Terrorism concerns affect web data

Public access curtailed

by Bob Gurda

Government policies designed to make it harder for terrorists to utilize geographic data have begun to surface. While there have been few attempts to curtail access to printed maps which historically have been available to the general public, access to digital data is another matter.

So far, few examples of restrictions have surfaced in Wisconsin. The Public Service Commission (state agency that regulates utilities) has underlined that GIS data it distributes is not to be redistributed to third parties, partly out of concern for homeland security.

To date, we have become aware of a couple of concrete examples from outside Wisconsin. In January, on-line searches of the USGS's Geographic Names Information System (GNIS) would not return certain types of features such as airports, bridges, dams, oilfields, reservoirs, towers, or tunnels. However, recently this functionality has been restored.

The State of New York has taken a much stronger stance. Their Office of Public Security shut down their GIS clearinghouse web site. Decisions on re-opening the site may be based on restoring access to non-sensitive data, and on other adjustments such as resampling digital orthophotos to a resolution of 5 meters (approx. 16 feet). Image files with pixels that coarse will not show features the size of vehicles at all and would be fairly useless in urban areas.

An uncertain future

These steps in curtailing access in order to enhance security may be simply the first of many more to come in other jurisdictions. Or, they may turn out to be somewhat extreme reactions that are at least partially retracted in the future.

Virtually all of the data to which web access has been curtailed to date can be obtained fairly easily through other avenues, and shutting down all of those access points would be a complex undertaking.

One thing is certain: this story has just begun to unfold.

Fundamentals of Map Design

Tuesday, April 9, 2002
8:30am - 4:00pm
Registration fee: $175
Held at the Pyle Center (UW-Madison)

This workshop will cover basic concepts and steps in map design and introduce methods to choose approaches appropriate to the type of data, the audience, and the medium.

(see page 9 for further background)

Acquiring & Integrating Wisconsin Spatial Data

Thursday, June 6, 2002
8:30am - 4:30pm
Registration fee: $250
Held on the UW-Madison Campus

This hands-on workshop will address the technical and institutional issues associated with acquiring and integrating GIS data from diverse sources including the software tools available.

(The following day a separate workshop on Data Integration is also scheduled).
For details visit **www.lic.wisc.edu/training**

WLIB News

by Ted Koch

The Wisconsin Land Information Board last met on February 6 in Madison, and prior to that on January 16 (by conference call). The Board's next meeting will be held March 14 in Green Bay in conjunction with the Wisconsin Land Information Association's Annual Conference.

Officers for 2002 elected

At the February 6 meeting, the Board conducted its annual election of officers. For the fourth consecutive year, Ted Koch, State Cartographer, was selected as Chair. Also elected to a fourth term as Vice-Chair was Fred Halfen, Regional Vice President of Ayres Associates' Madison office. Elected to a third term as board secretary was Tom Ourada, Executive Assistant at the WI Department of Revenue.

Filings generate record fees

Revenues for the Wis. Land Information Program are on a record pace for the first 7 months of the fiscal year, likely due to a large number of mortgage refinancings.

For the seven months from last July through this January, fees forwarded from county Register of Deeds offices were $2.15 million. That compares to $1.4 million for the same period last year, $1.6 million the year before that, and $2.0 for the seven months in 1998/99, the record year for filing fee collections.

Counties retain over twice as much of the document filing fees as compared to the amount they send on to the Land Information Board in Madison which uses its portion of the fees for administrative expenses and to fund grant programs aimed at land records modernization.

Board sets SIG grant activities

At its January 16 meeting, the Board approved a list of prioritized activities eligible for project funding under the 2001 Strategic Initiative Grant (SIG) category. SIG is one of four types of grants in which counties are eligible to participate under the state's Land Information Program.

Earlier, the Board had set aside $566,816 for this grant category; however, it deferred action on approving eligible activities. (See *Bulletin*, Fall 2001 issue).

Tax parcel info to the web

The SIG as approved by the Board consists of three components. The intent of the first component is to develop a master statewide index of tax parcels and related basic property tax information, and make this information available on the Internet. The majority of the data contained in the index will be information commonly printed on property tax bills.

As part of this grant component, the Board adopted a standardized file layout that counties and municipalities may populate with their own data. This standardized template contains common fields that are designed to accommodate the conversion of various formats of data.

Data that has been converted will be transmitted to the State-maintained Internet Web portal (*www.Wisconsin.gov*) which is maintained by the recently created WI Department of E-Government. As part of the Initiative, that department will develop a standard Internet browser application to support statewide, county, or municipal tax parcel information searches on the database. It is intended that users will not be able to directly download the information maintained on the state's Website. To be eligible to participate fully in the Strategic Initiative, counties will be required to participate in this first component.

Local web site support

The second component of the SIG provides grants for counties/municipalities to create or update a website. The maximum award is $1,800, and requires that the site provide land-related information. The web site may be operated by the local government, or hosted by a private vendor, or presented through the Wisconsin.gov portal. Counties/municipalities with limited or no existing web presence will be given funding priority.

The final component of the Initiative provides funds, up to $10,000, for the development of web sites that provide additional housing and land ownership related data such as the Register of Deeds' Tract Index, images of recorded documents, parcel maps, land use and zoning classifications, etc

The deadline for submitting SIG applications to the DOA's Office of Land Information Services was February 28. However, extensions to that deadline although some extensions have been granted to accommodate extenuating circumstances.

Planning Instructions released

Eleven state agencies are required by state statute to annually submit land information plans to the WLIB. Up to last year the requirement was every two years; however, that time-frame was shortened to one year through a provision included in the most recent state budget.

Over the past several months, the DOA's Office of Land Information Services has led an effort to revise the instructions for state agencies to follow in preparing revised plans. The new instructions direct agencies to prepare plans based on five technology "architectures" - applications, information, technology, organization and security. The plan due date from all agencies is March 31 this year.

2001 LIO Survey results on-line

Annually, the WLIB requires all counties to complete the standardized Wisconsin Land Information Program (WLIP) Annual Survey. The purpose of the survey is to provide a periodic assessment of the status, progress, and benefits of the WLIP to each of Wisconsin's 72 counties and to the WLIB. The 2001 Survey follows the format and structure of the 2000 survey. By tracking the same questions over time, users of the Survey are able to determine the status of the WLIP today, understand how it has changed from prior years, see changes in things such as software, type and extent of data available, and types of applications that use the data. The 2001 survey is nearly complete, and results, by individual county, may be viewed on-line at *www.doa.state.wi.us/olis/wlip/survey2001/ResultsNav.asp*

The WLIP: Will the sun continue to shine?

by Ted Koch

As chair of the Land Information Board, I am obviously very interested in the overall progress of the Land Information Program which the board oversees. The WLIP annual survey provides one measure of progress. The survey, which is completed by all 72 counties using a Web-based form, provides a periodic assessment of status, progress, and benefits.

The results of the 2001 survey are now viewable on the DOA's Office of Land Information Services web site at: *www.doa.state.wi.us/olis/wlip/survey2001/index.asp.*

Board's performance measured

Since I chair the board, I am particularly interested in how the board's performance for the last year is rated. On a scale of 1-5 (low to high), the performance rating was 3.1. Not too bad, I suppose, especially given the stress over the governor's budget proposal to eliminate the board, the recent controversy concerning additional funding for providing housing-related data on the Internet, and the Strategic Initiative Grant.

Parcel mapping moves ahead

Another section of interest to me is the one on parcels, particularly the question asking for, "percentage in digital form". Some significant gains have been made here in the past two years: 21 counties are now complete, while another 8 counties are over 80%. These numbers may be tempered a bit by the fact that 24 counties are still below 50% complete, but many of those are making steady progress.

Modernization stages rated

A third section of prime interest is the one on modernization stages. For this question, each county is asked to select, from six choices, all those that describe the current stage(s) of land information system development. The choices range from no activities through system initiation, database development, record keeping, analysis, to use in decision making.

For the first time, all counties report some kind of modernization activities. Over 90% report to be in database development, and over 70% in the record keeping phase. Over 40% report use of land information for analysis (making complex queries), and over 25% are using the information in county decision making.

The last two phases show marked increases versus last year's survey— a good and encouraging trend. It shows that use of land information becoming n increasingly integral part of local government operations.

The future is now

So, by the several measures cited above, the WLIP is moving forward at a healthy pace. That's good, but in gazing into the immediate future how do things look?

The program and board face two significant challenges within the next 18 months — challenges that could decide the fate of both the program and the board.

The first challenge is the delivery to the legislature no later than this September 1 a report on recommendations for continuing of the functions of the WLIB and the Wisconsin Land Council, and an analysis on the feasibility of combining their functions. This is an important report. The administration's original budget proposal for the current biennium proposed a merger of these two entities. The land information community last year took exception to that proposal, and the legislature removed it. Thus, the merger didn't happen, but we are facing the same issue again, and this report will have to clearly document and justify the continued role of the WLIB.

The next challenge is the current statutory provision that sunsets the board on September 1, 2003. The sunset would not only terminate the board, but also end collection of a portion of the recording fees at the County Register of Deeds offices.

The reduction would be more than 40% (reduced to $4, rather than the current $7, for each document recorded). No doubt that a reduction of this magnitude, along with the elimination of the board and its rules, standards and grant awarding authority, will spell the end of the WLIP as it now exists, and end the noteworthy progress

---

State Land Information News, *continued from page 2*

WLC News

The Wisconsin Land Council met on January 24 and March 7 in Madison. The next meeting is scheduled for April 19. For minutes and agenda, visit *www.doa.state.wi.us/olis/land_council.asp.*

Planning Grants approved

On January 24th the WLC awarded 24 Comprehensive Planning Grants. Awards totaling $3 million were made to 2 regional planning commissions, 6 counties, 5 cities, 7 towns, and 4 villages. The Land Council received 89 applications requesting $4.6 million; however, only $3 million had been allocated for the 2002 fiscal year. The 8 grants awarded to RPCs and counties actually benefit over 100 municipalities.

Comprehensive land use plans are developed and adopted by communities as part of the State's "Smart Growth" legislation included as a provision of the state budget in 1998.

Land-use goals inch forward

At the January meeting the WLC continued to discuss and refine a list of state land use goals. Developing such goals and then recommending them to the Governor is a statutory charge contained in the original legislation creating the WLC. At the meeting on March 7, the goals will be presented to the Council for approval. They will then be forwarded to various interest groups for comments to be incorporated into a final recommendation to be sent to the Governor this summer.

Focusing on land info customers

Jim Johnston has been the director of the Land Information Department for Polk County since 1996. His one-year term as president of the Wisconsin Land Information Association concludes this spring.

You not only work for a county, but you also serve on a city council. What effects on mapping and land information do you anticipate as recession-driven reductions in state shared tax revenues are implemented?

We don't know how deep the cuts will be, but I expect that work done for us by contractors will be reduced unless it is supported by grants. Internship positions will be vulnerable, and plans to expand Internet applications will likely be put on the shelf. As always, cooperative arrangements and data sharing will be emphasized, since we all need to "do more with less".

> The WLIB has been resilient despite chronic vacancies.

As president of the WLIA, and a member of its board prior to that, you have seen the organization in action during some eventful years. What strikes you about the organization?

The diversity of our general membership is a great strength. We have people from every corner of the land information arena.

From the leadership perspective, our board has shown passion and dedication to our mission despite the annual turnover in its membership. We discuss, we argue, and then what we decide becomes a consensus position. The committee leadership has generated progress. Our educational program the last few years has been outstanding.

That brings me to a second point. I wish we could focus even more on education and networking, but we have had some of our energy diverted by political matters generated in Madison, which we simply had to address in order to keep the state's land information program pointed in the most effective direction.

How is the land information program doing, in your opinion?

There has been so much progress at the local level. Most encouraging is that even counties with modest resources have been coming up with useful systems in the last several years. Most counties are also using resources beyond the program's retained fees to support the activities. That's a testament to the value of computerized land information.

> We are enjoying an infusion of energy from recent graduates of GIS programs.

Judging simply from the public's interest shown in my county, I am impressed by how much things have changed. People want our orthophotos, parcel maps, and more. Some of their curiosity arises from interest in consumer GPS equipment and computing, but I also believe that the citizens have become more savvy in terms of land information generally. They are asking for more every day and expecting it to be on the Internet, too.

How about the program at the state level?

Those of us in local government are still looking for real, sustained cooperation and collaboration amongst the state agencies. I realize that there are no funds in the state program to encourage this kind of work, but it has been a long-term frustration.

As for the land information board, it has been remarkably resilient despite chronic vacancies. I am impressed that the board so quickly formulated the current strategic grant initiative. The association has been deeply concerned that the current governor (and his predecessor) has been slow to select replacements when terms expire. This passively saps the board of energy and threatens even having a quorum for meetings.

What kinds of trends do you see in this business?

We are enjoying an infusion of energy from recent graduates of GIS programs. It's only been a few years now that these focused programs have existed, and the graduates bring high expectations. They are less oriented to the data-building phase from which we are emerging and more oriented to creating products through analysis.

> We all need to be shifting focus from data collection to our customers.

This represents good timing, since we all need to be shifting focus from data collection to our customers. Their needs are going to drive the next phase of land records modernization, even as we struggle with the issue of privacy especially in context of Internet access.

Customers come from inside our organizations as well as outside. The planning work connected with Smart Growth is a great opportunity to showcase the benefits of our modernized land information. Public safety and health are some other areas where interest is rising.

What does the future hold?

First, it's clear that the power of computing devices continues to race ahead. Neither digital orthophotos nor the Internet were big topics ten years ago, so who knows what fresh tools will emerge in the next decade. We're in for some surprises and will adapt as usual.

There remains a lot of work to do in modernizing our land records, but a huge amount has been accomplished. Probably only a few people truly appreciated how enormous that task was going to be when the founders of our state's program laid out the path 15 years ago. After all, our goal is to modernize a long list of foundational elements; had the goal been just two or three of those, we would likely have finished by now, but the result would have been very limited in value.

> Only a few people truly appreciated how enormous the task was going to be.

What strategic issues are on the horizon?

As we develop the customer focus, we will also need to balance demands to deliver products against the reality of what can be built, all under the constraints of limited resources.

When my colleagues are discouraged by the political battles we have had to fight, I always remind them that our products are good and our situation is strong. It is a long process and as our customer base grows we will gain even more strength. That, along with more educational programs, will serve us well.

Q: *I located information on an aerial photography project by visiting your web site, but when I contacted the party listed to order some prints, I discovered that the price for an actual photographic copy was far higher than for a computer plot of an orthophoto. How are there two products different and why might I need one versus the other?*

A: Your question reveals a shift in the way we use aerial photographs in mapping. That shift began only a few years ago and when (and where) it's going to stop isn't clear yet. One thing is clear: we are going to have to adapt.

The simple fact is that it has become **convenient to store computerized images** of aerial photographs for rapid retrieval and printing. The traditional method involves locating heavy rolls of 10"-wide photographic film, spooling through a roll to the appropriate frame(s), and then making contact prints or enlargements through a conventional photographic/darkroom process. It's obvious that when the option of scanned photographs is one of the choices for copies, the **traditional method of photographic prints is going to be more costly** — both for labor as well as materials.

Aerial photography has been a common way to gather and preserve information (through an image) since the 1930's. In just the last 10 years or less, however, more and more we are seeing organizations interested not only in contracting for coverage (e.g., a county) of fresh photographs but also in having the images converted to digital form for computer display in the form of map-accurate orthophotos. While this is a wonderful trend in the world of mapping, the digital orthophotos do have some characteristics that limit their use as compared to traditional aerial photographs.

It has been possible for several years to scan aerial photographs at high resolution to produce computerized images, and this process has become quite economical. **Simply scanning a photograph, however, does not make it accurate like a map**. A complex process called differential rectification is necessary to attain that accuracy, and the result is called an orthophoto(graph).

Today almost all of the computerized aerial photographs available from various sources are produced through an orthophoto process. For many traditional uses these will be perfectly adequate. In fact, if you are wanting to overlay other geographically referenced information accurately, having the orthophoto is essential.

However, since the differential rectification process removes "errors" found in the original photographs, **you cannot expect to use orthophotos to view the vehicles, trees, buildings, etc. in 3-D**. For this purpose you need unrectified images. Usually these will be photographic copies made from the original film negatives.

You might wonder if, instead of an available digital orthophoto, you could get the scanned photograph's digital file the way it looked prior to the differential rectification process. Then you could use digital (but unrectified) images for stereo 3-D viewing. It sounds like a perfect solution but **you may find it especially hard to locate the unrectified scanned computerized images**. In the case of some orthophoto projects, the simple scanned file may have been considered to be merely temporary and thus was thrown away soon after. (And, because it can be difficult for the uninitiated to distinguish between the original image and the processed orthophoto image, the naming and indexing of the respective types of images becomes especially critical if you are going to keep both varieties around for ready access).

A bigger problem may be that while most aerial photography projects involve acquisition of overlapping ("stereo") images, once the orthophoto production work begins it may be standard practice to only scan every other photo image along a flight line. (Usually, that's all that's necessary to achieve continuous coverage). So, even if you can find unrectified digital photo images, you likely **won't have enough overlap between adjacent images** to use them for stereo viewing.

A partial solution to the lack of 3-D viewing when using orthophotos (which will look flat in stereo) is to "drape" the images over a digital terrain model. This is a job for fairly high-end viewing software, but you might find an inexpensive solution. Nevertheless, **draping an orthophoto merely clothes a computerized terrain surface** with a thin layer of imagery. Nothing that projects above the land surface in reality will appear to do so; trees, buildings, vehi-

cles, etc. will all appear flat, although the hills will be obvious.

There is one more twist to this story. Even though it may have become less expensive for organizations to retrieve digital images, you may find that some that contracted for orthophoto production are wanting to **recover production costs** by charging a premium price (for direct digital copies or paper plots) which may be much higher than your alternative which is to get traditional photographic prints made from the original film.

Finally, even though the inks used for computer printers have improved greatly, you will still find that actual photographic prints will stand up to fading longer than computer plots. Of course, if you can get a copy of a digital image file, you can always make fresh copies yourself.

———◆———

Q: *What does surfing have to do with using the Internet?*

A: Our language changes with the times, and new words and terms arise regularly. At the same time, new meanings become attached to existing words and terms.

In the realm of computers, this effect may be more common than in some other parts of our lives. It seems almost part of the culture of people who build our computers, software, and application programs to seek out obscure words or to make up new ones.

In the case of "surfing the web", the story is more straightforward. A librarian by the name of Jean Armour Polly apparently was the first to use the term "surf" in connection with the Internet. In 1992 she wrote an article in a journal for the library science community where she explained the emerging tools available to search information through computer networks.

Polly explained later that she was grasping for a term to illustrate the concept of being able to skip from place to place around the world, and was inspired by a mouse pad at her desk with an image of a surfer riding a wave with the caption "information surfer". A year later the term appeared in the popular press and by 1994 it was in being used daily worldwide.
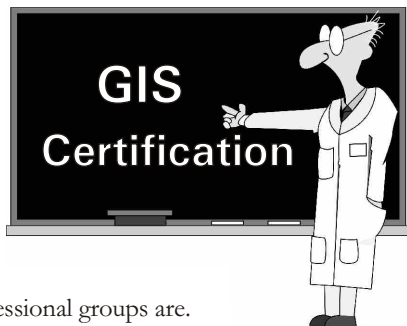
Should GIS professionals be certified?

by Bob Gurda

As the use of geographic information systems has spread, the people who operate them have become an identifiable group. However, these people are not formally certified as many other professional groups are.

URISA, the Urban and Regional Systems Association, has drafted a proposal for certification of GIS professionals. The proposal followed a period of study and comment. While it is clear that there are not easy answers to all of the questions, the discussion has begun.

Education vs. experience

One issue is that there are now a number of academic degrees available that focus on GIS. Why then should certification be considered when an academic institution can provide some authenticity of a person's level of professional capabilities?

Of course, one problem is that there are many people in the GIS field whose educational credentials were granted prior to the time when GIS was a common term. Another question is whether educational attainment alone is enough to gain professional status. Work experience and continuing education after receiving a degree are valuable, too. In addition, participation in professional associations provides another source of knowledge.

The URISA proposal integrates educational and work experience. It uses a point system in three categories: Educational attainment, Professional experience, and Contributions to the GIS Profession.

The points in these three categories then are translated into five levels of certification: Beginner, Novice, Experienced, Master, and Expert.

Listen or join the discussion

The committee is continuing to work on the proposal, and you can read (and if you wish, comment on) the "Proposed GIS Certification Program" at *www.urisa.org.*

Who is involved

The 38-member committee working on the certification proposal includes a wide range of people representing academia, government at various levels, industry, and professional association. The group is chaired by Professor William Huxhold of UW-Milwaukee who has been active in URISA since its early days and who has also had a long-term interest in the quality and quantity of the people needed to staff effective GIS programs.

USGS assigns new state liaison

by Ted Koch

The US Geological Survey's Geography Division has assigned a new person as its Wisconsin liaison. Diane Eldridge from the USGS Eastern Region Office in Reston, VA has replaced Ray Fox who works out of the Central Region Office in Rolla, MO.

The change in liaison responsibilities is due to changes in organizational structure within USGS. Up to several years ago, Wisconsin, Illinois and Michigan were part of the then USGS Mid-Continent Region which was headquartered in Rolla. However, as part of a realignment within USGS, these three states were placed in an expanded eastern region which is headquartered in Reston. This readjusting of states within regions has ultimately led to a change in the Wisconsin state liaison home-base from Rolla to Reston.

With this new assignment, Eldridge will have responsibilities for both Wisconsin and Illinois. Overall, the Geography Division state liaisons have the job of coordinating mapping activities between USGS and other government agencies and the private sector.

Eldridge, who previously worked on coordination projects between USGS and the National Imagery and Mapping Agency, is new to state-related liaison work. However, she is not entirely unfamiliar with Wisconsin, having graduated from Northland College in Ashland some years ago before beginning her career with the USGS.

Professor Paul Wolf dies

by Bob Gurda

As we go to press, news has come of the death of Paul Wolf. A very popular and effective instructor and mentor at the University of Wisconsin-Madison, Wolf's former students of surveying and photogrammetry are scattered across the state, nation, and world.

Services were scheduled for March 10.

Memorials have been requested to go toward the *Paul R. Wolf Professorship.* These can be sent to the University of Wisconsin Foundation, 1848 University Avenue, P.O. Box 8860, Madison, WI 53708-8860.

SCO staff update

by Bob Gurda

Sheila Haskins joined the SCO staff late in January. She is a graduate student in the Environmental Monitoring Program. Sheila is providing support for our metadata workshops.

Mandi Kornhoff finished up her work on the recently completed OrthoFinder grant and left the SCO staff.

Paths may form interesting patterns

by Bob Gurda

Yet another use has surfaced for the Global Positioning System. People have begun to track their routes and then upload the path traces to a computer, convert them into graphics files, and post them on the Internet for others to see.

This hobby has several facets. First, a person can attempt to travel on the ground in such a way that the path traces out an identifiable pattern (letters of the alphabet, words, or recognizable designs such as the outline of a butterfly).

A second approach is simply to document a travel such as the path of a person's errands during a weekend morning. This may or may not be interesting to anyone else, but the result may happen to catch someone's eye. (Or, try a longer trip such as across an ocean on an airliner).
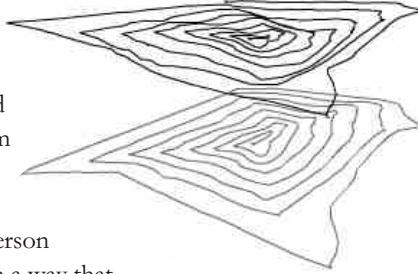
3-D adds perspective

Since GPS gathers positional information in three dimensions, a path can be more than a standard map in plan view. One example is a sky dive which can then be portrayed on a dynamic web page where the viewer can rotate, zoom, etc.

Another 3-D method that could yield a useful visualization would come from walking around a landscape feature (e.g., a hill or ridge). For instance, attempting to stay at the same elevation would collect something like a contour line on a topographic map; then, change to a new elevation and repeat the process. Even line traces that change elevation could work when processed into certain display software. Either way you could view the resulting landscape surface from various angles and altitudes, then rotate the whole image at will.

Make 3-D models, too

From paths on the ground (or in the air), you could also take GPS data and create profiles on paper, then arrange the strips of paper to form models. Using different colors, textures, and materials opens up additional artistic avenues.

To see some of these effects, take a look on the web at *www.gpsdrawing.com*. Maybe you'll decide to contribute some of your own art work to a gallery!

———✦●✦———

GPS broadcast station upgraded

by Bob Gurda

A National Differential GPS station serving Wisconsin has been upgraded. The station "Wisconsin Point" in Superior now has a 150-foot tower and its transmitter is broadcasting with 800 watts of power.

The effect of this upgrade should be a larger area of coverage for people wanting to achieve real-time correction of GPS data collection in the field. The transmitter operates at 296 kHz and 100 bps.

For information on the entire group of DGPS consult *www.ngs.noaa.gov/CORS/*.

(source: Minnesota GIS/LIS News)

Web begins second decade

by Bob Gurda

Believe it or not, the first web page was developed only ten years ago. This method of harnessing the power of the Internet has become so wildly popular as a way to find information from around the world that it's almost hard to recall what life was like "before the web".

There were press reports this last December of a celebration in Palo Alto, CA. It was the tenth anniversary of the first web page which consisted of three lines of text and two links, one for electronic mail and the other to access a data base at Stanford University.

A very quiet start

Most people don't remember the debut of that first web page in late 1991 because its significance hadn't been appreciated beyond a small group of researchers. It was almost a private happening. Most people also aren't aware that the work leading up to that first web page was done in Europe.

Browsers open the door

The web, of course, did become popular not too much later. The big breakthrough was the development in 1993 of the program called Mosaic, first for Unix. Versions for personal computers appeared shortly thereafter. This fueled the growth of web servers from 53 at the beginning of 1993 to 10,000 just 24 months later.

Today, the search engine Google reports that it catalogues over 2 billion web pages, and that number increases daily.

What will 2012 bring?

Given how drastically the web has changed the way many of us provide and locate information, it's impossible to guess what further developments will occur in the next 10 years. One thing seems clear: maps and spatial analysis will be far more sophisticated on the web than they are today.

(source: Mobile News from uk.gsmbox.com)

Readers voice their preferences

Survey results are in

by Bob Gurda

You — our readers — are a diverse group. We have known this in the past, and the comments and preferences you expressed in our latest reader survey show that the diversity continues.

Some of you like to read about policy developments while others prefer technical aspects of geodetic control. Some want to know about the latest published maps, while others go for news about aerial photography. And where one person looks first for news, another heads for the Question and Answer page.

So, as far as the mix of content we have been offering in the *Bulletin* in recent years, there doesn't appear to be a compelling reason to change. We will continue to try to aim for a mix of information.

Multiple readers per copy

You are also people who share your copy of the *Bulletin*. According to your reports, over three additional people, on average, read each copy that we mail out. We do appreciate those of you who circulate the newsletter since that helps us control our costs in printing and mailing and still gets the copy into the hands of people who can benefit from its content.

Electronic approaches gain

If there is a single big trend in our readership, it's one that won't surprise you. As a group, you are becoming serious users of our web site and of electronically delivered news.

On average, each of you use our web site over 7 times each year. Among you is a group of about 20% that visit our site about twice that often on average, including about 6% that do that surfing about twice each month.

News via e-mail is growing

About 60% of you said that either you are interested in receiving Wisconsin-related news, or you already read news delivered by e-mail on a regular basis.

We have given some thought to developing a method to route news to people who request it, using e-mail for delivery. Given our small office staff this would be a challenge, although we are investigating ways to partially automate the process.

The first step is already in place: our news story database which you can access through our web site. This service doesn't alert you when a news story has been posted; rather, it relies on you to visit our site frequently and look for fresh news.

Shaving the mailing list

In each of our two previous issues, we asked all of our readers to return a postcard indicating their interest in continuing to receive the *Bulletin*. We appreciate the effort invested by those of you who returned that card and who completed the reader survey. The survey provides us with important information!

Some people did not return that card and will find that they have been removed from the active mailing list. As printing and mailing costs have continued to rise in recent years, we do need to pare the mailing list from time to time to ensure that recipients of the *Bulletin* are truly interested in being readers.

Program cuts proposed

USGS budget to decline?

by Bob Gurda

President Bush is proposing an overall reduction in the budget for the U.S. Geological Survey for the upcoming fiscal year (beginning October 1). Based on preliminary numbers, it appears that some mapping programs would be supported with additional funds while others would suffer.

The overall budget decrease would be about 5%. Of the total proposed budget of $867.3 million, about $1 million would go to accelerate digital mapping in Alaska, apparently to provide information needed for resource management decisions such as tapping into oil reserves.

Additionally, the USGS proposes $1 million to develop enterprise GIS tools, bringing together geospatially referenced hydrologic, biologic, geologic and topographic data into a common decision support system needed by land and resource managers. Considering the size of the agency and the amount of geospatial information it collects and distributes, $1 million seems a rather small amount to apply to such a large integration challenge, although the plan may extend beyond the initial year.

Customer focus: outside funding

Based on comments by Chip Groat, the Director of the USGS, it appears that the agency will be focusing more than before on serving other parts of the U.S. Dept. of the Interior at the expense of other federal agencies and non-federal partners. Such a move is not surprising in times of budget reductions, but it is does mean fewer opportunities for sharing the costs of data development. In recent years, USGS funds have been critical in developing nation-wide digital data such as orthophotos, elevation models, and hydrography networks.

A significant portion ($22.0 million) of the proposed decreases for USGS are in two water quality programs. The National Water-Quality Assessment Program ($-5.8 million) and the Toxic Substances Hydrology Program ($-13.9 million) provide extensive data and research-based information to state and Federal regulatory agencies such as the U.S. Environmental Protection Agency. Included in the Toxics Program reduction is a $10 million transfer to the National Science Foundation to initiate a competitive-grants process to address water-quality issues. The budget request for the NAWQA program reflects a plan to secure funding from partners and customers to maintain NAWQA's current schedule and scope.

(source: USGS press release)

Be aware of the important angles

Learn map design on April 9

by Bob Gurda

As the State Cartographer's Office we deal with a wide variety of topics that loosely center on the practice of mapping. However, one focus area constantly lurks in the back of our minds — the design of maps.

If your map isn't well designed, it may not matter how well you have collected data and performed an analysis. If you are relying on a map to carry a clear message, but that message comes through muddled, then your other efforts may be wasted.

While expecting to achieve professional results may be impractical in many cases, you still should be able to produce respectable maps fairly easily. What you may not know is some of the key "tricks of the trade" that will help you make maps that "work".

Workshop gets you going in one day

College courses in map design run for an entire semester. However, you can gain a great deal of working knowledge in much less time.

The SCO is happy to be offering a one-day map design workshop on April 9 in Madison. This new workshop is one of several that are scheduled under the auspices of the Madison campus group SIAC (Spatial Information and Analysis Consortium).

Fundamentals of Map Design will be held at the Pyle Center just two blocks from our office in Madison. Instructors from the SCO are Ted Koch and Bob Gurda, assisted by Kent Pena of the Natural Resources Conservation Service's Madison office. The class runs 8:30 a.m. to 4:00 p.m. and costs $175.
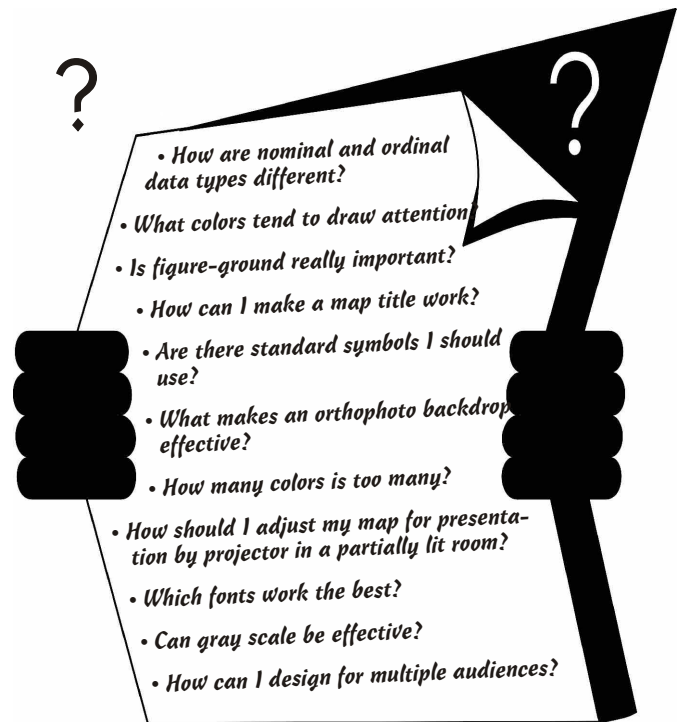
Map design from A to Z

We will cover basic concepts and steps in map design and introduce methods to choose approaches appropriate to the type of data, the audience, and the medium.

You'll also learn about visual variables and ideas for using color, patterns, and text. As a final step, attendees will evaluate maps and present their findings. By the end of the day, you will have much more confidence that you can produce effective maps with much less guesswork than before.

Give us a call for information

To find out more about this workshop, contact us at the SCO via phone at 608/262-3065 or via e-mail at *sco@facstaff.wisc.edu*.

? ?

- How are nominal and ordinal data types different?
- What colors tend to draw attention
- Is figure-ground really important?
- How can I make a map title work?
- Are there standard symbols I should use?
- What makes an orthophoto backdrop effective?
- How many colors is too many?
- How should I adjust my map for presentation by projector in a partially lit room?
- Which fonts work the best?
- Can gray scale be effective?
- How can I design for multiple audiences?

Documenting Wisconsin — one workshop at a time

Hands-on training this Spring & Summer

by AJ Wortley

What? You still haven't been to a metadata development workshop. That means you may wonder whether folks stay awake through those classes.

Come see. The SCO will be offering its final string of regional hand-on metadata training opportunities this spring and summer focusing on the **northeastern, eastern, and southern parts of the state.**

After four successful workshop from west to central to northwest this fall and winter, our remaining schedule will complete work under the FGDC grant which subsidized the coordination and travel costs to take these workshops on the road.

The time is now

Have you avoided the "M" word this long and wonder why one would want to start now? It's time to act!

These are "hands-on" events, conducted in computer teaching lab. There are no plans to offer more workshops around the state after this current series.

Metadata is here to stay. Whether we talk about it in an isolated sense or assume that metadata is an integral part of a data file, metadata is creeping into commercial GIS software, most notably supporting the ArcCatalog component of ESRI's ArcGIS roll-out and appearing in an SMMS for GeoMedia software permutation.

Finally metadata has arrived where it belongs: at the core of GIS data management and data processing.

We solicit attendee feedback to ensure our hands-on training is applicable and useable in everyday workflow and day-forward documentation efforts. So act now, and reserve a seat at a workshop in your area.

Schedule is evolving

Our next workshop will be Friday, April 19th at UW-Fox Valley. We are finalizing arrangements for subsequent workshops in the northeast, Milwaukee/Waukesha, and Madison areas.

Check our website's calendar for dates and locations. We are making arrangements for several teaching sites.

Highest resolution yet

New satellite sets up business

by Bob Gurda

After a surprising number of failures in the last few years, a commercial remote sensing satellilte was successfully launched and put into operation this fall. Quickbird, owned and operated by DigitalGlobe (formerly EarthWatch), is now circling the earth and collecting images following its launch on October 18. Data products are expected to become routinely available after the first of the year. For details, check *www.digitalglobe.com.*

The new satellite should compete directly with other earth-imaging platforms currently operating. Its panchromatic (gray-scale) images have a ground pixel size of 61 cm (2 feet) which is somewhat finer than what has been available from the IKONOS system (of Space Imaging) since September of 1999.

In addition, Quickbird delivers 4-band multi-spectral images (IR+RGB) at an 8-foot resolution. This is over ten times as sharp in spatial resolution as compared to Landsat (98-foot). On the other hand, Landsat collects more spectral channels (bands), particularly in the IR wavelengths which can be critical when trying to discriminate types of surface cover.

Replacement for orthophotos?

Quickbird is set to deliver images as sharp as what many organizations are now specifying in contracts for digital orthophotos. Data delivery will be as 70-centimeter pixels, slightly coarser than what the satellite's instrument will collect (61 centimeters). IKONOS is the only commercial system that comes close to this target. Time will tell whether competition between these two companies will drive down prices.

QuickBird's imaging swath will be 10.3 miles across on the ground. This is wider than the current competition offers.

Whether the weather cooperates

A caveat with any satellite imagery is that you cannot rely on cloudless skies on the day that the satellite is programmed to pass overhead. Quickbird, like many of the
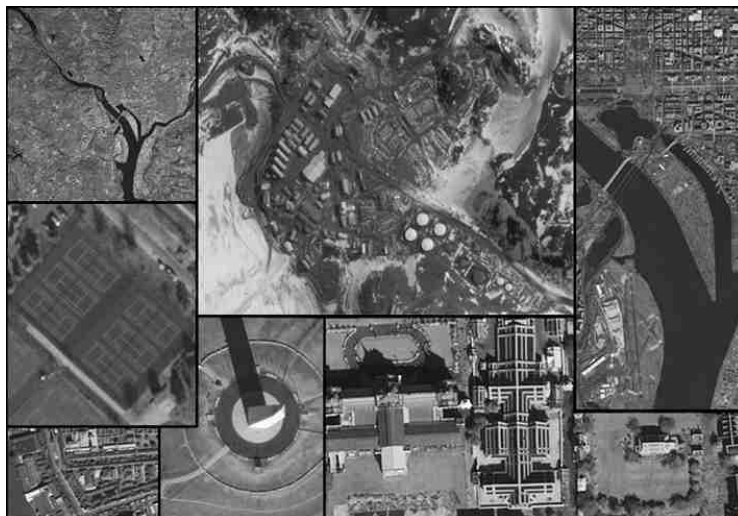

Image courtesy of www.digitalglobe.com

newer satellites, can be pointed to the side to some degree (usually for a fee). This may allow a higher percentage of cloud-free images on average. However, the resulting imagery typically won't have as high a quality as when the sensor is pointed directly downward; the pixel size (expressed in ground distance) will naturally become coarser

NIMA buys a whole lot

Speaking of market forces, it is interesting that NIMA —the U.S. government's joint mapping operation serving defense and intelligence agencies—recently purchased the exclusive rights to IKONOS images over Afghanistan. There is an obvious strategic purpose behind this action, but it does mean that, for instance, the media have no direct access to those images (unlike the pictures of the U.S. surveillance aircraft forced down in China this last spring).

USGS now handling Landsat

Landsat 7 is now fully the responsibility of the U.S. Geological Survey. NASA is not retaining any direct role in its operation, unlike the case of earlier Landsats. Neither is the federal government involved in a plan to commercialize sales of Landsat imagery, a process that was fairly unsuccessful with several earlier Landsats.

Landsats 4 and 5 are being prepared for decommissioning, having spectacularly surpassed their original 2-year design lifetimes. They were launched in 1982 and

1984, respectively. (Landsat 6 failed to achieve orbit upon its launch in 1993).

Discussions are underway to develop a Landsat Data Continuity Mission with a target of 2006. The private sector may participate in delivering data.

More coming down the pike

DigitalGlobe says that it intends to launch more satellites in the future, forming a constellation. With the launch failures that have swamped some companies' capacities to make such investments in research, development, and fabrication, it remains to be seen how viable a commercial proposition this sector of the mapping business will be. Military purchases of imagery may be the determining factor.

What does the future hold?

The recent downturn in the economy may reduce the smaller and more marginal sales that commercial operations had expected. State and local governments which often cannot run deficits (unlike the federal government) seem particularly likely to shy away from such purposes until their financial situation improves.

However, the primary customers, particularly those with a strong military or intelligence purpose, will likely continue their purchases. If so, the cash flow that is badly needed in order to soothe investors' nerves may be the factor that decides whether remote sensing satellites can support a mature business enterprise.

Standards, strategy, & seamlessness

What's up with DRGs

by AJ Wortley

Digital Raster Graphics, or DRGs, are widely used. Typically, DRGs are a scanned geo-referenced digital image of a standard USGS topographic map. They are useful in digital mapping as backdrops for navigation and context, for quality and error checking, and even for extraction or combination of features as in a DEM overlay or orthoquad composite.

A newly revised product standard and future strategy for data update, maintenance, and delivery may change how you work with DRGs.

New DRG Product Standard

First, there is a fresh DRG product standard. Although most printed quads were converted to DRGs several years ago, the USGS continues to update and correct DRGs. Furthermore, the DRG product standard is in continuous use for other work including National Park maps, maps of Antarctica, and notably USFS single-edition topographic maps. This wider and continuing application of the product standard, along with rapidly advancing technology, has fostered the need for an update to the production standard.

Resolution and color specs

Most notable in the update of the DRG product standard are an increase in the *allowable* scan resolution of the digital images from 250 dpi to a range of 250-1000dpi; and an *allowable* color model of up to 256 colors, versus the original 13-color format. These two differences are allowed but not required of newly-created or updated DRGs as an output specification. The new standard does require that DRG sources be scanned at at least 500 dpi, but they may be re-sampled in the final product.

"National Map" idea fits DRGs

The average age of a USGS primary series topographic map is 23 years. So, while they are a popular data format, is there any chance of getting them all updated in a timely manner to extend their useful life ?

Herein lies the other impetus for updating the DRG product standard.

Preceding and simultaneous with the DRG standard update has come a related and larger USGS initiative for Topographic Mapping in the 21st Century. This paradigm shift in digital topographic mapping is called the National Map.

National Map as real-time DRG

Suffice it to say that the vision of the National Map entails database management of digital cartographic base data (used to produce DRG "view") that is dynamically updated through raster and vector update techniques and published or delivered "on the fly" likely as a raster or vector, integrated or separated, but — most importantly — a seamless product.

In the short term, don't be surprised to find an updated DRG where the file size has grown due to better output resolution, or that your color mapping routines no longer work as before. While you may be inconvenienced, there will be long-term benefits. Flexible file standards, delivery formats, and anything else (provided it comes with good documentation) will help pus all as we gear up to see a nationwide re-evaluation of how we collect, store, manage, revise, update, publish, and distribute (with documentation) our digital base data assets that have, through great investment, made it this far.

To see the DRG standard, visit *rmmcweb.cr.usgs.gov/public/nmpstds/drgstds.html*.

———————•◦•———————

Comments considered

National Map advances

by Ted Koch

A year ago, the U.S. Geological Survey proposed a new approach for creating and maintaining, on a nationwide basis, maps and spatial data (See *Bulletin*, Spring 2001). The concept was labeled "The National Map", and essentially it called for an entirely new approach to the USGS's process of mapping the country, relying heavily on detailed information collected by a myriad of local- and state-based organizations.

Since the release of its initial report, the USGS has collected comments from the spatial data community. These comments have been folded into a final report released November 30, 2001. Documents on the map vision , the final report, and details on the initial group of National Map pilot projects are viewable at: *nationalmap.usgs.gov/*.

Reviews are mixed

The USGS received approximately 130 comments on the National Map proposal. Many were very supportive, and in general agreement with the proposal, often mentioning the potential benefits to be realized if it is successful. Others offered that this was a move in the right direction for USGS, that it represents a natural evolution which fulfills the USGS mission.

Other people suggested caution. Many wanted additional details on benefits, on the relationship to the existing USGS topographic mapping programs, on the roles of other federal agencies, specific details on content, standards and metadata, the relationship to the National Spatial Data Infrastructure, and availability of hardcopy maps for federal depository libraries.

Final report includes comments

The final report incorporates many of the suggestions offered by the spatial data community, emphasizing that the National Map will be linked to the topographic map series and the foundational digital data from which these maps will be derived. Additionally, the National Map is seen as a means to organizing the U.S. mapping community, and ensuring that data sets are nationally consistent, up-to-date and accurate.

Pilot projects begin

The USGS has begun a variety of National Map pilot projects to validate the use of partnerships that will be critical to acquiring current and reliable data. To measure progress, a 5-year strategic plan will link the National Map vision to annual accomplishments.

Details on the pilot projects can be found at: *nationalmap.usgs.gov/ nmpilots.html*.

Includes maps and detailed histories

Atlas of county boundaries

by Bob Gurda

What happened to Montgomery County, Wisconsin? How about New County, Gates County, or Tuskola County? The answers to these puzzlers are among the more obscure details of the creation of our state's counties. The whole story is told with words and maps in the Wisconsin volume of the *Atlas of Historical County Boundaries*.

Wisconsin's present 72 counties were formed in various ways. Crawford and Brown Counties go back to December 3, 1818, after which their boundaries changed many times. Each gave up land to create numerous other counties. Brown County alone had 24 different configurations.

Newberry Library fills a void

The Newberry Library in Chicago is coordinating a series of volumes to eventually cover the county boundary histories for all of the states. John Long is leading the project and serving as editor. The Newberry Library is a well-known center for study in the history of cartography and houses a large map collection.

The Wisconsin volume was published in 1997, one of the first in a series now totaling 19 volumes and covering 25 states. (Smaller states such as in New England are combined into a single volume). It runs 374 pages, most of which detail the history of one Wisconsin county after another. In cluded are partial histories of some counties in adjacent states that at one time had some legal connection with a Wisconsin county.

Also included is a map of Wisconsin's county configuration at the time of each decennial census beginning in 1820 and a set of 13 maps of the NorthWest Territory from 1787 to 1858.

For further information including how to order a copy, visit *www.newberry.org/ahcbp/netscape/*.

What about those "vanished" counties?

Gates County might ring a bell with a few people. It is the name originally given to what today is Rusk County (which got its current name in 1905, four years after it was formed).

New County is the named originally used for what today is Langlade County. The modern name was adopted a year after the county was formed in 1879.

Tuskola County never existed, but was proposed to be formed from the southern-most six townships of Washington County. The idea failed in 1850.

Montgomery County was a name proposed in 1846 for what is still known as Iowa County which itself was created in 1830 from part of Crawford County (which at the time included all of the western part of Wisconsin almost to Lake Superior). Residents of the area voted in referendum to use the name of Montgomery County, but the legislature never acted to implement that choice.

───◆───

Wall map useful for general reference

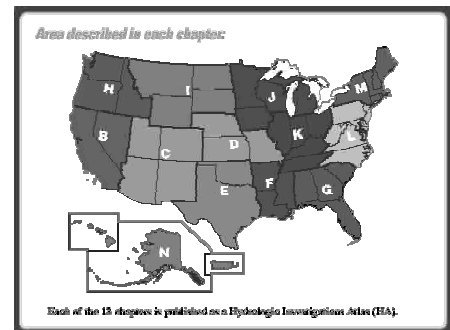## National base map updated

by Bob Gurda

The U.S. Geological Survey has issued a new base map of the United States under the National Atlas series. The multi–color map measures 42 by 30 inches which makes it a good wall map size.

The map portrays the U.S. international and state boundaries, large and small cities, state capitals, major highways, railroads and ferries, rivers and streams, oceans and bays, important natural features, forested areas, as well as terrain relief and selected mountain elevations.

USGS sells this map for $7 plus $5 shipping. Orders can be made by phone via 800/ASK-USGS.

For more information about this map (which is also called "General Purpose Map of America") and others in the National Atlas, visit *nationalatlas.gov*.

(source: USGS)

Area described in each chapter:

Each of the 12 chapters is published as a Hydrologic Investigation Atlas (HA).

Lots of maps on line

USGS ground water atlas

by Bob Gurda

Groundwater is an important asset, but because it lies hidden beneath our feet it is often forgotten. Even when we remember, it is difficult to grasp the subject because it is a complex combination of geological and human factors.

One way to better understand and appreciate groundwater is to study maps that show factors important to the quantity and quality of groundwater. The U.S. Geological Survey's Water Resources Division has been producing atlases of water-related features for years and is now delivering the text and maps via a web site.

See regional and WI maps

The *Ground Water Atlas of the United States* splits the country into regions. Wisconsin is grouped with Michigan, Minnesota, and Iowa. As a result, you can view a variety of maps, charts, tables, and photographs relating to that entire region or particular sub-areas within the region.

There are dozens of illustrations for the region. These include maps of bedrock geological and glacial deposits, so they are useful in understanding the geological setting of our region in general, as well as for background specific to groundwater. You can peruse the illustrations from links in the text, or you can link from a list of the illustrations alone.

Visit all of this on the web at *capp.water.usgs.gov/gwa/*. These are products of a USGS publications office located right here in Madison, serving the entire country!

Campus administration provides funding

SCO to coordinate campus GIS

by Ted Koch

The State Cartographer's Office recently obtained additional funding to provide support and coordination of geographic information sciences activities on the UW-Madison campus. The resources were provided by the office of the campus Provost (Vice Chancellor) and the Dean of the College of Letters and Science. The SCO is attached to the Geography Department, one of 39 academic departments within the College.

The expanded SCO support for campus-wide GIS will be done under the umbrella of SIAC (Spatial Information and Analysis Consortium), and will be spearheaded by Bob Gurda, Assistant State Cartographer. SIAC up to now has been a volunteer and mostly informally organized group of faculty, staff and students. Its purposes include:

> Encouraging cooperation between departmental instructional, research, and outreach programs.

Providing a forum for participation in the national University Consortium for Geospatial Information Sciences.

Keeping faculty, staff, and students informed about current activities, research opportunities and job openings through a website and e-mail list.

Sponsoring campus-wide events.

Helping maintain campus-wide software licenses.

The roots run deep

SIAC arose in the early 1990s from the UW-Madison's response to the National Science Foundation's call for the establishment of a National Center for Geographic Information and Analysis. Several decades earlier the campus was already internationally known for its programs in cartography and civil engineering.

New challenges

Over the last ten years the campus has experienced a large number of retirements of well-known faculty in this field. The vacated positions have been partially filled by junior faculty, and at the same time demand for more and expanded courses has grown. Through several recent initiatives funded by the campus and the State of

Wisconsin, several additional senior faculty with GIS research and teaching interests have also arrived in Madison. Some of the newer faculty are in departments to which GIS is a fairly new approach.

Due to this dynamic nature of GIS on the campus, there is a strong need for improved coordination and communication. At the same time there is also the need to extend certain campus activities to other areas in the state via improved outreach efforts.

A role for the SCO

The campus administration decided it was time to provide some additional resources to address some of these issues. The administration felt the SCO, due to its many activities both on and off the campus was the most appropriate organization to take on these tasks.

Initially, enhanced SIAC activities will revolve around coordinating and expanding the number and variety of workshops, updating and expanding the SIAC website, improving communication about GIS-related speakers and seminars on-campus, and having current and prospective students become better acquainted with SIAC goals and activities.


Uses county focus

Clarkson's County Map Book

by Bob Gurda

There's a new edition of county maps available from the Clarkson Map Company in Kaukauna. The book runs 128 pages, with two-page spreads for many of the larger counties. The last eleven pages of *Wisconsin County Maps* hold indices to municipalities and lakes.

The maps are printed in black ink with red ink as a spot color for icons identifying fishing areas, schools, and campgrounds. The map base is taken from maps produced by the
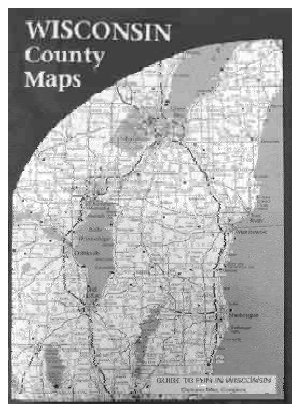
Wis. Dept. of Transportation which Clarkson has annotated with rural road names. The scale of the maps varies, with smaller counties being printed at larger scale.

This map book measures 11" x 15.5", the same size as what is probably its strongest competition, DeLorme's *Wisconsin Atlas & Gazetteer*. Clarkson's product sells for $16.95 while DeLorme's is priced at $19.95. DeLorme's uses a color base from the U.S.G.S. and includes a wider variety of features that are marked with icons (e.g., cheese factories, museums, etc.) and pages cross county boundaries with all of the maps the same scale.

For more information, visit *www.clarksonmap.com* or write Clarkson Map Company, Mapping Section, Hilldale Station, P.O. Box 5096, Madison, WI 53705-0096.

Thousands of maps viewable online

David Rumsey's Historical Map Collection

by David Handley

David Rumsey's vast private map collection was, until recently, only available to a few researchers and scholars granted special access to it. Today, after a massive effort to scan and catalogue the material, over 6000 of the maps are accessible via the Internet, in high resolution.

There are about 150 maps and pages from atlases in the collection featuring the state of Wisconsin. This includes several city and county maps, geologic maps, and even portraits of landscapes, buildings, and governors. The dates of the maps vary, but most are from the mid- to late-1800s.

Viewing & search tools work well

The quality of the online maps is superb; by utilizing the Insight¨ browser, extremely high-resolution images can be viewed in small portions, allowing for relatively fast downloading. Some of the maps are scanned at resolutions as high as 600 dpi, ensuring every detail is visible.

The comprehensive search engine allows the user to search for a particular map using practically any piece of information available, such as region, scale, author, or publisher.

The actual image viewing window offers a simple set of tools for navigating the image and displaying information on it. Panning about the image, however, is a bit tricky, as one can only click around the icon-sized image in the corner to shift the viewpoint.
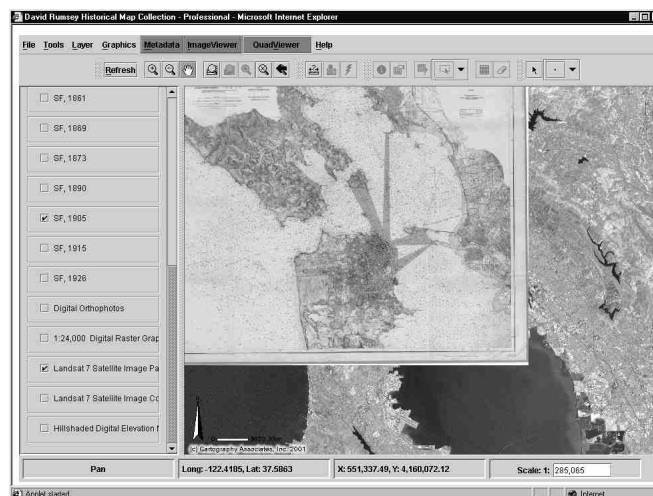

Detail of a map of Wisconsin, published in 1856

GIS offers added functionality

One of the newest, and possibly most useful features of the David Rumsey site is a GIS browser capable of overlaying historical maps onto current LANDSAT imagery. Not only can one view the images simultaneously, but various tools can blend or morph between them. This allows for extremely accurate representations of change detection over time, as well as many other applications.

This feature is not yet fully implemented (at the moment, only the San Francisco Bay area is available for view), but it is clear that this will eventually be a highly valuable tool.

Visit the David Rumsey Historical Map Collection at *www.davidrumsey.com.*

Browsing through maps of Wisconsin, with a larger thumbnail and brief metadata displayed in the left-side frame for a selected map.

www.geography.wisc.edu/sco

An example of the use of GIS to overlay a historical map atop modern imagery

2002

March 17-20, 2002, the **Geospatial Information & Technology Association (GITA) Annual Conference 25**: *Bringing IT Together: Charting the Course* will be held in Tampa, FL. Contact: 303/337-0513 or *wwww.gita.org.*

March 19-23, 2002, the **Association of American Geographers** will hold their annual meeting in Los Angeles, CA. Visit *www.aag.org*

————————————

April 7-10, 2002, **6th Annual Integrating GIS & CAMA Conference** will be held at the Nugget Hotel in Reno, NV. Call 847/824-6300 or visit *www.urisa.org/cama.htm.*

April 9, 2002, **Map Design Workshop** will be held at the Pyle Center, UW-Madison, Madison, WI. Contact either the State Cartographer's Office at 608/262-3065 or Tom McClintock at 608/263-5534.

April 9-10, 2002, **Illinois GIS Association (ILGISA) Spring Conference** will be held at the Radisson Hotel, Bloomington, IL. Contact Ruth Anne Tobias at 815/753-0922 or visit *www.cagis.uic.edu/ilgisa*

April 13-17, 2002, **American Planning Association (APA's) National Planning Conference** will be held at the Hyatt Regency Hotel, Riverside Center, Chicago, IL. Contact Deene Alongi at 312/786-6389 or visit *www.planning.org/conferen.index.html.*

April 16-18, 2002, **MidAmerica GIS Symposium** will be held at the Hyatt Regency Crown Center, Kansas, MO. Contct Rick

Miller or URISA Hdqtrs at 847/824-6300 or visit *http://magicweb.kgs.ukans.edu* or *www.urisa.org*

April 19, 2002, **Wisconsin Metadata Development Workshop** will be held at UW-Fox Valley, Appleton, WI. Contact Sheila Haskins at 608/265-8106 or visit *www.wisclinc.state.wi.us*

April 22-26, 2002, **ACSM 2002 Annual Conference & Exhibition and the 22nd Federal of Surveyors Annual Convention** will be held in Washington, D.C. Contact Linda Hachero at 301/530-1619 or visit *www.survmap.org.* .

————————————

May 2-3, 2002, **Wisconsin Land Information Association** will hold its membership meeting at the Racine Marriott Hotel, Racine, WI. Contact WLIA at 800/344-0421 or visit *www.wlia.org.*

May 9, 2002, **Wisconsin Chapter GITA seminar on Field Automation-Successful Solutions** will be held at Ruekert & Mielke, Inc., Waukesha, WI. Contact Thomas Tym at 262/542-5733 or email: tjtym@ruekert-mielke.com.

————————————

June 6, 2002, **Acquiring and Integrating Wisconsin Spatial Data: Tools and Techniques** will be held at the Land Information and Computer Graphic Facility (LICGF), UW-Madison, Madison, WI. Contact Tom McClintock at 608/263-5534 or email tlmcclin@facstaff.wisc.edu or visit *www.lic.wisc.edu.*

June 7, 2002, **Data Integration** will be held at the Land Information and Computer Graphic Facility (LICGF), UW-Madison, Madison, WI. Contact Tom McClintock at 608/263-5534 or email tlmcclin@facstaff.wisc.edu or visit *www.lic.wisc.edu.*

————————————

July 8-12, 2002, **22nd Annual ESRI International User Conference** will be held at the San Diego Convention Center, San Diego, CA. Call 909/793-2853, ext 1-1363 or visit *www.esri.com/events/uc.*

August 11-13, 2002, **4th Annual Street Smart & Address Savvy Conference** will be held at the Doubletree Hotel Jantzen Beach, Portland, OR. Visit *www.urisa.org/address.htm*

————————————

October 26-30, 2002, **URISA 2002 Annual Conference and Exposition** will be held at the Hyatt Regency Chicago on the Riverwalk, Chicago, IL. Call 847/824-6300 or visit *www.info@urisa.org*

To see a more extensive calendar of regional events, and to use hot links to other calendars, visit the SCO website.

———————————————————————

40th Annual Conference in October

URISA to meet in Chicago

by Bob Gurda

The Urban and Regional Information Systems Association (URISA) will meet again this year in Chicago. The professional association is celebrating its 40th anniversary in 2002.

40th Anniversary URISA October 26-30, 2002 • Chicago, Illinois

Wisconsin people have played an instrumental role in URISA over the years, helping found the organization, serving on its board and as president.

The proximity of Chicago provides a good opportunity for people in our state to attend a major national conference. The dates are October 26-30. Abstracts for proposed presentations are due by April 1.

Traditionally, URISA held its annual conference in the summer. Starting in 2001, however, the meeting was moved to autumn to avoid conflicts with other events.

This year, URISA returns to Chicago where the conference was also held in the summer of 1999. In 1994, the URISA conference was in Milwaukee.

Meetings in Racine and Wausau

WLIA meet in May & October

by Bob Gurda

The Wisconsin Land Information Association's next meetings will be the first two in a new arrangement. The WLIA is shifting away from a quarterly meeting schedule following this March's annual conference in Green Bay.

(Watch for a story on the highlights of the Green Bay conference in our Spring 2002 issue).

The association will next meet in Racine, May 2-3. Following will be Wausau, October 3-4. Then, the 2003 annual conference will be in Milwaukee, February 11-14.

For details on these upcoming meetings and any other events that might be scheduled, take a look at WLIA's web site: *www.wlia.org.*

About the SCO…

The State Cartographer's Office (SCO), established in 1973, is a unit of the University of Wisconsin-Madison. The SCO is located on the 1st Floor of Science Hall.

Our permanent staff consists of five people—Ted Koch, State Cartographer (608/262-6852), Bob Gurda, Assistant State Cartographer (608/262-6850), A.J. Wortley, Outreach Specialist (608/265-8106), Brenda Hemstead, IS Resource Support Technician (608/263-4371), and Ana Rumm, Financial Specialist (608/265-9368), plus several part-time graduate and undergraduate students.

The State Cartographer's position and mission is described in Wis. Statute 32.25 (12m). In addressing this role, the SCO functions in a number of ways.

publishes the *Wisconsin Mapping Bulletin*, catalogs, guides, brochures, and other documents and maintains a web site to inform the mapping community.

inventories mapping practices, methods, accomplishments, experience, and expertise, and further acts as a clearinghouse by providing information and advice in support of sound mapping practices and map use.

participates on committees, task forces, boards, etc. The State Cartographer is one of the 13 voting members of the Wisconsin Land Information Board and one of 16 voting members on the Wisconsin Land Council.

develops experimental and prototype products.
serves as the state's affiliate for cartographic information in the U.S. Geological Survey's Earth Science Information Center (ESIC) network.

About our Internet Web site…

Here, you will find links mentioned in *Bulletin* articles, information on a wide range of mapping topics, news items, functions and activities of the SCO, our on-line aerial photography catalog, a calendar of events, and links to related web sites. We encourage those of you with Internet access check out the SCO's homepage at

www.geography.wisc.edu/sco

About the WISCLINC Web site…

A second Internet resource is the on-line Wisconsin Land INformation Clearinghouse (WISCLINC). Its address is:

www.wisclinc.state.wi.us

At this site you can search and read metadata files, download certain data files, learn about our continuing work in this area, and link to other state clearinghouses.

State Cartographer's Office
Univ. of Wisconsin-Madison
Rm. 160 Science Hall
550 N. Park Street
Madison, WI 53706-1491

ADDRESS SERVICE REQUESTED