



State land information system outlined

Work group makes its recommendation

by Bob Gurda

Recently a group of experts recommended a path for Wisconsin to follow in developing a state-wide computer-based land information system (WLIS). The system's purposes are broad: to provide land information access and services for interested citizens, professionals and elected officials.

The Technical Working Group (TWG) of the Wisconsin Land Council (WLC) made the recommendations in its May 26 report to the WLC. Since that time several other groups have either endorsed or commented on the recommendations.

Immediate action to begin building such a system is not part of the recommendation because the group believed that too many questions relating to such a complex system remain unanswered at this time. Rather, the report calls for a structured approach to studying all factors involved at the same time as prototypes are being developed.

With the recent legislative action to eliminate WLIS funding from the Governor's proposed budget, no clear funding source has surfaced to support the work. This alone creates a large question about the future of WLIS.

The vision

In proceeding down the road toward building such an automated system called the Wisconsin Land Information System, the group said the state should embrace several principles: the system should:

- be distributed (i.e., access data locally);
- leverage existing standards and technology;
- support land information applications such as comprehensive planning;
- be developed incrementally; and
- include not only land information data but statutes and administrative rules, plans, and metadata.

The large task ahead

The broad vision outlined above, when translated into the detail of a work plan, will require a tremendous amount of effort to accomplish. The rationale for proceeding is that the stream

of benefits will justify the up-front and continuing investments in the system which will leverage the growing amount of data being developed by government at all levels.

The TWG looked for examples of existing automated systems that function the way the WLIS is envisioned to operate, but found only pieces here and there around the country. However, the supporting technologies are continuing to improve rapidly and will likely not be primary impediments. The major work will be in developing the institutional arrangements and funding need to build and maintain the system.

By building the system incrementally, advances in technology can be integrated along the way. Similarly, evolving institutional arrangements can be leveraged as they come into place, data can be integrated as it is developed, and access interfaces can be developed and improved over time.

How to fund the system?

The Governor's budget, as proposed in February, identified Land Information Board funds to start building WLIS. That amount (\$612,000 over two years) would support a small beginning, and was targeted mostly for computer hardware, software and programming. The proposal was controversial because the WLIS hadn't yet been clearly defined and planned, and because the WLIS had been given no role in directing the expenditure of those funds. As a result, the funds were removed by the legislature (see budget story on page 3).

continued on page 3

Highlights of this issue....

| | |
|---|------------------|
| <i>State budget proposals altered.....</i> | <i>3</i> |
| <i>Interview with Ben Niemann.....</i> | <i>7</i> |
| <i>GeoData Forum report & poster.....</i> | <i>8 & 9</i> |

WLIB News

by Ted Koch

Since the previous issue of the *Bulletin*, the Wisconsin Land Information Board (WLIB) has met on May 19 and July 21, both in Madison. The board's next meeting is scheduled for September 15, also in Madison.

Board vacancies

Vacancies in Board membership now number three, with the recent resignation of Vivian Gabower, from the City of Mauston. The three current vacancies cover representation by a county board supervisor, a city council or village board member, and a county official active in land information management. It is expected that the Governor's Appointments Office will announce new appointments to the board within the next several months.

Foundational Element Custodians

At its May 19 meeting, the board approved guidelines for custodianship of foundational elements, and the implementation of these guidelines for the custodianship of the state's geodetic networks which is a portion of the WLIP's Geographic Reference Framework foundational element.

The guidelines (model) identify the responsibilities of custodians as designated by the WLIB, to act as stewards and champions for a particular foundational element. Custodial responsibilities may be shared among organizations with the overall goal that data will be current, reliable and accessible. Custodial qualifications require adequate financial and staff resources, and a commitment to develop and maintain the data.

The custodial arrangement for Wisconsin's Geodetic Networks was drafted by the WI Dept of Transportation, with the recognition that a variety of organizations have many different responsibilities ranging from data collection and management, to data distribution and training, education and research.

Copies of the custodial guidelines and the Custodial Arrangements for Geodetic

Networks may be obtained from the Office of Land Information Services, or accessed from the WLIB's Web site (a link to which can be found in the SCO web site's Address Book).

Oversight Committees

At its May 19 meeting, board chair Ted Koch announced the formation of several oversight committees for current board activities including soils mapping, standards, strategic planning, and coordination of review of county and state agency plans. Committee membership will include a sponsor (board member), chair and other interested persons selected by the chair. These committees will be constituted and begin work over the next several months.

Land records fee collection tops \$10-million

Land Information Program funds collected at County Register of Deeds offices across the state set an unofficial record during the twelve month period, of July, '98 through June, '99. Based on the \$3,368,904 received by the Land Information Board, which is one-third of all fees collected by the 72 counties, the one-year total exceeded \$10.1-million.

The WLIP fees are collected when real estate transactions are recorded at county Register-of-Deeds Offices. \$2 of the \$6 transaction fee is sent to the WLIB in Madison, while the remaining \$4 stays within the county for investment in local land information projects.

Board close to approving new grant guidelines

The board, at its July 21 meeting, moved closer to endorsing new rules for its 1999-and-beyond local government grants-in-aid program. Although, the board did not take up final approval on the new aid package due to some last minute changes, it is expected that approval of a draft administrative rule setting the grant process will be completed at a special board meeting scheduled for the second week of August. It's anticipated that the board's recommendations will propose a plan similar to the in-

terim grant program in place the past two years. Once the board approves the draft version, the proposed grant rule will be reviewed by the Department of Administration, opened for comment at public hearings, reviewed by the legislature, and published by the DOA.

Board accepts report

At its July 17 meeting, the WLIB voted to accept the Wisconsin Land Information System Report produced recently by the Technical Working Group of the Wisconsin Land Council. In addition to accepting the report, the board also voted to support the "spirit and intention" of the report. Approval of this report will come again before the WLC at its next meeting (see story below).

WLC News

The Wisconsin Land Council last met on May 26 and July 14 in Madison. Future meetings of the Council are scheduled for August 19 and September 14 in Madison.

At the May 26 meeting the WLC considered the Report of its Technical Working Group regarding the vision and design for a computer-based Wisconsin Land Information System (see article on page 1). Studying and making recommendations on such a system is a statutory requirement of the WLC.

The report was presented to the WLC by Doug King, Chair of the Technical Working Group. The report contains details on the system's four design elements—computer applications, data, technology and organization—and recommendations on project organization and implementation. The WLC voted to accept the report at its May 26 meeting. At its July 14 meeting, the Council voted to defer any further action on the report until its August meeting pending the resolution of recommended changes to the report made by the WLC's State Agency Resource Working Group which takes its membership from state agencies.

State Land Information System Outlined,

continued from page 1

The TWG did not recommend a specific funding source for the WLIS. It not being a technical issue, the group looked to others to make that decision.

Who is involved?

The TWG, a group of 25 appointed by the chair of the WLC, DOA Secretary Mark Bugher, was led by Doug King a senior technology consultant with the DOA and former executive director of the WLIB. The TWG recommended in its report that it be reconvened to provide guidance during the continuing study and planning phases of the WLIS.

The TWG came to consensus on the bulk of its report but split 17-4 on several specific recommendations that included positions contrary to the Governor's proposed budget.

The report was delivered to the WLC which met and accepted it (May 26), but which then (June 14) deferred further action until the TWG met with another of the council's work groups (State Agency Resource Working Group) to resolve several differences of interpretation on specific recommendations. The two work groups met on August 2, and agreed to several changes in the report so that it can be brought back to the WLC at its next meeting on August 19.

Professional groups have an interest in the WLIS, too. The Wisconsin Land Information Association is supportive of the concept but is concerned about funding sources as well as any move to build a centralized system rather than one that ultimately links to local offices to access the most recent data.

An issue of some contention is how the WLIS would be directed, managed, and coordinated. The TWG called for an oversight and coordinating structure with representation from affected constituencies. Others have suggested the WLC should be in charge, and others that the WLIB should have a role if their funds are going to be used since the system will be built on investments in data, technology, and standards made within the Wisconsin Land Information Program.

What does the future hold?

Assuming that the state budget, when it is finally enacted, contains no direct funds for WLIS, it is hard to predict what will happen. Funds could be transferred from other state sources following a recommendation from a group such as the Land Council to do some modest prototyping.

WISCLINC (the Wisconsin Land Information Clearinghouse) contains a portion of what is envisioned for the WLIS, especially metadata. Work in that direction is accelerating for 18 months (see article on page 4) but beyond that point the future is also unclear.

This story will continue to unfold in the upcoming months. Watch the "News" section of our web site for updates.

Legislative committee takes strong positions

Budget proposals altered

by Ted Koch

In the previous issue of the *Bulletin* (Spring, 1999), we reported on land information items included in the Governor's 1999-2000 proposed budget, and opposition to these items that was being expressed at public hearings across the state. At this writing, the state budget is stalled in the Legislature, with predictions that it may be early fall before both houses craft a compromise document to send on to the Governor.

In spite of the delay in final budget passage, we can report that the Legislature has made changes to the Governor's land information proposals. As we reported, the two items drawing the most attention in April and May were the proposed reallocation of Wisconsin Land Information Board (WLIB) funds to support soil mapping and soil surveys, and the diversion of WLIB funds toward the development and implementation of a "computer-based land information system."

Joint Finance makes clear statements

On June 1, the Legislature's Joint Comm. on Finance took a number of land information-related actions. Regarding soil mapping, the committee voted 16-0 to spread state contributions to the project (a total of \$4.2 million) over six years rather than four years as was proposed in the budget. This change to a six-year plan is consistent with actions the WLIB took in January committing \$415,000 of its funds annually to the soil mapping and soil survey initiatives.

Also, Joint Finance voted 16-0 to make the WLIB responsible for the soil mapping and survey project, rather than the WI Department of Administration (DOA) as was proposed in the budget. Further, the committee unanimously voted to extend the WLIB sunset date to September 1, 2005 from the current September 1, 2003 and to continue to direct, through that extended period, \$2 of each real estate transaction recordation fee that is collected at all County Register of Deeds offices and forwarded to the WLIB.

Regarding the computer-based land information proposal, the Finance Committee voted 16-0 to maintain current law. In effect this action removes from the budget the proposal to redirect \$612,000 over two years from the WLIB.

Continuing saga

Since early June, the positions taken by Joint Finance on land information language have not been modified by either the Assembly's or Senate's Budget Caucus committees, or the Legislature's Conference Committee. The Conference Committee is currently working on the budget bill in an attempt to resolve other differences generated by both of the Caucus committees. Since Wisconsin's Governor has line-item veto, the ultimate fate of land information initiatives in the budget will not be completely known until the budget is signed.

Clearinghouse Connection



Temporary funds help rev up the pace

Clearinghouse work accelerates

by AJ Wortley

The Wisconsin Land Information Clearinghouse is expanding its operations. Since its inception in 1994, WISCLINC has steadily, albeit slowly, progressed on the trail of NSDI Clearinghouses from birth to maturity. But its contents have stayed modest and the Clearinghouse has lacked both the funding and momentum to grow into a populated database of geospatial metadata and data where its benefits may be truly realized.

Two new sources of funding for WISCLINC have removed the funding barrier in the short term, and promise opportunities to create the momentum necessary to remove remaining barriers en route to clearinghouse growth.

Eighteen-month contract

In May, the WISCLINC Expansion Contract between the State Cartographer's Office and the Wis. Department of Administration went into effect. The funds come from the Wisconsin Land Information Board. This contract will run 18 months and is projected to enhance and expand WISCLINC as a state-of-the-art statewide geospatial information clearinghouse.

The primary enhancement focus is to continue to build the clearinghouse foundation through collection of geospatial metadata for Wisconsin Land Information Program data at all levels. A solid foundation of geospatial metadata from across the state will allow us to expand the services of WISCLINC that allow you to accurately search for and discover access routes to Wisconsin geospatial data relevant to your needs.

"Don't Duck Metadata" Grant

The second new source of support is a shared grant from the Federal Geographic Data Committee's "Don't Duck Metadata," program. Wisconsin's Office of Land Information Services submitted a consolidated proposal with 21 governmental agencies from the state to local levels as cooperators.

The grant period of one year will begin this September. Goals for this work include conducting metadata training workshops, documenting framework geospatial data sets, posting metadata documentation on WISCLINC, maintaining a "help-desk" for metadata creators and users, and providing continuing coordination statewide for metadata and clearinghouse activities.

Wisconsin's FGDC grant activities will closely correlate with and help to accelerate the beginning phases of the WISCLINC Expansion Contract, which will focus on collection of geospatial metadata for WLIP data at all levels of government. This process will be aided by the presentation of metadata training workshops throughout the state. These workshops will provide "hands-on" familiarity and tools to

understand the FGDC metadata standard, metadata creation, and posting geospatial metadata on the Clearinghouse.

Putting it all together

Additional forthcoming enhancements to the WISCLINC Clearinghouse aim at complementing this new influx of metadata activity. Through existing evaluations, and eventual feedback from the metadata training workshops, we will reach a consensus on which ranking metadata tools are used most in Wisconsin. Relevant information for these tools including usage notes, place of download, updates, etc. will be added to the WISCLINC website. Plans to make these software and additional information available to anyone without an Internet connection are also in the works.

In addition to software-specific information, other helpful information will be added to the resources on WISCLINC. This would include "frequently asked questions", metadata caveats, metadata production, clearinghouse success stories and the like.

Graphics and custom searches

To complement the metadata approach to geospatial data discovery, additional graphical representation of themes like statewide data availability will be added to WISCLINC as this information becomes available. Another improvement will be a customized search interface (parallel to the federal NSDI search) for searching for geospatial data specific to Wisconsin. All of these enhancements are aimed at aiding the geospatial data producers of Wisconsin.

Supporting data producers

It is our goal to accelerate the rate at which WISCLINC and the clearinghouse concept become a useful tool for the geospatial data producers in Wisconsin. These producers can realize the entry-level benefits of a clearinghouse: publicity of produced data through on-line data cataloging; discovery of data for use or to prevent duplicate production of data; and ultimately, "insurance" on data quality and fitness for use through complete on-line metadata documentation.

Get involved; your opinion counts

Users feedback will be an essential component in tailoring the future of WISCLINC to its audience. The kinds of services and enhancements just around the corner will then allow us to expand the audience of WISCLINC to anyone seeking land information for Wisconsin.

So speak out, and also ask us about getting involved with contributing metadata to the clearinghouse...we'll be glad you did.

Getting over the hump—creatively

Metadata challenges inspire innovation

by AJ Wortley

In the business of metadata creation and collection, one must be prepared for an uphill struggle; some call it a mountain, others call it a learning curve. This is because when it comes to documenting geospatial data, it's a relatively new thing. However, we can learn from each other, and this article tells about some new directions from around the country.

In the beginning, there was geospatial metadata, then the NSDI Clearinghouse network, followed by a federal metadata standard (CSDGM). From those roots has been born a movement to document geospatial information and index it according to, among other things, its appropriate place on the surface of the Earth.

Mandates, but no clear direction

Since the advent of the federal metadata standard, governments have encouraged the use of this standard for documenting data sets. Federal agencies were mandated to use the standard to document their holdings.

While some have and do refer to this affectionately as yet another unfunded mandate, others remain undaunted by the prospect of more work to do with few additional resources. This may be related to the fact that while there was a mandate to *do* something, there was little direction as to *how* to produce the end product: metadata compliant with the federal standard.

Creative solutions popping up

The question of "how" to accomplish the goal of integrating metadata creation into data production leaves room for the creative side to come out in any individual or organization. That means getting innovative in the *process* of creating metadata.

Those first creative individuals took on the tasks of assessing what kind of software tools would be useful in metadata creation. What has followed in the last five years has been a small, steady stream of metadata entry tools. Various tools have, by now, implemented innovations like mounting the tool to a database for re-use of commonly occurring elements and a variety of import, storage, and export functions.

Other problem solvers during this period took to working on the infrastructure through which the power of metadata could be utilized. There have been several strong advancements recently that integrate the power of new technology into spatial information database architecture.

So, the software tools are coming along, the infrastructure is being built, and all that's left is...the metadata, itself.

Fresh approaches smooth the path

While the complexity of metadata collection may be eased somewhat with the use of software and on-line resources, the task itself remains. It simply takes time and resources. Here



arises an opportunity for more creativity in striving to further minimize the load of geospatial metadata collection. Recently, there have been several reports of various organizations from the state to local levels trying out institutional innovations for documenting their data.

And, standards can be contagious: the federal government sets a standard and states examine it for its relevancy and adaptability to the state level. All the same, even standards are one path of innovation. Minnesota and Kentucky are two states that have used standards and standard practices to encourage and facilitate metadata collection. While Minnesota's standards activities occurred somewhat before Kentucky's, both took a similar path.

Like many states have now done, both states first decided to adopt a metadata standard. Their metadata standards are similar to the federal standard with a few modifications to tailor it to the states' needs. (Other states have adopted the standard 'as-is'.) The end result in either case is to bring the federal standard, in some form, to the state level and draw attention to its importance. Both states furthered their efforts through negotiating a statewide license with particular software vendors to provide a fully-supported and standard-compliant metadata software tool.

Other states such as Florida have allocated staff at the state level specifically for metadata collection and addition to the Florida Data Directory. Of course, few organizations have extra staff waiting for assignment, so one might do like the Wisconsin Geological and Natural History Survey and have an in-house metadata workshop to familiarize the staff as a group with the concept of metadata to speed its integration into the routine workflow.

But hold on, its not just federal and state folks who get to be creative and get paid for it. Whether through standards or other methods, many states have begun to renew outreach and support to the local level for metadata creation as it is realized that this is where much crucial geospatial data development takes place. Here in Wisconsin, several counties have diversified their approach to getting their data documented.

Wisconsin counties get into the act

In **Clark County**, a direct approach was adapted as they began documenting data in their second year of land records modernization. The main innovation here is getting started early and integrating the task of documenting with data production. In addition, well-documented data is a solid foundation on which

continued on next page...

Metadata, continued from page 5

to leverage your resources like Clark County did in acquiring a Wisconsin Advanced Telecommunications Foundation grant.

Another creative way to leverage resources is through contractual data development. Some have concluded that metadata is best built by those who produce the data. **Waukesha and Kewaunee Counties** are both using this philosophy through the integration of metadata production into contracts with the private sector.

Winnebago County even found a way to leverage change in their organization. They recently acquired a private sector grant to ease their transition to a new GIS software platform. In addition, they acquired some metadata management software which will ease the burden of updating all their metadata simultaneously...and all this is just the beginning.

Metadata is happening!

Whether it's spending a little capital to invest in the future, creatively accumulating financing, or doing it without the money through free technology, motivated employee talents, and yet unsung innovations, there is action all around us.

What future innovations will be in process a year from now? Whatever they are, wherever they are, individuals and organizations will be using their creativity to shape the future of GIS based on a solid, well-documented foundation.



Working wonders on the Web

SCO adds resources to web site

by Anna Weitzel

In the spirit of the age, the SCO wants to make all mapping information available at the click of a mouse. Our web team has added some new, user-friendly features to our site.

Coordinate Systems Handbook on-line

Wisconsin Coordinate Systems, our 1995 handbook now can be found in the Products and Publications section of our web site. Users of Wisconsin's local coordinate systems can download, in PDF format, the defining parameters for each county's coordinate system. The handbook briefly introduces some mapping concepts such as projections, coordinate systems, and transformation methods. Hard copies are available from the SCO for \$10 and can be ordered by printing out our order form from the web site.

Interactive HARN map available

Accessing information on HARN control stations is now easier. Go to the Geodetic Control & GPS section of our web site to find the new interactive HARN map. Clicking on a region of the state and a specific location will bring up text information about that control point, including information about its azimuth marker.

Approaching 25 years of operation

SCO set for a major anniversary

by Bob Gurda

On August 19th of 1974, Art Ziegler arrived in Madison to open the Wis. State Cartographer's Office for its first day of business. So, later this summer we will be passing the quarter-century milestone for the SCO.



Art, who passed away almost 18 months ago, liked to tell about opening the doors to the three rooms allocated to the SCO that first day, and seeing nothing but some aging office furniture and a telephone. He faced the daunting task of assembling information on maps, aerial photography, geodetic control, the business sector, and government activities, all the while figuring out how the university's budget and personnel system worked. Initially he had no staff.

Over time, Art got additional resources including professional support and student staff. Since that time the work of the office has evolved to keep up with changes in technology, fiscal realities, and institutional structures.

We don't have a big celebration planned, but would like to hear from people who have been part of the staff or who have used our services over the years.



Activity level increases further

Projects bring new staff to SCO

by Bob Gurda

New and expanded initiatives at the SCO requires more staff to carry out the work. Recently we have welcomed two new employees and increased another to full-time status.

AJ Wortley started with us as a half-time Outreach Specialist in April of last year. This spring we officially received the funding for an 18-month contract project based on resources provided by the Wis. Land Information Board, and at that time AJ began working full time. His efforts will greatly accelerate the development of WISCLINC.

Joining the SCO in June were Doug Kolom and Anna Weitzel, both graduate students. Doug finished his M.S. in Geography in May and is continuing in school with the goal of a second M.S. in Information Management. He is working with AJ on WISCLINC.

After graduating in May with his M.S. in Environmental Monitoring, Brian Van Pay left the SCO; he has lined up a position with NIMA (the National Imagery and Mapping Agency) which provides services to the military and intelligence communities. While at the SCO, Brian worked on our web site, and also contributed articles to the *Bulletin*.

Upon Brian's departure we hired Anna Weitzel. She is beginning work on an M.S. in Environmental Monitoring.

Niemann reflects on evolution of LICGF

For this issue we met with Professor Bernard (Ben) J. Niemann, Jr., who stepped down as Director of the University of Wisconsin-Madison's Land Information and Computer Graphics Facility (LICGF) effective June 30. He plans to continue teaching and research for about another year before moving on.

Many people in Wisconsin and beyond have become familiar with LICGF in the last ten years or so, as the Wisconsin Land Information Program has developed. But don't the facility's roots actually extend back several decades?

That's right. It's been quite an evolution. In my graduate work at Harvard I was exposed to methods of landscape planning and analysis which, after coming to Madison, we applied to a study of the potential impacts of a proposed freeway between Milwaukee and Green Bay. It was to replace state highway 57, and cut through the northern part of the Kettle Moraine. Our analysis helped result in a decision to abandon that route due to its affect on scenic, agricultural, and other natural resource qualities like trout streams.

This speaks to the importance of stable institutions and administrators who are willing to take risks.

As a result of that work the College of Agricultural and Life Sciences (CALs) agreed to create a new faculty position focused on computerized landscape planning and analysis. We started up a new course to teach these methods, and the Graduate School helped us buy the necessary computer equipment which was housed in the basement of the Animal Science Building. Those were the humble beginnings, but it seemed just as exciting then as all the high-tech things we're doing today!

Who held that initial faculty position?

It was Bill Gates! Of course, I don't mean the head of Microsoft, who none of us had heard of back then. Later, Nick Chrisman held that position in the mid-1980's, and he brought the ODYSSEY vector-GIS program with him

from Harvard. After Nick left for Seattle, Steve Ventura took over that role.

LICGF has received research funding from a variety of off-campus sources over the years. How important, then, has been the support you received from inside the campus?

It's been absolutely critical. Without space, without some modest amount of staff, and without long-term support of graduate student work, we would have lurched from one project to another. CALs has provided support all along, and their linkage with Extension and the U.S. Dept. of Agriculture (USDA) led to a variety of important work here.

The 1984 seminar attracted people from off-campus who later formed the WLIA.

This speaks to the importance of stable institutions and administrators who are willing to take risks (sometimes when you're not completely aware of how much risk they are taking to support you). We have tried hard to publicize our work and give credit to people who have supported us. That's all part of the story.

Specifically, how has the USDA connection benefitted LICGF?

This has been a long-term relationship. When Nick arrived, the SCS (now NRCS) national office was interested in testing vector-based GIS as a tool to model soil erosion on a field-by-field basis; up to that time, cell-based GIS had been the only feasible approach and it had serious limitations. With the help of DATCP's Jim Arts we linked that work with new state soil erosion mitigation rules (Ag 160) which resulted in Kevin Connors at the Dane County Land Conservation Department getting involved. From the Dane County Land Records Project, then to CONSOIL, on to the DOQQ prototype, and now to the Dane County community-based land use decision-making project, USDA funds have turned the crank. And, directly through CALs, we were able to compete for USDA Hatch Grant funds to help support grad student research.

Who else on the Madison campus has been particularly instrumental?

Even though our facility is part of CALs, most of us are also individually affiliated with the Institute for Environmental Studies (IES) which has helped out at critical junctures. As far as an impact on the state as a whole, a major event funded by IES was the 1984 Seminar on a Multipurpose Cadastre. We brought cutting-edge experts in weekly, from all over the country and world. We promoted these events widely, and some people attended from off-campus. That core group ultimately came together to convince state government to form the Wis. Land Records Committee, and then went on to found the Wis. Land Information Association.

How much affect has the explosion of computer technology had on the evolution of LICGF?

Of course, we didn't begin with the goal of building hardware or software to help reach our goals. But we have taken advantage of many innovations, and have been working on the "bleeding edge" time and again. What's been exciting in recent years is that the commercial technology has let us focus much more on the policy side of the questions we address. As a planner and landscape architect, it is the policy issues that provide fundamental motivation.

Commercial technology has let us focus much more on the policy side.

Along the way, it has also been very helpful that spatial information technological innovation has yielded productivity improvements in routine government office work. That has helped to sell the approach and make it easier to address some of the tough policy issues.

The most enduring linkage we have been able to bring to the fore over the years is that things people do on the land affect both the natural resource base as well as the mechanisms of land tenure. That's where the rubber meets the road in the arena of land use planning. GIS has let us analyze the impacts and then display them graphically so they are better understood to a wide range of people.

It's been a fun ride!!

National meeting focuses on GIS and communities

GeoData Forum Report

by Ted Koch

(Editors Note: The vast majority of Mapping Bulletin readers are not able to attend national GIS conferences. In this issue we are devoting several pages, plus a special color insert, to report on the National GeoData Forum held recently in Washington, D.C.)

“It is far too late and times are too bad for pessimism!”, such was the tone of many of the messages delivered to the approximately 450 attendees at the three-day National GeoData Forum held in Washington D.C. from June 7-9. With many of the headline speakers from outside the traditional geospatial disciplines, messages challenging listeners to think about analyzing and approaching problems from new and different directions were a frequent and persistent theme of the Forum.

This year’s Forum, the third in a series following forums in 1993 and 1995, was sponsored by the Federal Geographic Data Committee in collaboration with a variety of other academic, and public and private sector organizations.

Theme: “Making livable Communities a Reality”

The theme of the meeting was focused on “Making Livable Communities a Reality” This theme was based on the premise that geospatial data and geoprocessing technologies help governments and businesses analyze trends, make better decisions and communicate to constituencies, and the success with which this happens is based on the access to the right kinds of geographic information. The degree to which the meeting successfully delivered, through its presentations and special sessions, messages and ideas supporting the theme and its premise is open to question.

The **center color insert** in this issue presents a graphic summary of the significant ideas presented at the Forum. The graphic was produced by professional technical artists who specialize in drawing “real-time” summaries of meeting presentations and discussions. On the insert, conclusions or reflections from the first day are connected to the second day’s breakout sessions or “threads”. From this, Forum organizers attempted to develop the meeting’s “Big Ideas” which lead to identifying the bold steps needed to achieve the Forum’s theme of Livable Communities. This color graphic and others which were produced during each speaker’s presentation are viewable on FGDC’s web site at: www.fgdc.gov/99/Forum/.

Notable speakers

The Forum’s first-day lead-off speaker was Bruce Babbitt, Secretary of the Interior, and chair of the Federal Geographic Data Committee. Babbitt’s message touched on the need to

create bold visions and big plans. While he believes that geospatial data is of the essence for government decisions, the competition and conflict between so many multiple jurisdictions across the country blocks progress toward the vision.

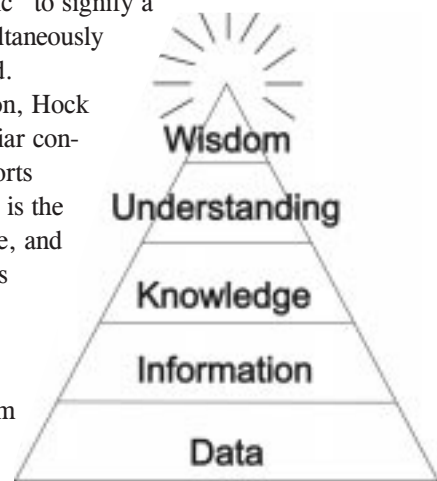
Babbitt was followed by Congressman Paul Kanjorski (PA) who stated that GIS provides unprecedented opportunity, and that it is an essential tool for information in public policy because we have more factual data than ever before.

Perhaps the Forum’s most provocative speaker was Dee Hock, founder and CEO-emeritus of Visa, the credit card company. Hock founded Visa in the late 1960s on the notion that new organizations to be successful had to be structured differently than the traditional “topdown” style used for past decades. In Visa, which became the model for the credit card industry, the organization was highly decentralized and highly collaborative. Authority, initiative, decision making and wealth were pushed to the edges of the organization—the members. In the Visa structure, member financial institutions are fierce competitors in issuing cards. On the other hand, members have to cooperate with each other to make the system work and get paid, which means that all members have to abide by certain rules and standards.

“Chaordic” organizations

From his experience at Visa, which he left in 1984, Hock turned his attention to working with various organizations, guided by his experience and belief that healthy, adaptive systems always seem to exhibit a kind of dynamic tension between chaos and order. This was based on the Visa model of encouraging as much competition and initiative as possible throughout the organization—“chaos”—while building in room for cooperation—“order”. From this Hock coined a new word “chaordic” to signify a system that is simultaneously chaotic and ordered.

In his presentation, Hock discussed the familiar concept that data supports information, which is the basis for knowledge, and knowledge provides understanding that ultimately leads to wisdom. Hock believes the problem we are encountering today, in our rapidly changing technologically based society, is that the explosion of data and information is leading to less wisdom because the ratio between these has changed.



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The challenges of the NSDI and WLIS?

In Hock's view, we need a big dose of wisdom to develop the organizational models and trusting cooperative relationships necessary to accomplish the challenges of building large and complex information systems. Not surprisingly, the concept

“An organization's success has enormously more to do with clarity of a shared purpose, common principles and strength of belief in them than the assets, expertise, operating ability, or management competence, important as that may be.”

of a National Spatial Data Infrastructure (NSDI), which is based on the ideas of using and maintaining geospatial data at all levels of government and private organizations is a prime example of a very large and extremely complex information system.

Likewise, the proposed Wisconsin Land Information System (WLIS) falls into the same category. WLIS, as envisioned in a report produced by the Land Council's Technical Working Group (see WLIS story on page 1), will be a distributed system that accesses data and information from various sources based on a common set of standards. If it is to be successful, creation of WLIS will likely be based on chaotic principles, that is, with some degree of chaos balanced by a measure of order, where there are many avenues accessible for contributions and decision making. As Dee Hock was quoted as saying, “All organizations are merely conceptual embodiments of a very old, very basic idea—the idea of community. An organization's success has enormously more to do with clarity of a shared purpose, common principles and strength of belief in them than the assets, expertise, operating ability, or management competence, important as that may be.”

Leaders roundtable offers summary

The Forum's second day was devoted to seven breakout sessions to discuss how the principles of the NSDI could lead to an information infrastructure to support the “livable communities” conference theme. One of these sessions focused on educational issues and included professors Ben Niemann and Steve Ventura of UW-Madison.

The results of the break-out session discussions were woven into a summary report on the third and final half-day. As noted previously, the color insert in this issue presents, in graphic form, a summary of the ideas presented at the Forum.

The Forum ended with a policy roundtable discussion chaired by Congressman Kanjorski and fifteen other highly

qualified speakers representing government, industry, tribal and academic areas. To me, this is where the Forum failed to live up to its billing. I came away feeling that the summary discussion was mostly a series of individual statements, that although very articulate and thought-provoking, generally failed in any substantial way to demonstrate that the use of high quality, easily accessed geographic information will ultimately lead to better communities.

Forum ends with Congressional testimony

Several other events held in conjunction with the Forum and related to geographic information were held in the Washington D.C. area. Perhaps the most notable was a hearing June 9 (the last day of the Forum) on “Geographic Information Systems Policies and Programs”, before the House Subcommittee on Government Management, Information, and Technology.

The purpose of the hearing was to review the federal government's efforts toward standardizing and sharing geographic information with other governmental organizations and with the private sector. Three panels of witnesses, representing the federal government, state and local governments, and the private sector, came before the committee. In addition to Secretary Babbitt, Jack Dangermond, Larry Ayers, et.al., one of the most notable witnesses at the hearing was Jim Geringer, Governor of Wyoming. Geringer is a regular user of GIS software from the desk in his governor's office.

To the committee, Geringer suggested that, to develop effective public and private partnerships, a set of principles developed by the Western Governor's Association serve as a basis for legislative and appropriations decisions. The eight principles are:

- develop national standards with neighborhood solutions
- work for collaboration, not polarization
- reward results, not processes
- credible science for proper priorities
- markets before mandates
- change a heart, change a nation
- measure marginal benefits and overall costs
- solutions transcend political boundaries.

Geringer elaborated briefly on each of these, then offered his views on roles of governments, changing technology and data collection, and finished with a summary of public sector uses of GIS.

The text of Geringer's testimony before the committee, the testimony of others, and additional information presented and discussed at the Forum can be found at the FGDC Website: <http://www.fgdc.gov/99Forum/> (or link to it through the SCO web site's New/Bulletin section).

Q: *I've been trying to follow the various developments around the state as local governments proceed to modernize their land information. Where can I find brief written descriptions or statistics so that I'm better prepared with the right questions when I contact a local land information office?*

A: There are several ways you can get at pieces of this information. Some is available over the Internet, and some only in print form.

An excellent source of general background material are a series of county profiles that have been appearing in issues of *Land Records Quarterly*, the newsletter of the Wisconsin Land Information Association. Typically, several counties are covered in each issue, and the articles are written by the people in the counties (or other types of offices) themselves. Recent issues of the newsletter are viewable at the WLIA web site (find a link in the SCO web site's Address Book in the Reference section). Older issues are only in printed format.

A more formalized version of the county reports are plans submitted to the Wisconsin Land Information Board. Many are available in PDF format through the web site of the Wis. Dept. of Administration's Office of Land Information Services (OLIS). See SCO's on-line Address Book for a link.

Another source is a survey completed last year of GIS activities across the entire country. Over 100 organizations in Wisconsin responded (all but one of our 72 counties). That data is available for study as either database tables or "shapefiles" that can be mapped using Arc View software. Find this information via a link to the FGDC web site in the SCO's on-line Address Book.

Beyond counties, some cities participated in the national survey, but otherwise there isn't as much organized information on their modernization activities.

Q: *I'm planning to do some hunting this fall, and want to consider some new areas. What maps would help me determine which lands might be good for hunting and which are open to hunting?*

A: You can choose from a variety of resources, but you won't find all of your answers in one place. In fact, some of what you need may not be available in map form, or, if it is, it may be somewhat dated.

A topographic map makes a good base map for a variety of outdoor uses. The ones most commonly available are produced by the U.S. Geological Survey. Paper copies are available from local map dealers, and now, these are also viewable and/or downloadable over the Internet.

Aerial photographs are also very handy. They come in a variety of forms, and most are acquired in "stereo" mode where adjacent frames partially overlap each other. This allows you to view the ground in 3-D.

Aerial photographs can be enlarged, but are more expensive that way and become difficult to carry in the field. Some have been scanned into computer format as a step in the process of producing digital orthophotos. Once you acquire these large files you can print them out, but if the orthophoto correction has been done, then you will no longer be able to do 3-D viewing.

Our web site has an extensive catalog of aerial photography projects, and if you need further guidance please give us a call. You won't necessarily find the same aerial photography choices in one area as compared to another.

Probably the most difficult part of your question relates to land ownership and public access. Most, but not all, public property is open to hunting. Rural private land in the state's Forest Crop Lands Program is required to be open to hunting as a condition of property-tax reduction. Some, but not all of the critical detail relating to publicly-accessible lands appears on maps, particularly plat books.

While not intending to offer an endorsement, recently we have become aware of a series of 10 atlases called the *Hunter's Guide to Forest Crop Lands, Public Hunting Grounds and County and Federal Lands*. Each atlases covers a grouping of five to eleven counties, with single-color base maps showing various open-to-hunting land categories. Generally, each page in an atlas shows one township. Also, the guides include a listing of Forest Crop Lands, giving the owner's name, town name, township, range and section designation, very brief description and acreage. Hunter's Guides are available for \$29.95 each from Hunter's Guide, Inc., 900 South County Hwy. G, Boyd, WI 54726, phone: 715/286-5519.



Editor's Note: If you have a question, or had a question for which you found an answer that might be of interest to others, please let us know.

Northwoods community loses a GIS leader

Miller leaves for North Carolina

by Bob Gurda

From the shores of Lake Superior to North Carolina—a long trek. That’s the path taken recently by Mark Miller, a GIS practitioner over the last several years in far northern Wisconsin.



Mark, who operates his own GIS business, worked with several local governments and tribes, helped develop GIS capabilities as well as useful data sets, and conducted training through Northland College in Ashland. While he plans to continue working with some of his Wisconsin clients via remote connection, his presence will be missed in the northwoods.

He had become an active member of the Northwoods GIS User Group that meets several times each year, usually in Ashland.

To leave DOA & chair of Land Council

Bugher tabbed to manage UW Research Park

by Bob Gurda

Mark Bugher, Secretary of the Wisconsin Department of Administration (DOA), will be taking on a new challenge as Director of the University of Wisconsin Madison’s Research Park. He will assume his new duties on October 1.



A 12-year veteran of the Thompson Administration, Bugher served at the Department of Revenue through 1996. At DOA, he has been involved in mapping and land information issues in several ways. The newly created Office of Land Information Services reports directly to him, and he also chairs the Wisconsin Land Council.

There have been no announcements about replacements for the department secretary or council chair positions.



Niemann passes the torch at UW-Madison GIS lab

Ventura takes the reins at LICGF

by Bob Gurda

Associate Professor Stephen J. Ventura has been named the new director of the UW-Madison’s Land Information and Computer Graphics Facility (LICGF). Steve has a long association with LICGF beginning with his days as a graduate student.

Stepping down in advance of his projected retirement is Professor Bernard J. Niemann, Jr. See our interview with Ben on page 7.

Ventura is associated with the Soil Science department as well as the Institute for Environmental Studies. He also serves as chair of the campus-wide Spatial Information and Analysis Consortium, and is President-Elect of the Wisconsin Land Information Association.

LICGF is a unit of the the School of Natural Resources in the College of Agricultural and Life Sciences, and has been engaged in research and outreach since 1982.

(source: UW-Madison College of Agricultural & Life Sciences)

Available from the USGS

Video explains link between GPS & maps

The U.S. Geological Survey has announced a 30-minute instructional video entitled “Using GPS with Maps.” This video is a learning tool for using the Global Positioning System (GPS) and the Universal Transverse



Mercator (UTM) coordinate system with topographic maps. It covers the basics of topographic maps, latitude/longitude, and the UTM coordinate systems; how to use topo maps with any brand or model of GPS; how to find specific positions, mark way points and navigate unfamiliar land; and how to select and purchase USGS maps. Included with the video is a coordinate ruler for 1:24,000-scale maps and a practice map.

To get your copy, contact USGS-Information Services, Box 25286, Denver CO 80225 (or via fax at 303/202-4693. Visa/Mastercard orders are accepted. Order File Number VHS-GPS. The cost is \$19.95 plus \$3.50 shipping per order.

(source: USGS)

2000 should be more eventful

Aerial photography cruises through 1999

by Bob Gurda

This spring was a relatively light season for aerial photography. By contrast, the year 2000 is shaping up to have more projects than an average year. We regularly post details on recent and forthcoming projects to our Aerial Photography Catalog on the SCO web site.

On the statewide level, the federal NAPP photography was completed this last spring. This involved flights over areas that hadn't been photographed in 1998 — about 40% of the state, mostly in southern areas. After the end of summer we expect to hear the results of quality inspection. NAPP photographs will be the source material for orthophoto production for a number of counties in the next two years.

New aerial photography was acquired this spring over several entire counties (Marquette, Green Lake, Columbia, and Juneau, the last of which will be used to make orthophotos).

In addition, low-altitude images were acquired over municipalities in several counties. Some of these are intended for high-resolution orthophoto production and detailed digital elevation creation. Others will be used for more traditional base map compilation.

Anticipated projects, 1999-2000

This summer, the north-western quadrant of the state is slated for repeat coverage through the Wis. Dept. of Natural Resources' Forestry Photography Program. This program covers the state through "leaf-on" photographs, on an eight-year cycle.

Next spring there will be some major projects, especially in the eastern part of the state. It is traditional in many places to arrange aerial photography projects to coincide with the Census. Two regional planning commissions are coordinating projects: South East and East Central. Each will be used to produce orthophotos of higher resolution than currently available although the East Central orthophotos will be done only where funds become available from local sources. By contrast, the entire 7-county South East area is sure to receive new orthophotos through funding coordinated by the planning commission.

The Madison area —both city and county— are planning work next spring, too. Again, these involve updated and higher-resolution orthophotos.



Spring 1999 aerial photography over local areas.

If you know of planned or potential aerial photograph projects, please let us know so that we can incorporate the key information into our catalog.

Sharing the wealth

GIS Data Depot offers free data

by Anna Weitzel

The GIS Data Depot is a commercial on-line catalog offering various GIS data sets, including digital raster graphics (DRGs) for all Wisconsin counties. The data can be downloaded for free, or the user can pick and choose data sets to be made into a custom CD-ROM at minimal cost.

The Depot also attaches any available metadata to the files but recognizes that some of it may be lacking. Furthermore, they are always looking for more data and metadata "donations." The DRGs available there are the original version (in the UTM coordinate system) as distributed by the USGS.

Look for the link to GIS Data Depot on the SCO web site— either in "New" (under Mapping Bulletin) or in the DRG section.

Recent HARN observations to be integrated

Coming Soon: GEOID99

by Brenda Hemstead

The National Geodetic Survey (NGS) has committed itself to producing a new high-resolution geoid model to replace the existing GEOID96 model. This new model, GEOID99, is currently in the research phase and is scheduled to enter production late summer 1999. A release date for the model in the NGS web site is tentatively set for September 30, 1999. In a manner similar to GEOID96, there will be a companion model to GEOID99 called G99SSS, which will be a purely gravimetric, geocentric geoid model.

Why a new model?

Recently, NGS completed the HARN observations for the conterminous United States. This has increased the number of GPS-Benchmarks from 2951 (for GEOID96) to 5187 (for the forthcoming GEOID99). This is reason enough to update the NGS geoid model. However, a new high resolution (Horizontal Resolution 30m x 30m) Digital Elevation Model (DEM) for the United States has recently neared completion from the United State Geological Survey. This data set will allow an improvement to the gravimetric geoid model, while the new GPS-Benchmarks will further improve the final geoid model.

Visit the geodetic section on the SCO web site for links to the NGS.

(source: National Geodetic Survey web site)

Come packaged by county, with index

BCPL offers original plat maps on CD

by Travis Olson, BCPL staff

Color plat maps produced from the original government survey of Wisconsin will be available on CD-ROM soon. The plat map CDs are part of a comprehensive effort by the state's Board of Commissioners of Public Lands (BCPL) to complete the electronic imaging of historic land records, including the original field notebooks of the surveyors and 345,530 land patents.

The images, one county per CD, are recorded in TIFF CCITT Group 4 ("TIFF-4") file format and are supported by a viewer program that indexes the images by township and range. Each CD contains the software to view and print the images but requires Windows 95/98 or Windows NT 4.0 and a CD-ROM drive to run. A Pentium/Pentium II or equivalent CPU, 32 Mb of RAM, and at least 6x-speed CD-ROM speed are strongly recommended.

Images have a wealth of historical detail

The original plat maps are a valuable resource for surveyors, people interested in natural history, those involved in genealogical research and others interested in reproducing the original survey boundaries. In addition to showing the measurements of township and section boundaries, and the meanders of rivers and lakes, the maps also illustrate contemporary settlements, trails, Native American villages, extensive windfalls in forests, and other natural features. The maps were drawn from records kept by field surveyors as they laid out the Public Land Survey System (PLSS), beginning in the southern part of Wisconsin in the 1830's and progressing to the north by the 1860's.

The plat map CDs will be available August 1 for \$50 per county from the Board of Commissioners of Public Lands, P.O. Box 8943, Madison, WI 53708-8943. To order, please contact Travis Olson at 608-266-1370, or travis.olson@bcpl.state.wi.us.



A portion of an original Vilas County plat map



Spatial information resources of the future...

Geolibraries report released

by AJ Wortley

A new report entitled *Distributed Geolibraries: Spatial Information Resources* was released recently. The report was authored by a panel of the Mapping Science Committee of the National Research Council, the same group that produced a report in 1993 first advancing the concept of the National Spatial Data Infrastructure (NSDI). Their newest report could be seen as an updating of the concept of the NSDI in the era of the World Wide Web.

Distributed geolibraries are discussed as a futuristic vision of libraries filled with geoinformation, or information associated with a particular region or 'footprint' on the ground. The "libraries" would operate on a traditional library service model updated to a digitally-networked environment and organized around the central theme of place. In other words, in an ideal world one would be able to search for any type of available information about a place relevant to a particular need. This concept goes beyond information that traditionally appears on maps or digital versions of maps (e.g., GIS).

Derived from a workshop

Distributed Geolibraries: Spatial Information Resources is actually a summary of a workshop of the same name put on by the Mapping Science Committee. Accordingly, while the report gives hypothetical examples and in the appendix points to prototype spatial information repositories with select aspects of a geolibrary, it is still a conceptual report on an, as of yet, non-existent entity. At 120 pages in length with virtually no illustrations, *Distributed Geolibraries* gives a succinct yet thorough impression of current trends and what the future may hold for public spatial information repositories.

The report is available online (see *Bulletin* links under "New" on the SCO web site). Or it may be ordered from the National Academy Press, 2101 Constitution Ave., NW, Lockbox 285, Washington, D.C., 20055; phone: 888-624-8373; web: books.nap.edu/catalog/9460.html

(source: National Research Council)

The Ice Age meets the Information Age

Self-serve trail maps on-line

by Anna Weitzel

Hungry for an outdoor adventure? Before you go, get your fill at the DNR's Ice Age Trail Map Buffet. Take a look at this web page featuring an interactive map of the entire trail.

Similar to many GIS programs, this site allows users to choose from a smorgasbord of features to be displayed on the



One option is to view a topographic map of part of the Ice Age Trail.

map. You can zoom in on any section of the trail and view the locations of campgrounds, parking areas, toilets, telephones, and other amenities. You can also view topographic maps of any area and see other trails that connect to the Ice Age Trail.

For a link to The Ice Age Trail Map Buffet, visit the "New" section of the SCO web site. Happy trails!



You can simplify a map to show, for instance, only the trails and facilities (parking, drinking water, showers, camping, telephone).

On the road to better addresses

WLIA heads up to Siren

by Brenda Hemstead

The fall meeting of the Wisconsin Land Information Association will be held at the Best Western Northwoods Lodge in Siren on Thursday and Friday, Sept. 9-10, 1999.



Thursday: Workshop & free seminar

On September 9, plans include a workshop from 1:00pm to 4:00pm on "**Comprehensive Planning and Lake Classification**". This workshop will describe the current status of land use planning and lake classification activities in northern Wisconsin. Topics include: an overview of comprehensive planning in the state, historical perspective, current picture, and future prospects; Northwest Wisconsin comprehensive planning trends and activities; review of a county comprehensive planning process; and lake classifications—a tool of comprehensive planning. *Registration fee is \$25 member and \$35 non-member.*

Scheduled for 7:00pm Thursday evening is a **free seminar** for people who use and access land information as well as land information producers who need a general understanding of address standards, address automation, and address applications. This seminar is open to the public.

Friday: Addressing and Geocoding

The next morning's program begins at 8:30 a.m. (\$20 registration includes lunch) with **program updates** on the Wisconsin Land Information Program.

The balance of the morning will involve two sessions. The first will be an overview and case study presentations on **Addresses and how they relate to E911 and GIS**. Speakers from both a rural and urban county will describe addressing from scratch, and migrating from one address system to another.

The second session will focus on **geocoding and other applications based on addressing**. Topics include: Burnett County's efforts to GPS driveways and buildings; a preliminary report on building an integrated address database for Milwaukee County that links an address database directly to digital real estate parcel maps and structure outlines; and an overview of Intergraph's address matching and geocoding with MGE, GeoMedia, and Dispatch.

The meeting will conclude after the lunch and business meeting at 1:00pm.

Looking toward December

WLIA is planning its winter meeting to be held at the Best Western Grand Seasons Hotel & Conference Center in Waupaca on December 2-3, 1999.

For details on either meeting, contact WLIA at 800/344-0421 or through their web site: www.wlia.org.

August 21-25, 1999, **The Urban and Regional Information Systems Association (URISA)** will hold its 1999 annual conference at Chicago's Navy Pier. Contact person not available yet. For further information, please visit URISA's homepage at www.urisa.org

August 27, 1999, **Accessing Wisconsin GIS Data Sets** training course will be held at the Land Information and Computer Graphics Facility (LICGF) on the UW-Madison campus. The course fee is \$250. Contact: LICGF at 608/263-5534.

September 9, 1999, **Workshop on Comprehensive Planning and Lake Classification** will be held from 1pm - 4pm at the Best Western Northwoods Lodge in Siren, WI. Contact: WLIA at 800/344-0421.

September 10, 1999, **The Wisconsin Land Information Association Quarterly Meeting (WLIA)** will be held at the Best Western Northwoods Lodge in Siren, WI. Contact: WLIA at 800/344-0421.

September 12-15, 1999, **The Wisconsin Counties Association's Annual Convention (WCA)** will be held at the Dane County Expo Center in Madison, WI. Contact: WCA at 800/922-1993.

September 14-17, 1999, **The Municipal Assessors Institute** will be held at the Marriott West (formerly the Holiday Inn West) in Middleton, WI. Contact: League of Municipalities at 800/991-5502.

September 14, 1999, **The Wisconsin Land Council** will meet in Madison. Contact: OLIS at 608/267-2707.

September 15, 1999, **The Wisconsin Land Information Board (WLIB)** will meet at the Wisconsin Dept. of Agriculture, Trade, and Consumer Protection Building at 10am in Madison, WI. Contact: OLIS at 608/267-2707.

September 15-17, 1999, **The Real Property Listers Annual State Meeting** will be held in Marinette, WI at the Best Western Riverfront Inn on 1821 Riverside Avenue. Contact: Jeff Bluske at 608/785-9722.

September 29-30, 1999, **Wisconsin Dept. of Natural Resources' 1999 GIS Expo** will be held at the GEF 2 office building in downtown Madison, WI.

October 3-6, 1999, **The Wisconsin Towns Association's Annual Statewide Convention (WTA)** will be held at the Madison Marriott West (formerly the Holiday Inn West) in Middleton, WI. Contact: WTA at 715/526-3157.

Out-state interest drives expansion

DNR's GIS Expo grows to two days

by Bob Gurda

Heading into the tenth consecutive year of its GIS Expo, the Wis. Dept. of Natural Resources will expand their offerings to cover two days: September 29 and 30 (tentatively). The event is open to anyone interested and is held at DNR's headquarters in the GEF 2 building in downtown Madison.

The agency's GIS user community, which is steadily growing outside of Madison, will now be able to schedule travel and not have to miss any presentations, some of which will be offered multiple times.

For details on the topics of demos that will be presented, visit the 1999 GIS Expo web site (via a link in the SCO web site's Calendar of Events).

October 7, 1999, **The WISCLAND Steering Committee** meeting will be held from 1pm-4pm at the GEF2 office building in downtown Madison in Room 611A, Madison, WI. Contact: Bob Gurda at 608/262-6850, email: rfgurda@facstaff.wisc.edu.

October 12, 1999, **Overview of Land Use Planning/ Data Access using GIS** training course will be held at the Land Information and Computer Graphics Facility (LICGF) on the UW-Madison campus. The course fee is \$250. Contact: LICGF at 608/263-5534.

October 14, 1999, **The "What if?" Planning Support System: Exploring Alternative Futures with GIS** training course will be held at the Land Information and Computer Graphics Facility (LICGF) on the UW-Madison campus. The course fee is \$250. Contact: LICGF at 608/263-5534.

October 15, 1999, **Shoreland Management Using ArcView** training course will be held at the Land Information and Computer Graphics Facility (LICGF) on the UW-Madison campus. The course fee is \$250. Contact: LICGF at 608/263-5534.

October 20-22, 1999, **League of Wisconsin Municipalities' 101st Annual Conference (LOM)** will be held at the Hilton in Milwaukee, WI. Contact: LOM at 800/991-5502.

October 20-23, 1999, **The North American Cartographic Information Society** will hold its 1999 annual conference in Williamsburg, Virginia. Contact: NACIS at 414-229-6282 or 800-558-8993 or email at cmb@uwm.edu.

November 10, 1999, **The Wisconsin Land Council** will meet in Madison. Contact: OLIS at 608/267-2707.

November 17, 1999, **The Wisconsin Land Information Board** will meet at the Wisconsin Dept. of Agriculture, Trade, and Consumer Protection Building at 10am in Madison, WI. Contact: OLIS at 608/267-2707.

November 19, 1999, **GIS Day**—sponsored by the National Geographic Society, the Association of American Geographers, and Environmental Systems Research Institute to promote awareness of how GIS is used to deal with real-world applications within schools, businesses, and the general public.

December 2-3, 1999, **The Wisconsin Land Information Association Quarterly Meeting (WLIA)** will be held at the Best Western Grand Seasons Hotel & Conference Center in Waupaca, WI. Contact: WLIA at 800/344-0421

December 2-3, 1999, **Internet GIS** professional course will be offered as part of the GIS Continuing Education Series at UW-Milwaukee. The basic course fee is \$495. For more information, visit the School of Architecture and Urban Planning homepage.

2000

January 26-28, 2000, **Wisconsin Society of Land Surveyors Annual Conference (WSLS)** will be held at the Holiday Inn in Stevens Point, WI. Contact: WSLS at 414/549-1533.

March 1-3, 2000 **The Wisconsin Land Information Association's Annual Conference (WLIA)** will be held at the Grand Geneva Conference Center in Lake Geneva, WI. Contact: WLIA at 800/344-0421.

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 six 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, Administrative Assistant (608/263-4371), Paul Gunther, Information Systems Manager, and Liz Krug, Program Assistant (608/262-3065), 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...

We maintain a "homepage" on the World Wide Web.

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

<http://feature.geography.wisc.edu/sco/sco.html>



About the WISCLINC Web site...

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

<http://badger.state.wi.us/agencies/wlib/sco/pages/wisclinc.html>

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

Wisconsin Mapping Bulletin

Published quarterly by the Wisconsin State Cartographer's Office. A University of Wisconsin-Madison outreach publication distributed free upon request.

News is welcome on completed or ongoing projects, published maps or reports, or conferences/workshops. Local and regional information is especially encouraged. The editor makes all decisions on content. Deadline for the next issue is October 4, 1999.

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