Spring 2010 **Issue 60**

GIS/LIS NEWS

The Newsletter of the Minnesota GIS/LIS Consortium

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MN GIS/LIS Consortium

From the Chair

By Steve Benson, 2010 Chair

The Minnesota GIS/LIS Consortium Board of Directors and committees are already working towards a quality conference and two sets of workshops. I'm happy to work with this year's board and look forward to meeting a number of new goals. Thanks to the outgoing board for a great year of accomplishments! We have some returning directors and some new faces this year.

Please welcome the 2010 Board of Directors:

- Steve Benson, Chair – Minnesota DNR
- Sarah Schrader, Chair Elect – Goodhue County
- Rebecca Foster, Past Chair Ex Officio and MnGeo Statewide Geospatial Advisory Council Liaison – City of Edina
- Carla Coates, Treasurer – Ramsey County GIS
- Jesse Adams, Secretary - North Point Geographic Solutions
- Stacey Stark, Conference Chair – University of Minnesota Duluth
- Tami Maddio, Conference Chair-Elect – City of Eagan
- Dr. David Kelley, Higher Education – University of St. Thomas
- Kari Geurts, State Government – Minnesota DNR
- Jennifer Wittkopf, Local Government – City of Prior Lake
- Heidi Gaedy, Private Sector – de maximis Data Management Solutions, Inc.
- Joshua Gumm, At-Large – Scott County GIS
- Nancy Rader, MnGeo Ex Officio – Minnesota Geospatial Information Office

Board Meetings: These meetings are open, and are held once a month. So far, we've built the annual plan for 2010, and are working to support the Consortium's mission: *To develop and support the GIS professional in Minnesota for the benefit of our state and its citizens.* Feel free to contact your representative or any board member should you have comments, suggested goals or concerns about the organization. Full contact information for each director can be found here.

Membership is Free: Members include GIS/LIS professionals from local, state, and federal government agencies; business and industry; educational institutions; and nonprofits. Anyone can become a member by signing up at our website, or, if you're already a member, please review your Member Profile and update if needed. Don't miss out on an important training opportunity, E-Announcement of current events, or the quarterly newsletter. If you work for a Minnesota state agency, PLEASE update your email on your member profile to reflect your new address after email migration!

Spring Workshops: The board is again developing a day of GIS/LIS-related workshops to be held at the Mn/DOT's Training Center in Arden Hills. The workshops will be held on Thursday, May 20, 2010. Sally Wakefield has volunteered to be this year's workshop chair, and can be contacted for topic suggestions at swakefield@1000fom.org

2010 Fall Conference and Workshops: This year's conference is the second of two years in Duluth, to be held at the DECC on October 13-15th. The 2010 conference is the 20th Annual Conference for the Consortium! We've come a long way from the old days. If you are interested in working on this year's event, or simply want to make a comment or suggestion, contact this year's Conference Chair, Stacey Stark, at: slstark@d.umn.edu

Opportunities to get involved: While board positions are elected, there are many opportunities for you to volunteer and make a difference, without having to run for office! Please visit our website to see the list of committees that would welcome your help along with contact information for each chair.

Newsletter: Remember – all members are invited and encouraged to submit articles to newsletter@mngislis.org about GIS projects, activities and events to this quarterly newsletter. 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.

Thank you to all the members that keep the Consortium strong through participation! The board and I look forward to serving your interests in the coming year.

20th Annual MN GIS/LIS Fall Conference Planning
By Stacey Stark, 2010 Conference Chair

Planning has begun for the annual Minnesota GIS/LIS Fall conference and workshops in Duluth. This year's event is scheduled for **October 13-15, 2010** at the Duluth Entertainment Convention Center (DECC).

It's Our 20th Anniversary!
As it will be our 20th Annual Conference, we are brainstorming some extra-special ideas (there are always extra-special ideas, but this year I get to use the excuse of the anniversary!). For example, we would like to celebrate the 20 year history of MN GIS/LIS with a display, panel, and/or activity. If you are interested in contributing to this idea, please let me know.

Program
The opening keynote speaker will be Paul Ramsey, leader of PostGIS, one of the most

important open source GIS projects. Paul will also be teaching a PostGIS workshop on Wednesday, and we are working towards another activity/track for open source interests. Here is another opportunity to get involved in planning and to explore open source GIS.

Workshops will be held on Wednesday, October 13, and a committee is forming to develop a selection of educational, low-cost workshops. They will be half-day, full-day, hands-on, or lecture-style and will range from introductory to advanced topics. The Wednesday reception is always a great chance to relax and reconnect with colleagues before the conference. This year's activity will be fun and family-friendly; partners and children will be welcome.

A Call for Presentations will be sent out in early spring. Remember, this is a member-driven conference - please consider presenting GIS/LIS-related activities that you have been involved in over the past year.

Following Thursday's sessions will be the 3rd annual Fun Run/Walk on the Lakewalk, the Poster Session, and the Vendors Reception. Free hot hors d'oeuvres and beverages are served and a cash bar will be available. Entertainment and Birds-of-a-Feather discussions will be planned for Thursday evening as well. These events provide another excellent opportunity to visit with vendors, learn about poster displays, network with colleagues and win door prizes!

On Friday there will be more concurrent sessions, followed by a closing luncheon. At the luncheon, we will recognize scholarship recipients, hear an engaging speaker and end with a brief annual meeting and more door prizes!

Volunteers
Much of the conference is run solely on volunteer effort, and there are a number of ways you can contribute with varying levels of time commitments. Committees are formed around the following topics: workshops, sessions, facilities, entertainment, and communications. Contributing as an instructor, presenter, speaker, etc. is also very helpful. The planning committee would be grateful for any and all volunteers. Thanks to those who have already expressed interest.

Plan to join us in Duluth for a full, engaging conference again this year! Please feel free to contact me at slstark@d.umn.edu to volunteer or to suggest ideas, ask questions, or for any other conference-related communication.

2009 GIS Profession and Salary Survey Results
By Jennifer Wittkopf, Prior Lake GIS Coordinator

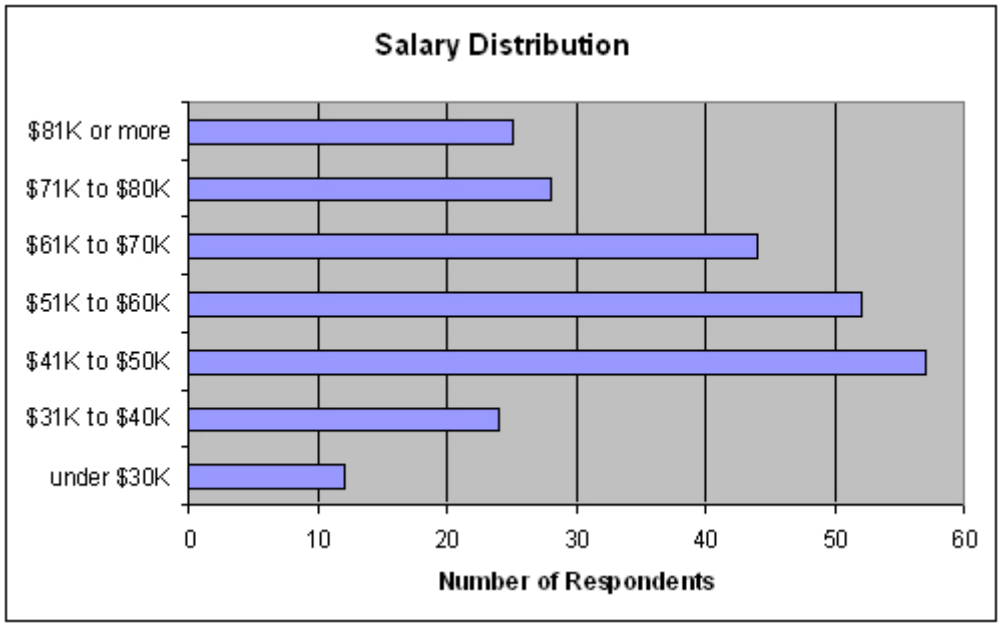
The Consortium conducted its third GIS salary/skills survey in Fall 2009, as part of its mission to develop and support the GIS professional in Minnesota for the benefit of our state and its citizens. Previous surveys were conducted in 1998-99 and 2002. The most recent survey was simplified from previous versions, focusing more directly on salary,

job type, and education. This is the first report to base its results on medians, so historical comparisons and trend analysis were not possible.

The survey was conducted on-line in September 2009 and received responses from 242 Consortium members (approximately 15% of email addresses on file with the Consortium).

Results

Consortium volunteers Jennifer Wittkopf, Will Craig, and Ben Verbick analyzed the results and produced a final report. Below is the salary distribution of the respondents, just one of the 15 questions that were asked:



The overall median salary of people in this survey was $55,000. However, there is interest in seeing more than average salary, such as what characteristics are related to higher or lower salaries. Following are some details based on other survey questions and responses:

Median Salary based on location
Metro County (58%) $62,000
Outstate (42%) $49,000

Median Salary based on level of education
Less than bachelor degree (13%) $47,000
BA/BS (47%) $52,000
Master degree or above (40%) $63,000

Median Salary based on major program of degree(s)
Computer Science, math, stats, etc. (19%) $72,000
Sciences: bio, env, natural, etc (32%) $55,000
Geography, Planning, Landscape Arch (42%) $57,000
GIS (11%) $53,000
Other (7%) $48,000

Median salary based on years of GIS experience
Under 3 years (11%) $40,000
3-5 years (12%) $42,000
5-10 years (26%) $50,000
More than 10 years (51%) $65,000

Nearly all GIS professionals in Minnesota have some post-secondary education; most hold a bachelor or master degree. For analysis we combined similar majors, like Geography, Planning and Landscape Architecture. Whether combined with another degree or as a single major, one-third of respondents have a degree in GIS. Over two-thirds of professionals had at least 12 credits of formal GIS education, while nearly one-quarter have a GIS certificate from an accredited educational institution. Finally, only 14% of respondents have a professional GIS certification (GISP) from the GISCI.

Government entities are the largest employer of GIS professionals in the state (65%), particularly at the county level (27%). The vast majority of all jobs fall into four categories of GIS positions: Manager (13%), Coordinator (21%), Specialist (26%) or Technician (13%). Just over half of the respondents (58%) work in the seven county Twin Cities metropolitan area.

Nearly two-thirds of GIS professionals have over ten years experience working with GIS, while only 11% have been in the field less than three years. Well more than half (63%) earn between $40,000 and $70,000 annually. Additionally, half of the GIS professionals are programming or developing custom applications as part of their job (50%), and about one-third are supervising other GIS staff (35%). Finally, most GIS professionals (71%) are spending more than half their workday using GIS products and procedures. In fact, nearly half of respondents (49%) spend over 75% of their time using GIS.

Full Report and More Information

To see the full report on this and previous surveys, visit the Consortium website here. For more information, contact Jennifer Wittkopf, Prior Lake GIS Coordinator, at jwittkopf@cityofpriorlake.com or 952-447-9833.

State

Minnesota Compass
By Susan Brower, Wilder Research

The Minnesota Compass project website makes available a host of data and other resources in a user-friendly, easy-to-navigate, one-stop shop. It provides data, offers commentary and insight from nonpartisan experts, and points to a variety of initiatives for local communities to try. Included are some strategies that are based on research evidence of what works and what does not. The project covers 87 counties, seven regions, major cities and the State of Minnesota as a whole.

The data found on the site are organized around ten topic areas:

- Aging
- Civic engagement
- Disparities
- Early childhood
- Economy and workforce
- Education
- Environment
- Housing
- Public safety
- Transportation

In each topic area there are 2-4 "Key measures," or indicators, that were selected by expert advisors from the academic, corporate, non-profit, and public sectors of our community.

In addition to the 10 topic areas, Compass provides detailed demographic data, major trend information, and analysis of what they might mean for communities across the state. With a special focus on addressing disparities, Compass shows indicators data for age, race, place, income, and gender whenever possible. The data are provided in graphs and tables, and all data tables are available for download as CSV files.

Compass is led by Wilder Research, a division of the Amherst H. Wilder Foundation. More than 400 people have shared their expertise in the development of Compass.

To learn more, visit www.mncompass.org.

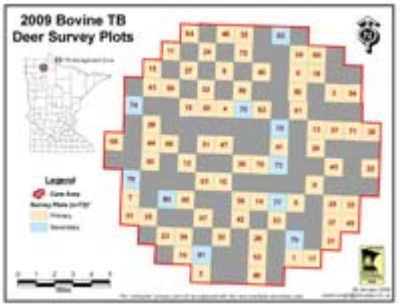
DNR Uses GIS to Monitor Deer for TB
By Steve Benson, Minnesota Department of Natural Resources

The Department of Natural Resources, Wildlife Section, has been monitoring Minnesota's deer herd for highly contagious Bovine Tuberculosis (TB). TB was detected on a number of northwest Minnesota cattle farms in 2005 and was subsequently detected in wild deer. Intensive testing of deer has been ongoing for a number of years.

This disease is significant due to major economic effects on the Minnesota cattle industry and potential major effects on the health of the deer population. The 12 infected cattle farms were "depopulated," and the state lost its TB-free status. This has since been modified to include just portions of four northwestern Minnesota counties. The TB strain has been traced to the southwestern U.S. The cross-species transmission occurs when cattle and deer both feed at unfenced outdoor hay piles. The risk is that TB could be harbored in wild deer, then continue to be transferred back and forth if cattle and deer feed from the same piles.

GIS was used first to map infected farms and the locations of positive deer. A new deer hunting permit area was created, encompassing the TB core area so that deer seasons could be modified to allow intensive hunter harvest. Intensive harvest allows more deer to be tested at deer registration stations and also serves to lower the deer population and reduce the risk of transmission of the disease.

Annual aerial population surveys have been conducted to track the size of the local deer herd. The DNR's GIS-based DNRSurvey application has been instrumental in providing data for researchers to estimate the herd and plan for reductions. A DNR specialist goes up in a helicopter and uses a tablet PC to record deer locations and numbers, using a moving background map to keep an active visual location reference of sampling units.



Intensive deer harvest was not enough. Hunters simply could not harvest enough deer for the sampling intensity and herd reduction required, therefore, sharpshooters were needed. They used the aerial survey data and specialty maps to set up bait piles and began shooting deer at or near these piles, using GPS to record the kill locations.

Even though these crews took hundreds of deer, analysis showed that not enough deer were being taken for culling purposes, and bait piles have only a localized effect.

Over the last two years, helicopter sharpshooters were added to the effort to widen the culling and sampling. These teams also took hundreds of deer. Ground crews had to recover all these deer for sampling. Ground crews and air crews had to avoid trespass, so background maps of restricted areas were added to dozens of handheld and aircraft GPS units, and updated regularly.

In large field operations, Wildlife GIS staff supported ground crews by downloading data from the helicopter GPS every two hours during refueling. After driving to crew locations, deer were assigned to crews, field maps were printed and the waypoints were uploaded to field crew handhelds. This was done from trucks, so all GIS equipment had to be mobile. As they located the deer, field crews captured a second waypoint, on the ground, to backup the helicopter data.

After deer were recovered, they were hauled to a testing site where necropsy teams extracted tissue samples and checked for clinical signs of TB. All deer locations were carefully recorded, and the coordinates became part of the database that tracked all tissue samples. Over 11,000 samples have been collected, identifying 27 TB positive deer. Deer herd culling and testing operations will continue in 2010.

For more information, or to arrange a presentation, contact Steve Benson at: steve.benson@state.mn.us or (218) 327-4149.

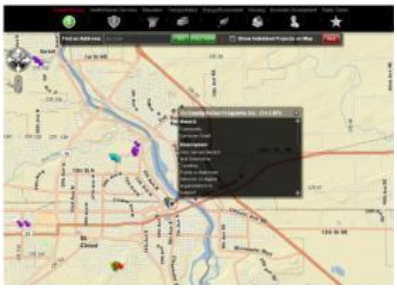
Minnesota's Stimulus Funding Map, Phase Two
By David Arbeit and Jim Krumrie, MnGeo

An important aspect of the Federal American Recovery and Reinvestment Act (ARRA) was its commitment to transparency, overseen by the Recovery Accountability and Transparency Board. As the state's chief financial reporting agency, Minnesota Management and Budget (MMB) was required to compile and disseminate detailed information about stimulus spending by state agency administered programs. Visualization of data through maps was strongly encouraged by the RATB. MMB

turned to the Minnesota Geospatial Information Office (MnGeo) to help it fulfill this requirement through an interactive web mapping application that is credited with launching Minnesota from near the bottom of state rankings for informing the public about ARRA funding to one of the nation's leaders.

The application, linked to Minnesota's recovery site, Recovery.MN, allows users to view spending amounts by county for seven different categories – Health and Human Services, Education, Transportation, Energy/Environment, Housing, Economic Development, and Public Safety – and then "drill down" to specific projects within each county. Each project is located on the map by a colored push pin that activates a window with project details.

How is the Map Created?



MnGeo created the site using the *StateStat* web application built by ESRI specifically for displaying a state's stimulus funding priorities. It runs on ArcGIS Server using the Adobe Flex web mapping API (Application Programming Interface). *Statestat* consumes stimulus project data created from approximately 70 specifically-formatted Microsoft Excel spreadsheets. The spreadsheets are filled manually from Microsoft Access SQL queries that operate on data originally received from MMB. Then latitude/longitude point coordinates were added for the various project locations (e.g., city centroids, county seats, school district main offices) using ArcMap.

Phase Two Improvements

MnGeo already is working with MMB to improve the site. In Phase Two, MnGeo will add crosstab tables that display spending data per legislative district along with choropleth maps showing data reported by school district and DEED Workforce Service Area. Also, the current manual method of loading data will be replaced with a more efficient automated process. MnGeo will continue to update the web maps and tables each quarter as it receives new data from MMB.

National Ranking Improves!

According to a recent study by *Good Jobs First*, Minnesota's website now ranks fourth in the nation in helping taxpayers understand and evaluate the role of the Recovery Act in job creation and state fiscal relief. The study examines the quality and quantity of disclosure by official state websites on the many different ways more than $200 billion in ARRA funding is flowing through state governments to communities, organizations and individuals. It looks at the availability of information on spending programs as well as specific grants and contracts, with emphasis on data relating to jobs and the geographic distribution of spending within states. Using seven evaluation criteria, each state is graded on a scale of 0 to 100. Minnesota is now tied for fourth place – up from a tie with twelve other states for 34 – higher than only five other states.

Beyond Stimulus Mapping
Successfully demonstrating how mapping enhances understanding of state investments has opened the door for other applications. Legislative leaders and staff in both the Senate and House served on an advisory committee to MMB during the project's design and implementation and have been enthusiastic about the result. During hearings early in the legislative session, several legislators have suggested extending the approach to other areas of the budget and have asked MnGeo for advice. The most likely candidate for extending the stimulus mapping approach is the capital budget, which is also being explored in several other states. Longer term, this initial foray into applying GIS to strategically important issues has set the stage for broadened legislative interest in collaboratively implemented geospatial solutions. Stay tuned!

For More Information
Contact Jim Krumrie at jim.krumrie@state.mn.us or 651-201-2469.

MN Geospatial Commons Being Planned
By Mark Kotz, Metropolitan Council

A joint MetroGIS and MnGeo advisory workgroup is moving forward at full steam to define and facilitate a test-bed implementation of what they are tentatively calling the "Minnesota Geospatial Commons".

What is the Commons?

The Commons is envisioned to be a next-generation data discovery site, and much, much more. The organizations that brought you the Data Deli, MN Geographic Data Clearinghouse and MetroGIS DataFinder, along with others from state, regional, county and city government, are working together on a coordinated, next-generation site that is planned to allow users to:

- Search for, view and download data
- Find, acquire and use applications
- Find and use web services

The planned site would include the following functions:

- Web service ratings and monitoring
- Back-end broker that connects applications to web services
- User reviews of data, web services and applications
- Geospatial community news and discussion
- Shared development space for application developers
- State standards and user-provided tips and how-to documents

A list of the preliminary proposed functions and priority level can be found here. Additionally, a survey will be used to collect more information about the needs of potential users of the Geospatial Commons (see below).

Test Version

The workgroup is planning to implement a test version of the high priority functions using the ESRI Geoportal Extension. MnGeo has agreed to host the test implementation. The multi-agency implementation group includes MnGeo, the Metropolitan Council, the Minnesota Department of Transportation and the Minnesota Department of Natural Resources. They will be directed by the full Geospatial Commons Workgroup which will also be involved with testing.

The group hopes to have something tangible to test and report at the 2010 MN GIS/LIS Conference in October.

It is too early to know if the MN Geospatial Commons will replace the existing major MN geospatial data discovery sites, or work with them to better coordinate the effort, but the intention is to make one main location where people can find and share geospatial resources in Minnesota.

More Information

For more information, visit the Geospatial Commons Workgroup site or contact Mark Kotz at mark.kotz@metc.state.mn.us or 651-602-1644.

Survey of User Needs!

Please help to design the MN Geospatial Commons by completing this survey.

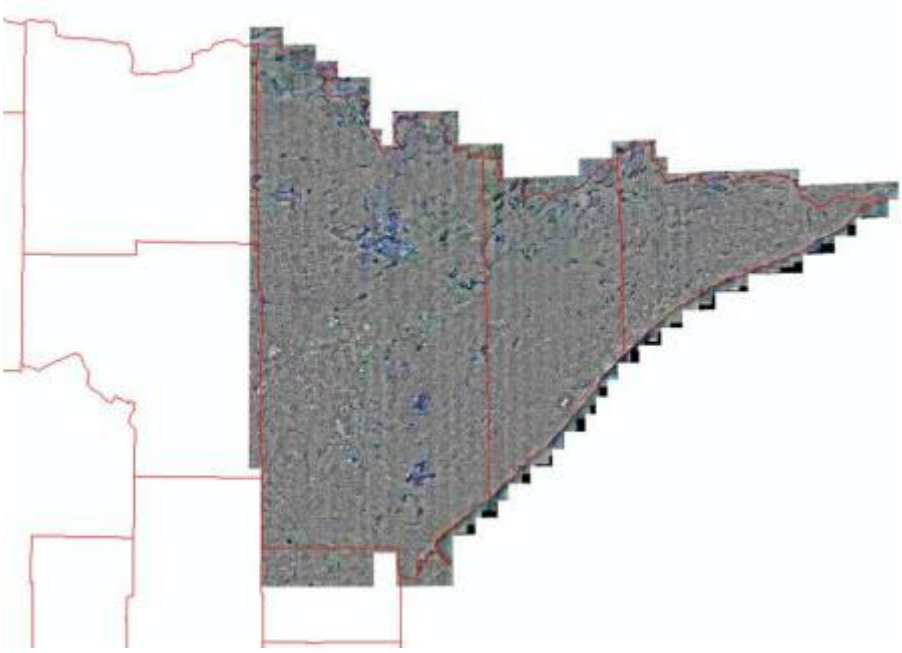
Regional

New Leaf-off Imagery Available for Arrowhead Region

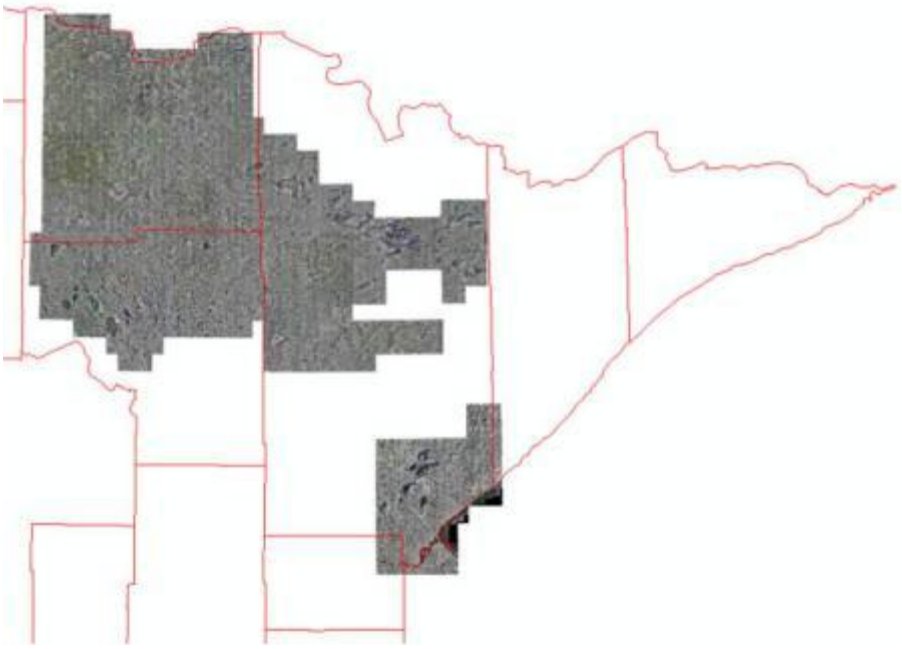
By Steve Kloiber, Minnesota Department of Natural Resources

High-resolution imagery collected for the Arrowhead Region of Minnesota in Spring 2009 is now available through the MnGeo web mapping service. This is the first publicly available leaf-off imagery for this part of the state in 18 years.

This dataset includes four band (red, green, blue, and infrared), digital ortho-photography of Cook, Lake, and St. Louis counties along with parts of Itasca, Koochiching, and Carlton counties. The base resolution of the imagery is one-half meter (50-centimeters), but with partner contributions, about 40% of the 15,000-mile2 project area was collected at 1-foot resolution (30 centimeters).



Extent of the 50-cm dataset



Extent of the 30-cm dataset

The imagery was collected through a multi-agency collaborative effort headed by the Minnesota DNR with contributions from the Minnesota Pollution Control Agency, St. Louis County, and the U.S. Geological Survey.

For more information, contact Steve Kloiber at steve.kloiber@state.mn.us or 651-259-5164.

MetroGIS Address Point Dataset Specifications Finalized
By Mark Kotz, Metropolitan Council

The MetroGIS Address Workgroup has finalized a set of data specifications for what will become the MetroGIS Address Points dataset. This dataset is envisioned to contain a point and an official address for every occupiable unit, and any other official address in the metro area. The data will come from the more than 100 address authorities in the metro, which are typically cities, and sometimes counties.

In order to begin the creation of this dataset, a collaborative workgroup has defined a set of data specifications that are derived primarily from a draft national standard as well as the combined thought and experience of the MetroGIS Address Workgroup.

In 2006 the workgroup conducted a pilot project to test the preliminary data specifications with real data in cities and counties. The results of that pilot suggested some changes to the specifications, mainly with optional items, and also provided comments on suggested changes and clarifications to the draft national standard.

In February 2010 a new draft of the national standard was published and submitted to the Federal Geographic Data Committee as a proposed national standard. It is expected that the FGDC will have a formal public review period for this standard.

MetroGIS is now testing implementation of the Address Points Dataset and hopes to begin distributing a preliminary version of the dataset with a few contributing address authorities. The intention of the MetroGIS Address Workgroup is to review the specifications for possible modifications if and when a final national standard is approved.

More information about the MetroGIS Address Workgroup can be found here or contact Mark Kotz at mark.kotz@metc.state.mn.us or 651-602-1644.

Local

The City of New Brighton Utilizes GIS to Access Sewer Maintenance Videos
By Mark Andrle, City of New Brighton GIS Specialist

Each year, the City of New Brighton's Public Works Department televises about a quarter of the city's sanitary sewer lines for inspection purposes. An operator uses a robotic camera on wheels to televise each segment of pipe from manhole to manhole. Each pipe segment video is then viewed by Public Works staff to assess and identify obstructions, cracks, water flow, roots and the general condition of each pipe.

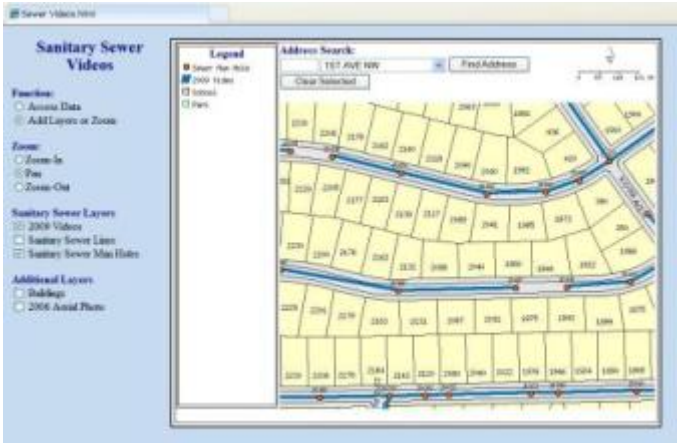
Within a single year, staff views about 400-500 pipe segment videos and associated pipe condition reports and images. While watching the videos, staff also reviews the hard copy sewer as-built construction plans to access specific info about each pipe segment. This

process of pulling together numerous documents from several sources became a very time-consuming and tedious process.

In the spring of 2009, the city began preparing for the annual televising process. To make the viewing process more efficient, staff wanted to create a system where all videos and documents could be accessed digitally through a single source. The solution was to create a web-based mapping application using MapServer that allows users to simply click on a pipe segment to access the videos, reports, as-built plans and other specific data about each pipe.

The first step was to create a shapefile of the televised sewer lines that included information about each pipe segment and links to the videos, documents and scanned as-built plans. Once the layer was created and all the attributes added, it was added to a simple web application that provides users access to the videos and documents.

Mapping Application – Allows users to select specific pipe segments.



The application allows users to select specific pipe segments and information about the pipe including links to the videos, reports and plans. In the past, users would have to locate the pipe ID on a map, open the videos and reports from an external hard drive and pull the printed as-built plans. With the application, users can now pan from pipe to pipe and watch the video while accessing any corresponding documents all at the same time directly from their desktop.

Pipe Info Page – Provides specific info about the pipe and links to the videos and reports.

This project has reduced the amount of time staff needs to organize and access the various media sources to complete their pipe inspections. The City plans to utilize the application again for the 2010 video inspections and has plans to add archived videos to compare pipe conditions from previous years.

For further information, contact Mark Andrle at: Mark.Andrle@newbrightonmn.gov or 651-638-2058.

Federal

US Topo - Topographic Maps for the Nation
Adapted from U.S. Geological Survey websites

US Topo is the next generation of topographic maps from the USGS and was formally released on December 3, 2009. Arranged in the familiar 7.5-minute quadrangle format, digital US Topo maps are designed to look and feel – and perform – like the traditional paper topographic maps for which the USGS is so well known. In contrast to paper-based maps, US Topo maps provide modern technical advantages that support faster, wider public distribution and enable basic, on-screen geographic analysis for all users.

US Topo maps are available free online at US Topo Web Site. Each map quadrangle is constructed in GeoPDF® format from key layers of geographic data – orthoimagery, roads, geographic names, topographic contours, and hydrographic features – found in *The National Map*, which is a nationwide collection of integrated data from local, State, Federal, and other sources.

The prototype of the US Topo, "Digital Map – Beta," has been available since June 2009. A US Topo map includes all of the content of the earlier "Digital Map – Beta" plus integrated contours and hydrographic features.

As the US Topo product evolves, the USGS will incorporate additional geographic data layers from The National Map and will also provide digital, historical versions of paper-based USGS topographic map quadrangles.

Minnesota US Topo maps are scheduled for production in 2010 – see status map.

For more information on US Topo map features, including a Quickstart Users Guide, see the US Topo Web Site.

125th Anniversary Celebration of USGS Topo Maps
Adapted from USGS website

The U.S. Geological Survey is celebrating the 125th anniversary of its national program for topographic mapping (1884–2009). Topographic maps became a signature product of the USGS because the public found them – then and now – to be a versatile tool for viewing our Nation's vast landscape. During the 20th century, more than 55,000 large-scale topographic maps were published by the USGS, culminating in complete coverage of the contiguous 48 States in 1991. In the last quarter-century, the rise of the digital age, the rapid growth of Internet communications, and the technology of geographic information systems (GIS) have transformed topographic mapping science, enabling the electronic construct of The National Map of today.

On December 3rd, the USGS observed the 125th anniversary of its topographic maps as well as released two new mapping products at a special event held at the USGS National Center in Reston, Virginia.

Videos, podcasts, pictures, proceedings, and other information products are available at the 125th anniversary website.

New National Map Viewer and Video
Adapted from USGS websites

USGS's National Geospatial Program has released a beta version of its new viewer for The National Map. The National Map (TNM), a collaborative effort among the USGS and other Federal, State, and local partners to improve and deliver topographic information for the Nation, is transitioning to newer visualization and delivery methods with foundational base maps and integrated download services.

The geographic information available from TNM includes orthoimagery (aerial photographs), elevation, geographic names, hydrography, boundaries, transportation, structures, and land cover.

New Viewer

Test out the new beta viewer and also find QuickStart help, FAQs, and contact information at The National Map Viewers page.

Key features:

- Fast, cartographically designed base maps using National Atlas and TNM datasets.
- WYSIWYG preview and download for all TNM data and new US Topo maps at one Web site.
- Interoperable services with popular viewers such as Google Maps, Bing! Maps, and Google Earth using WMS, KML, or ArcGIS.
- Easy mash-up of map services from TNM and other sources as KML, WMS, RSS, ArcGIS, or ArcIMS.
- Popular GIS tools to identify features, change coordinates display, measure, reverse geocode, and search by keyword or spatial extent.
- Advanced features such as collaborative annotations and query/filter.

Once stabilized and enhanced, this viewer will replace the existing TNM viewers as the primary distribution point for TNM data and services.

Video: Intro to The National Map

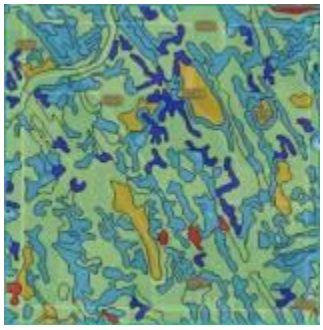
This 6-minute video introduces the history of mapping at the USGS and The National Map born from the digital revolution. Testimonials from the National Geographic Society, the Environmental Protection Agency, ESRI, and the USGS Director share how The National Map is used to help us navigate the world, explore, protect and sustain our resources, save lives, and preserve these lands for our children. The video includes appearances by Marcia McNutt, new USGS Director; Jack Dangermond, ESRI; and Tommy Dewald, U.S. EPA.

Crop Productivity Index Ratings for Minnesota
Adapted from NRCS website

Crop productivity index ratings from the Natural Resources Conservation Service (NRCS) provide a relative ranking of soils based on their potential for intensive crop production. An index can be used to rate the potential yield of one soil against that of another over a period of time. Ratings range from 0 to 100. The higher numbers indicate higher production potential.

CPI ratings supersede the Crop Equivalent Ratings historically computed by the University of Minnesota's Department of Soil, Water and Climate.

Computing the ratings



CPI ratings do not take into account climatic factors, such as the differences in precipitation or growing degree days across Minnesota. The ratings are based on physical and chemical properties of the soils and on such hazards as flooding or

ponding. Available water capacity, reaction (pH), slope, soil moisture status, cation-exchange capacity (CEC), organic matter content, salinity, and surface fragments are the major properties evaluated when CPI ratings are generated. The soil properties selected are those that are important for the production of corn.

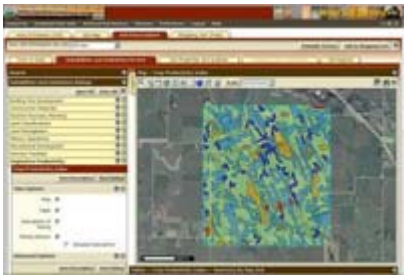
All soil component mapping phases in Minnesota were evaluated using the Cropland Productivity rule in the National Soil Information System (NASIS), and a CPI was generated for each phase. A statistical mean CPI value was created for each soil component mapping phase. All map units were populated with each component's mean CPI value, and a weighted average CPI was created for each soil map unit in the state. An individual map unit (for example, Canisteo clay loam, 0 to 2 percent slopes) will have the same CPI value wherever that map unit occurs throughout the state.

When the soils are rated, the following assumptions are made:

1. adequate management
2. natural weather conditions (no irrigation)
3. artificial drainage where required
4. no climatic factors considered
5. no land leveling or terracing.

Even though predicted average yields will change with time, the productivity indices are expected to remain relatively constant in relation to one another over time.

Obtaining CPI maps, tables, and spreadsheets



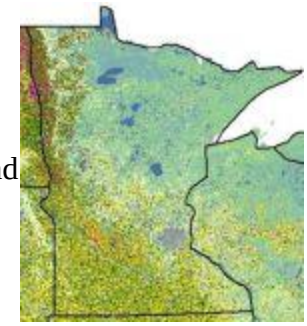
Maps and tables: NRCS provides maps and tables of crop productivity index ratings via the Web Soil Survey. After choosing your Area of Interest and creating your soil map, go to the Soil Data Explorer tab, choose Vegetative Productivity, choose Crop Productivity Index, and then check "View Rating". See graphic for a larger view of a sample map.

Spreadsheets: Spreadsheets of values in Excel (.xls) format are available by county in the Electronic Field Office Technical Guide (once you are at the eFOTG site, click on the map to navigate to Minnesota and then to a specific county. In the eFOTG menu, go to Section II, then section A. County Soils Information, then the county folder, then section e. Cropland Interpretations).

More Information

If you have further questions about CPI Ratings, contact Kim Steffen at NRCS's St. Paul office: kim.steffen@mn.usda.gov or 651-602-7891.

2009 Cropland Data Layer
By Nancy Rader, MnGeo



The U.S. Department of Agriculture's Cropland Data Layer Program uses satellite imagery on an annual basis to produce a land cover data layer showing specific crops and to provide supplemental acreage estimates for the state's major commodities. CDL data is available for Minnesota for 2006-2009.

Data Specs

CDL is a geo-referenced, categorized land cover data layer produced using satellite imagery from Landsat Thematic Mapper (TM) or RESOURCESAT Advanced Wide Field Sensor (AWiFS). The approximate scale is 1:100,000 with a ground resolution of 30 meters by 30 meters for the TM data, 56 meters by 56 meters for the AWiFS data. CDL is provided in GeoTIFF raster format.

The data is aggregated to a possible 85 standardized categories for display purposes, with the emphasis being agricultural land cover. Most data layers average about 10 to 20 categories out of the 85 possible categories. Agricultural training and validation data are derived from the Farm Service Agency (FSA) Common Land Unit (CLU) Program.

The CDL Program annually focuses on the corn/soybean/rice/cotton agricultural regions in the Midwestern and Mississippi Delta States. It is a cooperative venture between three USDA agencies (the National Agricultural Statistics Service, the Foreign Agriculture Service IPA group and the FSA/Aerial Photography Field Office) plus in-state agreements between NASS field offices and their respective state government or university partners. No farmer-reported data are derivable from CDL.

Obtaining the Data

The data may be downloaded at no charge from these websites:

2009 only
• USDA-NASS website: Also see the order form for all years on DVD at the cost of reproduction.

2006-09
• NRCS Geospatial Data Gateway: includes some earlier years for other states (see status map).

Using the Data

Minnesota's state Department of Agriculture (MDA) has been using the CDL for a few years now, with mixed success but overall satisfaction. "Before the CDL, we had very few options for geospatial information on crops that was accurate, accessible, and

comprehensive. Now, every year we get an authoritative data source that meets most of our needs, and we're very happy about that," says Mike Dolbow, MDA's GIS Coordinator.

MDA's only caution about the data is potential performance problems when working with the entire state. In order to perform simple acreage calculations or other statistical analysis, MDA's Karl Hillstrom has had to clip the information down to the size of individual counties. Nevertheless, it has proved valuable for various individual applications, such as Potato Cyst Nematode surveys or monitoring watersheds for certain pesticides that are frequently applied to specific crops.

Hillstrom notes that "overall, the CDL provides a great look at agricultural distributions across Minnesota, and is particularly valuable for seeing crop distributions when you only display one or two crops at a time, like corn, soybeans, or sugar beets, which have very distinctive ranges."

More Information

See the USDA-NASS website for an FAQ section and metadata as well as contact information for further questions.

Census Bureau Launches Online Mapping Tool Showing 2000 Census Participation Rates to Help Communities Prepare for the 2010 Census
Adapted from press release

With mail-out of the 2010 Census forms less than one month away, the Census Bureau has unveiled a new online mapping tool that allows communities nationwide to prepare for the 2010 Census by seeing how well they did mailing back their 2000 Census forms.

Visitors to the new Google-based map will be able to find the 2000 Census mail participation rates for states, counties, cities, and census tracts. After the 2010 Census forms are mailed out in mid-March, the online map will be updated to include a tracking tool with daily updates of the 2010 Census mail participation rates for local areas across the nation. Users will be able to compare their 2010 Census progress using their 2000 Census rates as a benchmark.

"The future of your community starts with a look at its past," said Census Bureau Director Robert M. Groves. "The 2000 Census map allows communities to see which areas need extra attention and reminders to improve mail participation. We will be challenging communities nationwide to take 10 minutes to fill out and mail back their 2010 Census forms next month." The Census Bureau has also created an online toolkit with ideas that communities can use to inspire their residents to improve their mail participation rate.

The emphasis on encouraging mail participation in the census is a practical one. For every 1 percent increase in mail response, taxpayers will save an estimated $85 million in federal funds. Those funds would otherwise be required to send census takers to collect census responses in person from households that don't mail back the form. After the 2000 Census, the Census Bureau was able to return $305 million in savings to the federal Treasury because mail rates exceeded expectations — a move the Census Bureau would like to repeat in 2010.

In 2000, 72 percent of households that received a form mailed it back. The mail participation rate is a new measure designed to give a better picture of actual participation by factoring out census forms that the U.S. Postal Service was unable to deliver as addressed. It should be particularly useful in areas with seasonal populations or a large number of vacancies or foreclosures.

As required by the U.S. Constitution, the once-a-decade census must count every person living in the United States. Census data are the basis for our democratic system of government, ensuring that representation in government is equally distributed. The data also help determine how more than $400 billion in federal funds are distributed to state local and tribal governments every year. That includes money that could go toward roads, hospitals, schools and critical social services.

Geospatial Occupations Added to U.S. Department of Labor Website
Adapted from U.S. Department of Labor website

The U.S. Department of Labor/Employment and Training Administration's Occupational Information Network (O*NET) now lists five new geospatial occupations:

- Geospatial Information Scientists and Technologists
- Remote Sensing Scientists and Technologists
- Geographic Information Systems Technicians
- Precision Agriculture Technicians
- Geodetic Surveyors

You can find descriptions of most of these new occupations by doing an "Occupation Quick Search" on "geospatial" at the O*NET site http://online.onetcenter.org (Geodetic Surveyors seems not to include the keyword "geospatial.")

In addition to Quick Search, the site provides three other search options:

- **Find Occupations**: Browse groups of similar occupations to explore careers. Choose from industry, field of work, science area, and more.
- **Advanced Search**: Focus on occupations that use a specific tool or software. Explore occupations that need your skills.
- **Crosswalk**: Connect to a wealth of O*NET data. Enter a code or title from another classification to find the related O*NET-SOC occupation.

About O*NET

The O*NET program is the nation's primary source of occupational information. Central to the project is the O*NET database, containing information on hundreds of standardized and occupation-specific descriptors. The database, which is available to the public at no cost, is continually updated by surveying a broad range of workers from each occupation. Information from this database forms the heart of O*NET OnLine, an interactive application for exploring and searching occupations. The database also provides the basis for the website's Career Exploration Tools, a set of valuable assessment instruments for workers and students looking to find or change careers.

Non-Profits

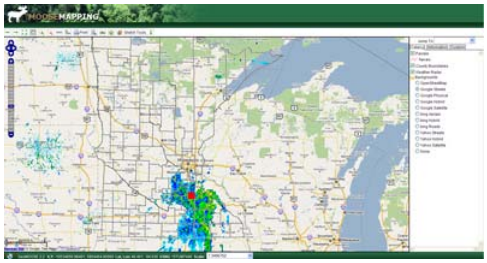
GeoMOOSE 2.2 is Released!

By GeoMOOSE Project Steering Committee

A new version of GeoMOOSE, an open source web application framework for displaying geographic data, was officially released in February 2010. Version 2.2, available at www.geomoose.org, provides exciting new features that users have been requesting, such as:

- New website with more documentation and a redesigned gallery
- Implementation of Trac to submit bug and enhancement tickets
- New layer types such as Bing Maps, Google Maps, Yahoo Maps, OpenStreetMap tiles and ArcGIS Server Rest services
- A new demo application to highlight the additional layer types in a Web Mercator projection
- Enhancements to the selection/buffer services and ability to download selection results
- Bug fixes to the geocode and popup services
- Addition of a feature report service
- Addition of a query builder service
- Addition of a user extensions framework to add your own code to GeoMOOSE without modifying the core libraries, an example of this is a dynamic zoom service
- Addition of custom cursors and scale bars
- More catalog presentation options

To get started with GeoMOOSE, simply go to the download page and install the software demo.



Out-of-the-Box demo that is available for download with the GeoMOOSE 2.2 release.

What makes GeoMOOSE unique is that it provides an out-of-the-box solution that makes it easy for non-developers to create web-mapping applications with typical tools such as navigate, search, measure and print. Non-developers only need to be comfortable with configuration files. GeoMOOSE has a number of strengths including modularity and configurability, and it delivers a number of core functionalities in its packages. The project has targeted local government business cases to distribute land records information, but many others have used it for much more. Since GeoMOOSE is an open source project, it has built on other popular open source projects such as OpenLayers (www.openlayers.org) and MapServer (www.mapserver.org).

Please visit the gallery http://www.geomoose.org/gallery to see how people have been using GeoMOOSE or to submit your own application. You can also visit the live demo from the main website link at the top of the page.

We are excited to see this project go from its inception as an application developed by the City of St. Paul, Minnesota, to an FGDC CAP grant project, to a robust open source software project used by hundreds of people across the world in the last three years. We hope you find the investment made by all the developers a resource to the GIS community. We are excited to see this project grow and we envision continued growth as more and more users find it.

We welcome feedback on the GeoMOOSE project and hope you give the software a try.

Contact the project steering committee for more information

- Dan Little: danlittle@yahoo.com
- Brian Fischer: bfischer@houstoneng.com
- Bob Basques: bob.basques@ci.stpaul.mn.us
- Jim Klassen: jim.klassen@ci.stpaul.mn.us
- Len Kne: lkne@houstoneng.com
- Brent Fraser: bfraser@geoanalytic.co

Low Cost GIS Options for Non-profit Organizations
By Angela Lee, ESRI

Maps and geographic analysis can be valuable tools for nonprofit organizations, especially community-based organizations whose work is focused on a specific geographic location, such as housing, social services, or environment/conservation organizations. ESRI has several options for making GIS data and technology available to non-profit organizations, from easy-to-use online mapping tools for basic needs to GIS software and training grants for more advanced needs.

Free online tools

Online mapping tools abound and it's now possible to create street maps, land use maps, maps of Census data, and many other types of maps with nothing more than a web browser. Many government agencies at Federal, state, and municipal levels have online

mapping services, such as the National Map, MN NorthStar Mapper , and many others. In addition, ESRI hosts two sites, Mapping for Everyone and ArcGIS Online, where you can create maps on a variety of topics that can be embedded in your organization's web site through a custom URL.

For more analytical capabilities, **Business Analyst Online** is a great option. Anyone can create a free guest account and generate maps and summary reports for basic demographic information, including population, income, race/ethnicity, education, employment, housing units, and more. Other types of information, including population forecasts, Tapestry lifestyle segmentation, and consumer spending data, are available for a fee. See the Business Analyst Online webpage for more information or to create a guest account.

For the more adventurous, you can build your own web applications using the **ArcGIS Web Mapping APIs**, which are free for noncommercial purposes. The APIs include analytic capabilities, such as geocoding, routing, query, and buffer, and there are code samples you can use to jump-start your application. The APIs are available for JavaScript, Flex, and Silverlight.

Finally, **ArcGIS Explorer** is a "virtual globe" that combines features of both online map services and desktop GIS. For example, you can integrate services from ArcGIS Online and other GIS servers (including Federal, state, and municipal government agency sources) with your own organization's data in shapefile or geodatabase format. You also can integrate photos, videos, web pages, and other documents to create multimedia-rich presentations, as well as publish and share your organization's data with stakeholders and elected officials for them to view in ArcGIS Explorer, which anyone can download for free.

Software grants and training

Organizations that need to create their own GIS data or conduct more in-depth analysis will need **professional GIS tools**, which can include ArcGIS Desktop, ArcPad, ArcGIS Server, and many others. ESRI President Jack Dangermond has always wanted non-profit organizations to have the same access to GIS tools as government and industry, so the ESRI Conservation Program (ECP) was established over 20 years ago, primarily to provide GIS software grants and training to environment/conservation organizations. In recent years efforts have expanded to work with more community-based organizations and other non-profits.

TechSoup Grants: In 2008, ESRI joined up with TechSoup.org, a leading technology provider to nonprofits, to offer ArcView software and training grants. TechSoup.org offers nonprofits a one-stop resource for technology needs by providing free resources and support from several corporations, including Adobe, Business Objects, Cisco, HP, Lotus,

Microsoft, Symantec, and many others. Qualified non-profit (eg., 501(c)(3)) organizations register with TechSoup, and once approved, they can request products and services from any TechSoup partner, including hardware and web application hosting, as well as software.

Requests can be made at any time; there are no deadlines. In addition, the grants are non-competitive in the sense that organizations are not competing against each other for a limited number of grants; any organization that meets TechSoup's eligibility requirements can receive grants. Grant recipients pay an administrative fee to TechSoup.org to cover overhead and shipping costs – fee varies by product requested.

ESRI offers three grant options through Techsoup.org:

1. ArcView with a Virtual Campus training course and the books *Getting to Know ArcGIS Desktop and GIS Tutorial*
2. ArcGIS Spatial Analyst with a Virtual Campus training course
3. ArcGIS 3D Analyst with a Virtual Campus training course. Qualified organizations may request one of each item per fiscal year.

ESRI Conservation Program Grants: In addition, ESRI continues to offer grants through the ESRI Conservation Program. Through this program, organizations may apply for a grant of software, training, data, and/or books, including products such as ArcInfo and ArcGIS Server. The application is made via an email form, which can be acquired by sending a blank email to grant@esri.com or by visiting http://www.conservationgis.org/grant

Applicants must describe how the grant will be used and what they expect to achieve with the software/training, and for more advanced requests they must also provide a self-assessment of their technical expertise. The goal is to ensure applicants are requesting the appropriate technology for their needs and that applicants have the necessary resources to be successful with GIS (hardware, training, etc.). Fees are on a sliding scale, with applicants asked to pay what they can afford. Applicants must describe their financial need, with smaller, all-volunteer organizations being expected to pay less than larger organizations with professional staff.

For **software grants**, one year of software maintenance (technical support and software updates) is included. After the first year, organizations can apply for maintenance grants using the same application form and submitting an annual status report, describing their progress and/or the challenges they encountered.

Training grants can consist of either instructor-led training at an ESRI office or online training through the Virtual Campus. Instructor-led training grants are on a "space available" basis, meaning grants are available for courses that are not already full. Applicants indicate the course title, dates, and location in their application and are placed on a "standby" list. Ten days before the course starts, the applicant calls ESRI and if space is available, his/her registration is confirmed. If space is not available, the applicant

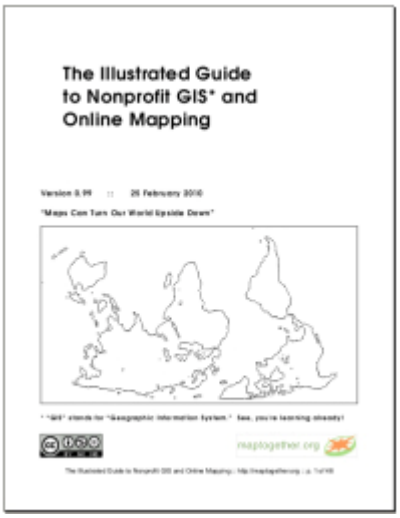
is placed on the "standby" list for the next offering of that course at that location. Virtual Campus training, in contrast, can be used at any time from any location.

In summary, maps and GIS technology should not be out of reach for non-profit organizations. A variety of options exist for creating maps and conducting GIS at minimal cost. The widespread availability of web mapping sites has lowered the barriers to entry and raised awareness of the benefits of a geographic perspective in addressing community issues. In addition, grants of GIS software and training are available to organizations with more sophisticated needs.

For more information, contact Angela Lee, ESRI Education Programs, at alee@esri.com or 651-994-0823.

The Illustrated Guide to Nonprofit GIS and Online Mapping
Adapted from MapTogether website

MapTogether has just released its *Illustrated Guide to Nonprofit GIS and Online Mapping*. The free 46-page illustrated guide includes:



- A brief introduction to mapping and GIS technology and concepts
- Examples of successful nonprofit projects using GIS and/or mapping technologies
- Helpful strategies for planning your own mapping/GIS project
- A review of public data sources with freely available data
- A brief review of free and low-cost tools for nonprofit mapping and GIS projects

The Guide is released under a Creative Commons 3.0 NC/BY/ND license.

The *MapTogether* project provides free map-related training and tools for community and nonprofit groups around the world. Their resources include software, data sets, online mapping services, documentation, and training resources.

Other Places

South Carolina Publishes a Guide to Developing Data Access Policies

Adapted from NSGIC Blog

The Geospatial Administrators Association of South Carolina has published a guide to help local governments, as well as all other levels of government and the private sector, develop and implement GIS data access policies.

The purpose of the guide – A Process Framework for Developing Local Government Data Access Policies (PDF) – is to enlighten and inform decision makers about specific GIS data access policy decisions. The goal is not for all organizations to have the same policies, but for each organization to formulate policies using an informed and well thought out process.

To help facilitate understanding and discussion, the document is written from the perspective of a non-GIS practitioner.

See the original blog entry.

GeoManiaWorld Online Map Quizzes

How well do you know your world? Use the free website GeoManiaWorld to test your knowledge of world geography and the location of cities and places. Select a game covering the whole world or focus on a region.

The games ask you to locate capitals and famous places at increasing levels of difficulty. The faster you click on a place and the closer your click is to the real location of the place, the more points you get. A red flag shows where you clicked; a green flag shows the actual location. The site displays the distance between the two flags along with a fun fact about the place.

GeoManiaWorld cheerfully provides feedback ranging from “You rock!” to “Wow, you almost nailed that one but you’re kinda slow” to “This is Earth. You know that, right?” See what it says when you allow time to run out without clicking anywhere…