediate and advanced levels. Sessions are organized by topic and opportunities abound for seeing some impressive work. The conference ends on Friday with more sessions and the closing keynote.

There are also plenty of opportunities to have fun and reconnect with colleagues. Don't miss the Wednesday night Welcome Reception showcasing a group of local comedians. On Thursday after a day of sessions and speakers, visit the exhibitor's hall and relax at the Vendor Reception. Following the Vendor Reception, don't miss the annual "Networking Event" where the GIS/LIS community can get together, talk, snack and taste good beer and wine while supporting the MN GIS/LIS Scholarship fund.

There is still time to register. Onsite registration is available throughout the conference. For more information and to look at the Conference Preliminary Program, please visit the MN GIS/LIS Consortium website atwww.mngislis.org.

Young Professionals Mentor Program
By Stacey Stark, University of Minnesota – Duluth

It's time to sign up for the Young Professionals mentor program at the Fall Conference! We need GIS professionals to volunteer to be mentors, and students (or recent students) to sign up to be mentees.

The Young Professionals Mentor Program was a success last year, and all nineteen participants gave very positive feedback. There were more mentees than could be matched. Mentees showed great appreciation for the opportunity to meet with a GIS professional and connect with others at the conference, so let's make sure we will have enough mentors this year!

Mentors will be asked about the kind of students (or interests) they would like to connect with and about their specialty in GIS. At the conference, each mentor is asked to:

1. meet their mentee before the opening plenary and sit with them, and
2. invite them to eat at their table (with other colleagues if possible) at the Thursday lunch.

That's it! Suggestions for conversation and other activities will be provided. The idea is that you will share your work experience with them, answer questions, help them make connections, and help them navigate the conference. Possibly there will be a connection beyond that, but there are no obligations. I will send out suggestions and meeting place information before the conference.

Mentees will wear a special tag and will have a designated meeting place and the Thursday reception to connect with one another. Remember, you don't have to be young or a student to be a mentee – any graduate of a GIS program 2010 or later will qualify.

If you are not interested in participating, we can still use your help to spread the word about the Young Professionals Mentor Program by talking to the students and recent graduates you know. Thanks for your help and for sharing your experience with young GIS professionals in Minnesota.

Please contact Stacey Stark (slstark@d.umn.edu) to sign up or for questions.

Polaris Leadership Awards: Mike Dolbow, Lisa Hanni, Nancy Rader

Three outstanding GIS professionals will be presented with the Consortium's Polaris Leadership Award at the October 2011 conference in St. Cloud. This award recognizes active, established leaders in the geospatial community who demonstrate a beacon of energy and creativity that inspires and guides the rest of us.

Mike Dolbow
Minnesota Department of Agriculture

Lisa M. Hanni, L.S.
Goodhue County, MN

Nancy K. Rader
Minnesota Geospatial Information Office (MnGeo)

For more information about the award and the winners' accomplishments, see the Polaris Award webpage.

State

Preserving Minnesota's GLO Field Notes – Update
By John Hoshal, MnGeo

Are we done yet?
In the Consortium's Summer 2010 issue I announced that the Minnesota Historical Society had awarded a Historical and Cultural Heritage Grant to MnGeo to scan, index and increase access to Minnesota's General Land Office (GLO) Field Notes. These unique documents were created between 1847 and 1911 by the U.S. Surveyor General's Land Office and continue to serve as the legal foundation for all land ownership in the state. I am pleased to report that on June 30, 2011, MnGeo delivered to the Historical

Society a 24-terabyte disk array containing digital copies of Minnesota's original survey field notes and supplemental surveys (island, tribal land, railroad, and transportation) in TIFF and JPEG2000 formats.

During the project, MnGeo and Mn/DOT staff – on mobility assignment at MnGeo – reviewed and indexed nearly 305,000 images captured by its scanning vendor, Perfect Image Inc. Each page was carefully scanned at approximately 640 dpi, in 24-bit color with extra attention given to pages where text rolled into the volume's gutter.

How do I access the field notes?
In a unique partnership with the U.S. Bureau of Land Management (BLM), Minnesota's digital field notes, supplemental surveys and GLO plats will be accessible to the public through BLM's national Land Records website. This site allows a user to search and download records by document type, location and identifier, including the original surveyor. BLM hopes to make Minnesota's data available by November 2011.

MnGeo is also updating its GLO website to improve access to theoriginal survey plats scanned in 2004. New spatial selection tools for the plats will allow a user to more easily select a township, view or bulk download the plat images, or connect immediately to BLM's records for that township.

Other goodies!
While preparing to link the GLO plats to the field notes, staff created a***georeferenced*** version of the maps. Staff registered each document to real-world coordinates using township corner control points. MnGeo will make these JPEG images available through its GLO website.

For more information, see the GLO Field Notes webpage or contact John Hoshal at john.hoshal@state.mn.us or 651-201-2482.

Minnesota Historical and Cultural Heritage Grants are made possible by the Minnesota Legislature from the Arts and Cultural Heritage Fund created with passage of the Clean Water, Land and Legacy Amendment to the Minnesota Constitution in November 2008.

Grants are awarded to support projects of enduring value for the cause of history and historic preservation across the state.

DNR Image Capture Tool Extends WMS to the Field
By Chris Pouliot, MN DNR

Sure, MnGeo has a great image server that provides over a million images a month via WMS, and you can use those in a variety of clients - as long as you're connected to the internet. But what happens when you have to go in the field, with no wireless card and no connection to the web? Well, we at the Minnesota DNR asked ourselves the very same question, and if you have ArcGIS Desktop 10, you can take advantage of our solution.

Increasingly, there is a push to publish spatial data on the web in the form of services. At the DNR we are taking full advantage of this great technology. There is still the need, however, for the ability to bring that spatial information into the disconnected world of handheld data recorders and GPS units. To meet that need, we developed the "Export to Image" tool.

The tool is available at DNR's ArcGIS Resources page. Click on the "DNR Export To Image" link and download the zip file, which contains instructions for using the tool. To install the tool, simply extract the contents to a folder on your hard drive and point the Customize dialog to that folder:

1. Customize Menu → **Add-in Manager**
2. Click the **Options tab**
3. **Add Folder Button**
4. Browse to the folder you extracted the zip file to

The Export to Image tool is an ArcMap Add-In and allows users to export the contents of a data frame to a full resolution image (JPG, JPG2000 or KMZ) that can then be transferred to a handheld device. Once added to ArcMap, the tool is relatively easy to use, although large areas can take a long time to process and users may notice a delay while a mosaic is created from a temporary geodatabase image catalog. However, once finished, a large "FINISHED PROCESSING" message will appear at the bottom of the tool's log, and the user will be prompted to add the mosaicked image to the map. The resulting images are files that can be taken anywhere, regardless of internet connection. And for field users, that can sometimes be worth the wait.

For more information, see Chris Pouliot, DNR GIS Technical Support Specialist, Christopher.Pouliot@state.mn.us, 651-259-5491.

2010 Census Boundary Data Online
By Lee Meilleur, Legislative Coordinating Commission Geographic Information Services

With the release of 2010 Census data and with Minnesota's redistricting in full swing, more and more people are looking for updated Census boundary files. The Legislative

Coordinating Commission's Geographic Information Services office (LCC-GIS) provides this data online for free download from its website. Look in the "Redistricting Data – 2010 Census" section and choose between shapefile format and Caliper files for use with Maptitude redistricting software.

The dataset is derived from the 2010 Census TIGER/Line Files and includes the entire data hierarchy used for redistricting: census block, voting districts, minor civil divisions and counties. The dataset also includes Minnesota Secretary of State election data from 2002-2010 that was disaggregated to census block level and aggregated to voting districts, minor civil divisions and counties.

See the metadata for a complete list of the dataset attributes.

The LCC-GIS website also provides many other related Census and redistricting resources, as well as other data to download – check the left-hand navigation bar for links.

For more information, contact Lee Meilleur, Director LCC-GIS atgis@gis.leg.mn or 651-296-0098.

LiDAR Needs and Use Survey Results
By Shelly Sentyrz, MN Department of Natural Resources

This spring the LiDAR Research and Education subcommittee of theMinnesota Digital Elevation Committee conducted an online survey to assess how elevation data collected using LiDAR technology is used or intended to be used throughout Minnesota. The intent was to better understand the type(s) of training needed to facilitate the use of this high-quality data. Thirteen multiple choice and open-ended questions provided a snapshot of current LiDAR use in the state.

User profile
485 respondents from 180 different zip codes completed the survey. A grand majority worked in local, state, or federal government (82%). Watershed organizations (6.41%) private sector, (5.18%) and SWCDs (2.18%) comprised the next largest groups of respondents. The primary activities of these organizations focus on natural resources, water resources, engineering, and agriculture.

Use profile
There were no prominent patterns to frequency of LiDAR data use. A full third of those responding had never used LiDAR in their work, but saw value in and looked forward to doing so. Another third used LiDAR data once in a while. The final third used it often or daily.

Almost three quarters of users (71%) employ GIS software to work with LiDAR data. CADD (12%) and simple desktop or online viewers (12%) comprise the majority of other software used. The small remainders of respondents use industry-specialized software (e.g. mining, urban planning).

Project profile
The most prominent use of LiDAR data in Minnesota is for water resources projects (59%). That said, 53 different uses or intended uses were cited by respondents. The most often-mentioned uses included hydrologic analysis, detailed elevation for site planning, wetland mapping, engineering, and vegetation analysis. Thirty-five real-world uses of LiDAR data were listed. Watch for links to these projects on the above website in months to come.

Numerous respondents described experimenting with LiDAR data in new problem-solving arenas. One example included mapping historic mining features on a landscape, thus greatly reducing archeological fieldwork. A second is analyzing the sustainability of tree species planted after flood events. A third is the determination and adjustment of ecotype boundaries.

Data products
The skill level of a user largely determines the LiDAR data products they create or use.

Contours and Digital Elevation Models (DEMs) are the most popular derived products, used by over one third of respondents, likely because these products are ready for consumption in online viewers and in ArcGIS. Hillshade and shaded relief products are popular, as well (15%). Other products mentioned include Triangulated Irregular Networks (TINs), point clouds, and intensity imagery.

As users progress from viewing to analyzing LiDAR data, they tend to process the "original" LAS files to meet their needs. A full nine percent of respondents were unsure of what products listed in the survey were or how they might be used.

Review on usefulness
Nearly two thirds (64%) of respondents found LiDAR data useful or essential to their work. They cited reduction of time spent on projects, reduced site visits in preplanning phases, and more accurate cost estimates and project outcomes as grounds for their statement.

Two percent did not find it useful. They commented that the time spent on computers was better spent in the field; data needed further processing to make it as reliable as a site visit.

The remaining third (34%) of those responding had either not used LiDAR or had not used it enough to gauge its usefulness.

When asked if LiDAR data saved users money, 46% replied yes, 45% said no, and 9% were unsure. Answers to this question may not accurately reflect the cost-savings of LiDAR use, however, because some respondents who have not used LiDAR may have replied "no" instead of "unsure-have not used".

Training and information needs

With the wide spectrum of LiDAR knowledge and use, training needs are numerous and varied. A quarter of respondents want training in the basics of LiDAR products and use. Other training requests mirror the specific applications folks intend for LiDAR: 20% are interested in water resources-based training, 18% desire terrain analysis training, 18% wish for wetland mapping classes, 12% want instruction in ecological applications, and 7% prefer training in engineering uses.

Preference for training mediums is as wide-ranging as for training topics, though a great majority agree hands-on courses – either classroom or virtual classroom – are favored. Cost is the overwhelming limiting factor in training attendance.

Those comfortable with the basics of LiDAR data prefer a LiDAR training portal containing recorded events, self-teaching materials, and links to project examples.

Conclusion

As is common with other new technologies, the survey indicates that there are currently pockets of LiDAR expertise within Minnesota's spatial data community. Traditional users of elevation data have established protocols for working with LiDAR data, but the increasing availability of this high-detail homogenized LiDAR dataset is also spurring innovation in other specialties. New uses and methods are likely to evolve, and that evolution will depend on exposure to existing knowledge. For this reason, the MN LiDAR Research and Education subcommittee of the Minnesota Digital Elevation Committee will discuss a "one stop shop" web portal at the annual MN GISLIS conference on October 5th-7th, 2011.

For more information, contact Shelly Sentyrz at Shelly.Sentyrz@state.mn.us, (218) 308-2374.

Regional

Tribal GIS Contacts List

By Dawn Sherk, White Earth Nation

Who do you ask if you have GIS data or coordination questions that involve Minnesota's tribal governments? Thanks to colleagues from Minnesota's 11 federally recognized tribal governments that use GIS, you can now refer to a compiled tribal GIS contacts list.

This list provides a ***starting point*** to direct questions about geographic data and GIS technology. The contacts may be able to answer questions directly or they may refer you to another source of information. Users of this list should not assume that their specific data needs can be met through these contacts. The list provides links to tribal GIS webpages, as well as email addresses, phone numbers and mailing addresses. MnGeo hosts the page and will ensure that the information is updated periodically.

Many thanks are due to the contacts for their willingness to assist others. This list should help reduce the time that people spend searching webpages or calling general information phone numbers and should also help increase communication among our state's GIS communities.

Related Lists: The State of Minnesota maintains a page of links to tribal government websites, and MnGeo maintains a page of county GIS contacts in Minnesota.

Local

Statewide Health Improvement Program Funds Multiple Recreation Portals

By Mike Dolbow, News Editor

Several new interactive mapping web sites that focus on recreation opportunities have been released over the past year, and some have been highlighted in this newsletter. If you've noticed that several of these sites have a similar look and feel, that's no coincidence. All of these sites have benefited from Statewide Health Improvement Program (SHIP) funding distributed by the Minnesota Department of Health (MDH) during the 2009-2011 budget cycle. And according to Carver County GIS Supervisor Pete Henschel, that common funding mechanism led to an informal agreement on sharing a recreational data model and programming efforts.

MDH's website says that SHIP "was developed in response to the 2007 Minnesota Legislature's request to develop a plan for statewide health promotion to address the rising cost of health and health care in our state." Through 53 community health boards, all 87 counties have received SHIP funding in one way or another, and 20 counties have implemented a "recreation portal" with the funding, resulting in four single-county sites in the metro area and two multi-county regional sites in the southeast and north central regions of the state (see sidebar).

"We thought about having one metro portal, but that turned out to be a bit too complicated," says Henschel. Nevertheless, he and several other county GIS leaders

agreed to use a common data model for trails, from the National Recreation and Park Association. And several groups had individual contracts with Houston Engineering for site development, they made a concerted effort to share as much of the programming code as possible. The result is that a user familiar with Anoka County's recreational portal will have little trouble using Ramsey County's, and vice versa.

MDH's SHIP supervisor Rachel Cohen says that "any tool that increases access to physical activities meets the goals of the program", but final reports from the first years of the program are still being filed, so no official evaluation has been performed as yet. While Anoka County has received limited (and mostly positive) feedback via a user survey, "most of the sites are too new to have garnered significant attention from the public," according to MDH SHIP Evaluator and Research Scientist Joanne Moze.

For the future, Cohen and Moze say that SHIP funding was reduced from $47 million to $15 million for the 2012-13 budget cycle, so the menu of future grant options will likely look different. Regardless, it is clear to the GIS community that the program has opened up new resources and conversations about GIS's role in the public health arena.

For more information on SHIP, seehttp://www.health.state.mn.us/healthreform/ship/index.html, or contact Joanne Moze, Joanne.Moze@state.mn.us, 651-201-5393.

For links to various recreational portals, see the sidebar.

Prior GIS/LIS news articles: Carver County, Anoka County.

Links to Recreation Portals
Links to county and regional recreation portals are below. (All except the North Central site require the Microsoft Silverlight browser plugin.)

Metro Region

1. Anoka - Go AnokaCounty
2. Carver - GoCarverGo
3. Scott - GoScottGo
4. Ramsey - GoRamsey

Southeast Minnesota - GoSoutheastMN - includes:

1. Dodge
2. Fillmore
3. Freeborn
4. Goodhue
5. Houston
6. Mower
7. Olmsted

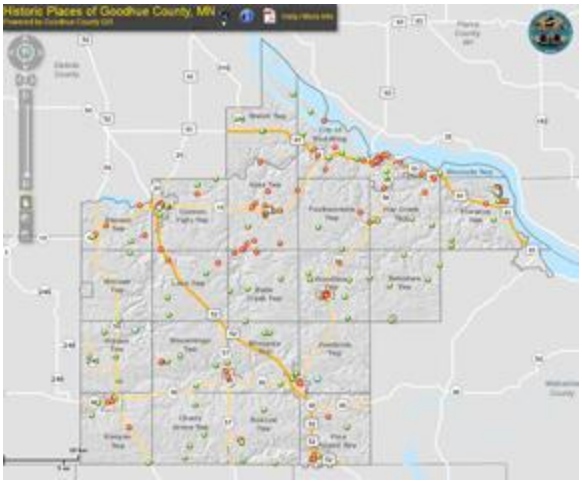
8. Rice
9. Steele
10. Wabasha
11. Winona (host county)

Region Five Development Commission - North Central MN Parks & Trails - includes:

1. Cass
2. Crow Wing
3. Morrison
4. Todd (host county)
5. Wadena

Migrating from Web ADF to Flex-based Web Applications
By Sarah Schrader, Goodhue County GIS

Goodhue County staff first published an ArcServer-based web application featuring almost 200 historic places and cemeteries in April 2010. The original application utilized ESRI's ArcGIS Server Web ADF software (out-of-the-box tools and functionality) and proved to be a great option for county GIS staff without developer experience to publish the data quickly.



Once this web application went live and was running smoothly, county staff began to research options to upgrade and improve the application. The Web ADF was a great solution to get a good product to the public quickly, but was not part of the long-term plan regarding the county's web applications. County staff researched ESRI's Flex API and the Flex Viewer. Staff had also looked into working with the Silverlight API, but in the end moved forward with using the ESRI Flex Viewer because of its 'plug and play' capabilities. The Flex Viewer was similar to the WebADF because the application layout and many of the basic tools and functionality are pre-configured and available to use without any custom programming.

Staff was quickly able to do some basic customization to the interface and tools within the Flex Viewer. Staff also incorporated ESRI codeSamples and code snippets provided by other ESRI users in the Flex Viewer Forums. County staff are pleased with the resulting web application, which now includes over 280 historic places, but are still looking ahead and making a wish list of other information or tools to incorporate in the next version. The next step is to start using the Flex API for the Historic Places application as well as for any new applications created, in order to take full advantage of the available tools and functionality.

Click HERE to view the current Historic Places web application.

For more information about this project, contact Sarah Schrader, GISP – Goodhue County GIS Specialist at 651-385-3193 orsarah.schrader@co.goodhue.mn.us. Sarah will be presenting "Journey from WebADF to the ESRI Flex Viewer" at the Fall Conference on Thursday, October 6 during the 10:30 a.m. - noon session.

Carver County Wins ESRI Award
Adapted from ESRI website

Carver County was selected for a 2011 Special Achievement in GIS (SAG) Award from ESRI.

Carver County GIS staff has had great success in getting GIS technology and data into the hands of people who can benefit from it at the county. They have architected a scalable ArcGIS Server infrastructure that supports a number of modern, workflow-specific web applications including:

- Public web applications for purposes such as land records, construction projects, seasonal flooding, county fiber project, recreation finder and crime.
- Internal applications for division-specific business needs such as the integration of ArcServer services within the county's Self Hosting Pictometry Online deployment.

Sharing and collaborating with cities within the county has become easier with the creation of a GIS Shared position between four cities and the county. Recently these communities all joined the small government enterprise license agreement and are looking further into sharing software and hardware.

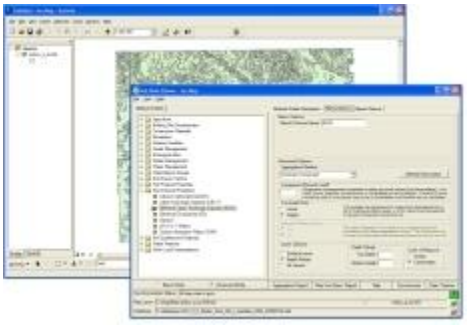
Peter Henschel accepted the award on behalf of the department at this year's ESRI International User Conference in San Diego. The development team included Rhonda Lynch, Peter Henschel, Robert Taylor, Chad Riley and Allison Kampbell.

For more detail, see the ESRI SAG Award announcement and the Carver County GIS webpage.

Federal

NRCS Soil Data Viewer 6.0 – Compatible with ArcGIS 10.0

By Danielle Evans, Natural Resources Conservation Service



Soil Data Viewer is an extension in ArcMap that allows a user to work with the SSURGO soils data to create thematic maps. This tool can also be used as a standalone application, but only to create tabular reports. Soil Data Viewer contains processing rules to enforce appropriate use of the data.

There are now four versions of Soil Data Viewer compatible with various versions of ArcGIS available for download from the NRCS Soil Data Viewer Website. The most recent version is certified for ArcGIS 10.0, Windows XP Professional, and Windows 7.

For more details, see the following NRCS webpages:

- Soil Data Viewer Download
- SSURGO Database

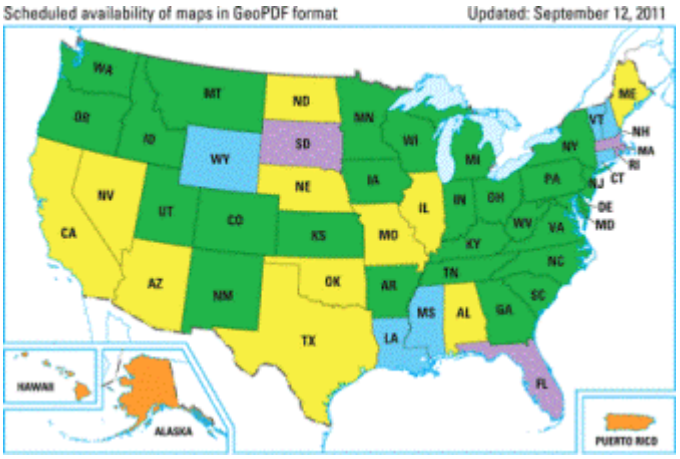
Minnesota's Historical Topo Maps Online
Adapted from USGS Press Release

Nearly 90,000 high-resolution scans of the more than 200,000 historical USGS topographic maps, including those covering Minnesota, are now available online. The Historical Topographic Map Collection includes published U.S. maps of all scales and editions, some dating as far back as 1884, and are offered as a georeferenced digital download or as a scanned print from the USGS Store.

Historical maps are an important national resource as they provide the long-term record and documentation of the natural, physical and cultural landscape. The history documented by this collection and the analysis of distribution and spatial patterns is invaluable throughout the sciences and non-science disciplines. Genealogists, historians, anthropologists, archeologists and others use this collection for research as well as for a framework on which a myriad of information can be presented in relation to the landscape. For more than 130 years, the USGS topographic mapping program has accurately portrayed the complex geography of our nation through maps using the lithographic printing process. The historical collection contains high resolution scanned images from the USGS legacy series and other sources.

Historical maps are available to the public at no cost in GeoPDF format or as a printed copy for $15 plus a $5 handling charge from the USGS Store. The electronic maps are georeferenced and can be used in conjunction with the new USGS digital topographic map, the US Topo.

The entire historical collection is being loaded into the USGS Store at a rapid pace. Check the website for status information, download instructions, a users guide and an FAQ.



Higher Eduaction

Carleton Gets $10M NSF Award for Geosciences

By Will Craig, University of Minnesota

Carleton College has received a $10M grant from the National Science Foundation (NSF) to support geoscience education. The NSF program is aimed at improving education in Science, Technology, Engineering, and Mathematics (STEM). The Carleton program has two goals: improve the geoscience literacy of all undergraduate students, and increase the number of majors in the geosciences.

The NSF grant, one of two in the nation, will be administered by Carleton's Science Education Resource Center (SERC). SERC works to to improve education through projects and resources that support science educators at all levels. The NSF grant to Carleton is in support of project InTeGrate: Interdisciplinary Teaching of Geoscience for a Sustainable Future.

Geosciences include a broad array of earth sciences including geology, physical geography, soil science, geodesy, and atmospheric sciences. While Carleton doesn't have a GIS program per se, it does provide GIS software and workshops for the geosciences and other disciplines. For more information, see Spatial Analysis at Carleton College.

K-12 Education

New K-12 Education Resources

Two Minnesota colleges have developed online resources for K-12 educators. This information has been added quietly to the Consortium'sK-12 Education website. This article highlights them for our readership.

- Carleton College's Science Education Resource Center (SERC) works to improve education through projects that support educators at all levels. They have a special portal for K-12 Educators. A full section is devoted to GIS resources, including teaching activities and examples.

- The University of Minnesota's Learning Technologies Media Lab (LT Media.Lab) has developed GeoThenic to help K-12 teachers use geospatial technologies most effectively in their curriculum. Five modules are currently available that push students to use that technology to solve real-world problems.