



Wisconsin MAPPING BULLETIN

WLIB opposes Land Use Council Proposal

by Ted Koch

The Wisconsin Land Information Board (WLIB) has gone on record as being opposed to the proposal to merge the Board with a new Interagency Land Use Council (ILUC). This stance was expressed in a December 5, 1996 letter from John Laub, Chairman of the WLIB, to Mark Bugher, Chair of the State Interagency Land Use Council, and the recently appointed Secretary of the Wisconsin Department of Administration.

The proposal to terminate the WLIB and incorporate its mission with the ILUC was first made to the WLIB at its November 4, 1996 meeting in Madison. The proposal also calls for merging existing WLIB staff with ILUC staff and placing them in the Wisconsin Department of Revenue.

In the report that the original ILUC sent to the governor this last summer, the WLIB was recognized as one of several existing programs that might be coordinated to help support land use information needs. However, that report carried no recommendation to merge existing programs.

Different roles cited

Laub based the position given in his letter on discussions with board members and others in the land information community. Laub cited the major reason for the opposition to be the fundamental differences between the missions of the two organizations, "The mission of the proposed ILUC is clearly focused on land use and planning. In contrast, the mission of the WLIB is clearly focused on the development and maintenance of land information to support the information needs of many applications and systems. Land use planning is only one application utilizing land information. There are many other applications of land information developed and used by state and local government, the private sector and non-profit organizations in Wisconsin. These range from emergency response and disaster preparedness, to real estate, public works, banking and tourism.

Laub added that the merger of these two organizations could create conflict between them based on the structure of the WLIB to create information for all applications, and the mission of the ILUC to apply information and systems for land use planning only. He based this stance on one of the principles of information management that says the design, development and maintenance of information must be separated from the applications using the information. In his concluding remarks, Laub stated that the WLIB is committed to working with all land information applications, including the proposed ILUC.

Welch also opposes merger

State Senator Robert Welch, in a separate letter to Bugher, echoed Laub's concerns in expressing his strong opposition to the proposal. Welch, at the time a member of the State Assembly, was one of the key architects of the state's land information program and later was appointed by Governor Thompson as one of the original members of the WLIB.

continued on page 2...

Highlights of this issue....

<i>Regional Orthophotos released</i>	<i>5</i>
<i>NRCS accelerates soil map digitizing</i>	<i>9</i>
<i>Kurt Bauer retires</i>	<i>10</i>
<i>WLIA's 10th Annual Conference set</i>	<i>14</i>

by Ted Koch

Board Meetings

The Wisconsin Land Information Board postponed its scheduled January 14 meeting, rescheduling it to Tuesday, February 18. The meeting will held at the Wisconsin Department of Agriculture, Trade and Consumer Protection's building on Madison's east side.

At this meeting it is expected that the board will consider several very important issues including, adoption of an alternative for providing aid to local governments, and approval of the final recommendations on Work Group proposals formulated this past summer.

Following February, the next WLIB meeting is scheduled for Wednesday, April 9 at the Wisconsin Department of Transportation in Madison. Adoption of the WLIB strategic plan and, if needed, the approval of emergency administration rules to cover new approaches for providing aid to local government are potential agenda issues.

The board will also be on hand for "Breakfast with the Board" on the final morning of the WLIA Conference in Lake Geneva, March 7 (see page 14 for details).

Grant Program Audit

Last fall, the certified public accounting and consulting firm of McGladreg & Pullen began a review of grant records. All grant awards since the program's inception have been reviewed. Summary of the audit is expected to be made at the February Board meeting.

Budget Increase requested

The Executive Committee has requested a \$135,000 increase in the WLIB operating budget for the next two years. This request will have to go through the Governor's Budget Office for review as part of the 1997-99 biennial state budget. The governor's budget will then go to the legislature for review and passage by July 1.

Review of Attached Boards and Commissions

Lieutenant Governor Scott McCallum's review of state councils, offices, boards and commissions attached to state agencies has not yet been released. However, the WLIB has received preliminary information that the review will not call for either an end to the board or the program. The official release date of the review is not known at this time.



WLIB opposes Land Use Council Proposal,
continued from page 1...

Legislature and citizens study ILUC report

In a related activity, State Senator Fred Riser, as Chair of the Legislative Council's Special Committee on Land Use Policies, is conducting hearings on the ILUC Report delivered to the Governor's office last July. The Legislative Council is a service arm of the Legislature proper that studies issues and makes recommendations. Council committees commonly have public members in addition to selected legislators.

This Committee's first hearing, held on December 17, received testimony from a number of state agency executives including DOA's Bugher, and the executive directors from a number of Wisconsin governmental associations including the Wisconsin Counties Association, the League of Wisconsin Municipalities, the Wisconsin Towns Association, and the Wisconsin Alliance of Cities. The Committee on Land Use Policies has upcoming meetings scheduled for February 4 and February 20 in Madison.

Outcome should be known by summer

It is expected that proposals from the July, 1996 ILUC Report, and the findings of the Special Committee on Land use Policies will be wrapped into legislative proposals addressing a range of land use issues. Initial legislative proposals will be included in the governor's biennial budget that will be presented to the legislature late in January for planned passage by July 1.

As this story continues to unfold, we will be posting news to the SCO web site.

Table of Contents

• State land information news	2
• Federal Policy Developments	3
• Guest Opinion	4
• Orthophoto News	5
• Questions & Answers	6
• News from the SCO	7
• Metadata developments	8
• WISCLAND update	9
• People & Organizations	10&11
• Publications & Products	12&13
• Events	14
• Conferences, Technical Meetings, & Classes	15

Federal Policy Developments

Will report to Congress this year

Panel examines structure and performance of federal mapping and surveying

by Ted Koch

A comprehensive study of government and private sector surveying and mapping is now underway by a panel of experts convened through the National Academy of Public Administration (NAPA). Recent technological advances in surveying, mapping and geographic information technologies, the downsizing of federal programs and transfer of activities toward state and local government, and the impact of U.S. budget deficits on economic growth drove the need for a look at current federal geographic information functions and how these functions are structured and performed.

Ultimately, this study is intended to give Congress an up-to-date analysis of the appropriate roles in surveying and mapping functions performed by federal civilian agencies. Specific areas of investigation include an assessment of the effectiveness and economic impact if some functions are privatized or transferred to non-federal governments, and a determination if there are opportunities to consolidate or restructure federal activities to achieve greater economy and performance. The most recent objective analysis of government and private sector roles in these areas dates back to the 1970s and early 1980s.

The American Congress on Surveying and Mapping (ACSM) coordinated the request for the study, with support funds being supplied by four federal agencies with major roles in government surveying and mapping: the U.S. Geological Survey, the National Ocean Service, the U.S. Forest Service, and the Bureau of Land Management which is serving as the contracting agency with NAPA. NAPA is an independent, nonprofit, nonpartisan membership organization of 400 Fellows chartered by Congress to identify emerging issues of governance and to provide practical assistance to federal, state, and local governments on how to improve their performance.

Serving on the nine member NAPA study panel are executives from public agencies and private companies, including Jack Dangermond, President and CEO, Environmental Systems Research Institute, Inc., Lawrence Ayers, Executive Vice President, Intergraph Corporation, and Wendy Lathrop, President, National Society of Professional Surveyors.

A preliminary report may be issued as early as this summer, with final recommendations following in the fall.

(sources: ACSM and NAPA)

Comments due by May 15

Accuracy standards out for review

by Ted Koch

New draft standards proposed to replace both the long enduring *National Map Accuracy Standard* (NMAS) and the current geodetic control standards have been released by the Federal Geographic Data Committee (FGDC). The new set of standards, called the *Geospatial Positioning Accuracy Standards*, are out for a period of public review and comment closing on May 15, 1997.

The newly proposed set of national standards contains sections on geodetic networks, spatial data accuracy, and reporting methods. The proposed *Standards for Geodetic Networks* will replace previous accuracy standards issued by the Federal Geodetic Control Subcommittee (FGCS), and the proposed *Standard for Spatial Data Accuracy* will replace NMAS which was adopted by the former U.S. Bureau of the Budget 50 years ago.

Consistency and integration are goals

The new standards are an attempt to provide a common methodology for testing and reporting the horizontal and vertical accuracy of clearly defined features represented by a single point coordinate. The intent is to provide a consistent means for directly comparing the positional accuracies obtained for the same point using different methods. This integration can potentially provide better methods for testing the accuracy of data derived from aerial photographs, satellite imagery, maps, and other sources. This is the first attempt by the FGDC to integrate standards for different applications.

Would affect Wisconsin policy

The new positioning standards, if and when officially adopted at the federal level, have a potential impact on Wisconsin's Land Information Program (WLIP). Within the WLIP's foundational element, Geographic Frameworks, NMAS is cited as the standard for the mapping of all man made and natural resource features, and FGCS procedures must be followed when establishing coordinates on geodetic reference monuments, such as geodetic network densification which the WLIP has invested in heavily.

During the review period, the FGDC is inviting government, industry, academia, and the public to review, test, and evaluate the proposed standards. Comments are requested about content, completeness, and usability.

A copy of the draft standard can be obtained from the FGDC Secretariat, U.S. Geological Survey, 590 National Center, 12201 Sunrise Valley Drive, Reston, VA, 22092, or by fax at (703) 648-5755, or downloaded from the following Internet address: <ftp://www.fgdc.gov/pub/standard/Accuracy>.

How the WLIA works through major issues

by Michael Hansen*

When I was invited to develop this opinion piece, I reluctantly obliged. My hesitation was due mostly to the large amount of time I have devoted to recent WLIA issues, and the resulting lack of time devoted to my employer. However after the events of the past few weeks, I have changed my attitude toward this task, and have found new energy. My assignment is to identify a clearly defined problem, analyze it, and propose a solution from my point of view.

To prepare, I set out to list the issues addressed by WLIA over the past year, then divided the list into two groups: clearly defined issues, and those not so clearly defined. Upon completion

The strength that is the WLIA is deeply rooted in the art of debate.

of this list, I was not too surprised to find a lack of balance in my work. In fact, there was no balance.

The “Clearly Defined” column was empty. I would challenge my cohorts to identify an issue that was considered without debate by the organization. I believe your results will be similar. The strength that is the WLIA is deeply rooted in the art of debate.

Examples are not hard to find. Let’s use an easy one; funding of the Wisconsin Land Information Program (WLIP). I don’t think I have to expound on why this is not a “Clearly Defined” issue, but for the two or three people without an opinion, I’ll try.

The current grant mechanism is funded by a portion of two dollars from land related document transactions in each county’s Register of Deeds office. Counties, or municipalities within a county, must successfully apply for a grant in order to bring that two dollars back to their county.

The WLIA membership has successfully unearthed a plethora of funding questions that require answers; whose money is it, state or county; is

each county entitled to a return of their share, or is this program designed to supplement counties and municipalities with insufficient funds available;

...we have three avenues to resolve our issues; consensus, majority, and the political system.

do we really need detailed grant applications, or is assurance of program compliance sufficient; and so on.

How do we find agreement on the “not so clearly defined problems” that we face. As I see it, we have three avenues to resolve our issues; consensus, majority, and the political system.

Consensus (general agreement or accord), is always the preferred avenue of the WLIA. I believe that our track record shows a high percentage of issues resolved through consensus building. We have very talented members who can dig to the heart of an issue and uncover the common denominators that bring the group to consensus. Our ability to communicate across diverse disciplines and then come to consensus on most of our issues is why the WLIA is as strong as it is today, and the primary reason why we are viewed as an important player in developing Wisconsin’s land information infrastructure.

Majority (the greater number; more than half of a total) has been relatively absent as a tool for the WLIA. In my four year career as a board member, I can recall only one vote at the board level decided by a slim majority. I also remember that the issue was very difficult for the board to deal with and the effects of the vote were evident on the minds of board members for many days to follow. I believe the board’s reaction to that vote arose from our inability to reach consensus. It is hard for a group such as ours to accept simple majority when you base the success of you organization on the ability to reach consensus on most issues.

If we are unable to reach consensus, and a simple majority does not satisfy the Association’s need for representation, a third avenue of resolution is the political process. Once again I return to the example of the funding issue to illustrate the effectiveness of this approach. Last October the WLIA Board held a two day session to collect final comments on how to fund the WLIP. The first day was an open meeting with the membership, and the second an all day board meeting to formulate a recommendation to the WLIB.

It was clear at the membership meeting that we could not achieve consensus on the issue. It was also evident that there were two camps developing, one supporting a non-competitive grant process, and the other in favor of a formula based mechanism. Our board

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then voted to forward both proposals to the WLIB for their consideration. This permitted the WLIA membership, being diverse, to forward its preferences directly to the WLIB. I believe this approach has been successful. The WLIB has been receiving official position statements from the constituencies it serves, and is currently working on a final funding mechanism proposal.

The WLIA juggles many roles in the land information arena, but none as important as a forum for statewide debate of modernization issues, especially the not so clearly defined ones. Even under the most challenging circumstances, we have mechanisms that can work.

**Mike Hansen is concluding his one-year term as president of the Wisconsin Land Information Association (WLIA). He is a planner and the Land Information Office contact for Wood County.*

Regional orthophoto projects completed

by Ted Koch

Within the past several months, two major digital orthophoto initiatives have been completed for multi-county areas in the southeastern and southwestern parts of the state. The Southeastern Wisconsin Regional Planning Commission (SEWRPC) has produced digital orthophotos covering its entire seven-county region, and the Southwestern Wisconsin Digital Orthophotography Consortium has completed imagery coverage for six counties.

The ortho image files for both of these projects were developed from scanned aerial photography flown over these regions in the spring of 1995.

SEWRPC

The large-scale SEWRPC digital orthophoto project, covering the counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha, was financed by the Federal Highway Administration, the Wis. Department of Transportation, and SEWRPC. This project provides the 7-county region with a unified digital image base.

The SEWRPC digital orthos are based on black and white photography flown at a scale of 1:20,000 (1" = 1667'). The photos were electronically scanned to produce corrected ortho images with a ground resolution of approximately 2 feet. The ortho images were produced to meet National Map Accuracy Standards at a scale of 1" = 400'. All images are based on the NAD 27 horizontal datum, and the Wisconsin State Plane Coordinate System.

These digital orthophotos are available to the public on CD-ROM. Each CD contains multiple digital orthophoto files, generally covering an individual PLSS survey township of 36 square miles. Each individual file on a CD covers slightly more area than four adjacent sections (roughly four square miles). The four-section files are placed on the CDs in TIFF (Tagged Image File Format) raster format, and are approximately 30 megabytes each in size.

In addition to the digital ortho files, each CD contains Intergraph vector files of section and quarter-section lines, PLSS corners, and map sheet neatlines; and text files of map sheet name, legend and collar information, all of which are useful for building individual map sheet layouts. The vector and text files are in Intergraph DGN format.

The orthophoto CD-ROMs are available from SEWRPC for \$100 each. Contact SEWRPC (phone: 414/547-6721) for ordering information.

Southwest Consortium

The Southwestern Wisconsin Digital Orthophoto Consortium is a group of seven counties that came together early in 1995 with the purpose of collectively obtaining digital orthophotos and sharing technical resources and experiences. Primary funding for orthophoto production was obtained through local government assistance grants from the Wisconsin Land Information Board.

Recently, the four consortium counties of Grant, Iowa, Lafayette and Vernon announced a standard orthophotogra-

phy pricing and data distribution policy. Digital data for these four counties will be available as single township files in a TIFF raster format. All data will be in individual county coordinate systems, and delivered on a CD-ROM. Hardcopy prints of the original black and white aerial photos, and hardcopy plots generated from the digital orthophoto files are also available. All purchasers will be required to sign a data licensing and distribution agreement prior to the purchase.

Two other Consortium counties, Dane and Green, are not part of the above data distribution policy. Orthophoto coverage for Green has just recently been completed, with distribution policies not yet been set.

For Dane County, orthophotos are available directly from the county on CD-ROM, with five township files per disc. Each CD costs \$100. As a standard product, files are in the TIFF raster format using the Dane County Coordinate System (and will soon be available in State Plane Coordinates and geographic coordinates as well). Paper plots of the images are also available, as are complementary digital files of contours, parcels, soils, and zoning. For more information on obtaining Dane County data, contact John Amundson at 608/266-9064.

For more information on obtaining images or digital files for Grant, Iowa, Lafayette and Vernon Counties, contact Fred Halfen, Ayres Associates, in Madison, WI at 608/249-0471.

Products for Columbia County are not yet available.

Major funding for orthophotos announced

At a recent meeting of the Steering Committee of the National Digital Orthophoto Program (NDOP), the USDA Farm Service Agency (FSA) announced that it had authorized \$22 million to be spent nationwide over the next several years toward the production of digital orthophoto quarter-quadrangles. This amount will be added to the \$10 to \$15 million already committed to the NDOP this year by the U.S. Geological Survey (USGS) and the Natural Resources Conservation Service (NRCS).

The NDOP, which oversees federal/state contracting for the production of digital orthophotos in a quarter-quadrangle (one-quarter of a standard 7.5 minute quadrangle) format, has completed nearly 41,000 quarter-quads nationally, with another 47,000 currently in-work. Approximately 220,000 quarter-quads cover the lower 48 states.

At the same meeting, a proposal was made by the USGS to have the three federal (USGS, FSA and NRCS) agencies create a funding pool. From this pool, all future NDOP projects would be funded either at 100%, or if there is a state cooperator at 75%, with the state contributing the other 25%. This would be in contrast to the current funding formula which looks for a 50% funding contribution from a state. The Steering Committee deferred action on the funding pool proposal to its next meeting in April, 1997.

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Where can I find a map showing zones within the state for determining where certain cultivated plants will thrive?

In 1990 the U.S. Department of Agriculture updated and republished its *Plant Hardiness Zone Map* for the country. This map, measuring 4 x 4 feet, was published by the Superintendent of Documents and available for a modest charge.

However, we understand that this map is now out of print. Copies may be available at libraries, particularly "repository libraries" that automatically receive copies of maps produced by the federal government.

Keep in mind that the USDA map (as well as those commonly shown in seed catalogs or gardening guides) is very small scale. It can only show general patterns of plant hardiness and necessarily ignores local variations that are too small to depict.

So, if you are interested in determining the feasibility of successfully growing a particular plant, say a variety of apple, in a particular location in Wisconsin, the USDA map may not provide you with information that is specific enough. If the USDA map shows your location to be borderline for the plant, consider local factors.

Local variations in terrain and landcover can have significant effects on local climate, sometimes called microclimate. The best source of this type of information, which is unlikely to be in map form, may be an Extension office serving your county, or people who have lived in the area over an extended period.

For a variety of information on climatic factors including last spring frost and first fall frost dates as well as length of growing season, contact the State Climatologist's Office at 608/263-2374.



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Are there 7.5-minute USGS quad maps with metric topographic contour lines for Wisconsin?

The simple answer is "no". There aren't any at this time and unlikely to be any in the near future.

While the USGS 1:100,000-scale map series uses contour lines with intervals of 10 meters, the 1:24,000-scale map series was completely constructed using contours in feet.

USGS has the policy that when topographic maps are completely redone, including new contour lines, they will be done using meters. However, only minor revisions are being done at this time to any USGS maps in Wisconsin, so the original contour lines carry over to the revised product.

Of course, there are ways of generating contours in meters using a digital matrix of elevation points (either a regular grid such as a DEM or an irregular set such as a DTM or TIN). Such digital files exist for more than half of the state, in various formats. With appropriate software you can interpret contours, slope, drainages, etc.

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Highway maps and travel atlases show distances between cities along routes, and often have a table showing miles between distant cities. How accurate are these, and are they figured from the edge of one city to the other, or between city centers?

Generally, the distances you see marked on these maps along the routes are based on measurements made right on the highway, which are quite accurate. However, since only whole numbers are usually printed on the maps, there is some rounding up or down from the source data.

Typically, the distances are figured between city centers, although it may not be obvious in some cases where that city center actually exists in the landscape.

The Wisconsin Dept. of Transportation, for its state highway map, used the main post office as such a city center. Since the time that distance was determined, some post offices may have been relocated (such as Madison's).

There may be exceptions to these typical practices, so for critical uses, make sure to check with the producer of the map, or use a more accurate source of information.

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.

News from the SCO

Updates to 1995 products now available

SCO and NGS release new geodetic info

by Bob Gurda

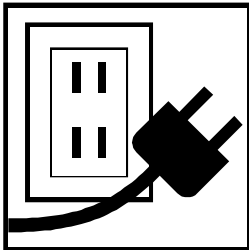
Fresh editions of statewide information on geodetic control are now available from the SCO as well as the National Geodetic Survey (NGS). These are digital files for use on PC computers. Accessing software runs under DOS.

Once each year the NGS assembles sets of information about geodetic control points for each county in the state and publishes that information along with extraction software. Wisconsin's data is packaged along with that from 12 other states in the north central part of the country on a single CD-ROM. The NGS CD-ROM is available from the SCO for \$50 plus tax, shipping, and handling.

The SCO's product also costs \$50.

The SCO provides an enhanced version of the information taken from the CD-ROM, for Wisconsin only. Packaged on 6 diskettes, this includes the latest NGS data for each county along with the same extraction software found on the CD-ROM. In addition, we provide data and a custom-designed program to help locate geodetic control points within the vicinity of any section of land referenced to the Public Land Survey System in Wisconsin.

A number of organizations have acquired these files in previous years. Since the NGS performs a fresh extraction of control point information from its master database each year, content of the resulting file for any given county may be different than it was the year before. Points may be dropped from a previous year's listing for one reason or another, reports of new points may be added, and text describing points maintained in the listings may have changes such as more recent recovery notes.



Use our web site now

SCO's BBS is gone

by Bob Gurda

As projected in our previous issue, we turned off our electronic bulletin board system (BBS) for the final time on December 31. This system served its purpose for almost three years, but has now been supplanted by our Internet web site.

Not only has the BBS been halted, but the telephone line that served it has been disconnected also.

results of reader survey

What do you read in the *Bulletin*?

by Bob Gurda



Earlier this year we asked you our readers to update your mailing address and at the same time to evaluate the varied content of this newsletter. The results are in!!

The winner for the most popular type of content is mapping and GIS project reports. Over 90% of you said that this was of a "high" or at least a "medium" level of interest.

A notch below came a group of four categories. These include the Wisconsin Land Information Program, our Question & Answer page, aerial photography, and product reports.

Trailing a bit lower is a third group composed of six categories: event profiles, the meeting calendar, the guest column, news on geodetic control and remote sensing, and features on people.

Of these eleven categories, only one scored more "low" interest responses than "high", and even at that the margin was very small. Two categories received only 21% in the "high" category, yet respectively they received 40% and 50% in the "medium" category. The category that garnered the most "low" votes still received 61% combined from the "high" and "medium" categories.

What does this all mean? It appears that you have quite positive feelings about the content of the *Bulletin*, which certainly won't prompt us to make any radical changes.

Nevertheless, we are always looking to make improvements in both the substance as well as the form of our newsletter, and invite your ideas and comments at any time.

Help us exploit the World Wide Web

The *Bulletin* is published only every three months. In the interim many news items and announcements come along and quickly grow old. As you become aware of news that would be of value to others, please let us know about it. Our web site is designed to highlight this kind of information, but we rely on you to keep us aware of late-breaking news so that we can do timely reporting.

Metadata Developments

by Hugh Phillips

Metadata Primer available

A draft of the *Metadata Primer* created as part of the 1995 NSGIC CCAP project is now available via the World Wide Web for use and comment at <http://localis2.lic.wisc.edu/~dhart/metaprim.htm>.

The primer provides a systematic approach for learning about metadata and how to produce it. It is targeted at agencies interested in producing metadata, but who need a fuller understanding of the federal metadata standard, the processes necessary to produce it, and its potential benefits.

This primer will be the framework for a satellite video conference on metadata to be presented October 15, 1997.

Metadata tool summary available

A summary of metadata tools completed as part of Wisconsin NSDI Clearinghouse activities, and in support of our 1995 NSGIC CCAP project is available at: <http://badger.state.wi.us/agencies/wlib/sco/metatool/mtools.htm>. The summary contains information on where to obtain the tools, a brief description of each, and samples of the interface and output.

Metadata Encoding Standard drafted

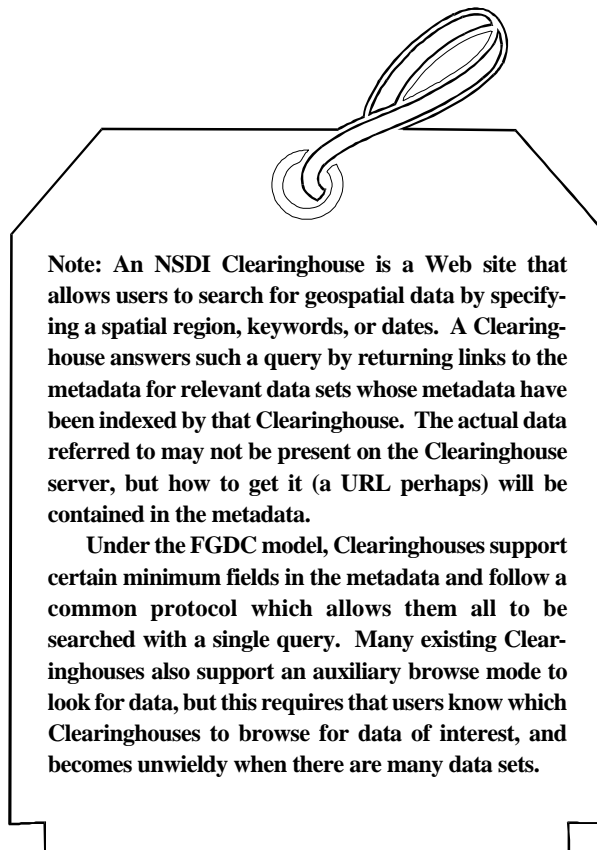
A draft Encoding Standard (<http://www.fgdc.gov/clearinghouse/docs/encoding.html>) for metadata was presented to

the FGDC Coordination Working Group in October. The proposed standard will address some of the metadata exchange problems (described in the April 1996 *Mapping Bulletin*) resulting from the lack of metadata formatting requirements in the Content Standards for Digital Geospatial Metadata (CSDGM). The proposed metadata encoding (exchange) format is based on SGML and uses the tags and structure defined in an accompanying Document Type Declaration.

Clearinghouse developments

Wisconsin has established an Isite-based NSDI Clearinghouse (see note) in parallel with its existing freeWAIS-sf based node. This and other Isite servers are being used by FGDC and its contractors to test and refine the FGDC's new clearinghouse model. Clearinghouses based on the Isite server approach promise greater flexibility and speed for geospatial data searching than the older freeWAIS-sf based implementation.

The HTML and Java-based search query interface for Isite is near completion. When the query interface is available, it will be possible to search any or all Isite-based NSDI Clearinghouses simultaneously in a single query through a USGS gateway or one of its mirror gateways.



USGS alters distribution policy

DRGs along Lake Michigan completed

by Bob Gurda

As part of a continuing project to develop statewide Digital Raster Graphics (DRGs), the U.S. Geological Survey has released completed products for the areas of Wisconsin east of 88 degrees longitude. This area includes all of Door and Kewanee counties plus the eastern parts of counties from Marinette in the north to Kenosha in the south.

New federal distribution process

However, USGS is also adjusting its distribution procedure for DRG files, and will no longer mass publish CD-ROMs for 1 degree blocks (typically 67 files per disc). Instead, once the alternative process is in place, USGS will produce CDs on demand upon receiving orders. These will continue to cover only 1 degree blocks. Details on pricing and delivery time are not yet available. For the latest information, consult the World Wide Web through links found on the SCO web site.

Status of production

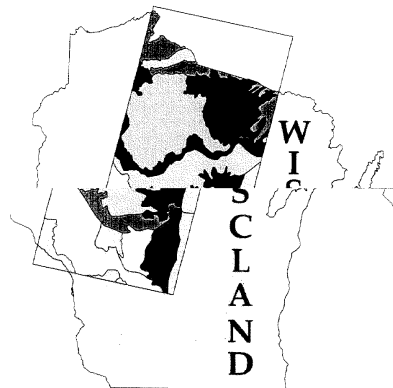
DRGs that are completed for about half of the state (north of 45 degrees north latitude, east of 88 degrees west longitude, plus two blocks generally covering Eau Claire and Trempealeau counties and westward. The remainder of the state is fully funded for production with delivery expected of those blocks between spring and late summer.

Enhancement and access within the state

In Wisconsin, work continues at a slower pace than previously toward mass enhancement of DRGs as produced by USGS, to recode those parts of each file representing the map collar, and to shift the image to other coordinate systems.

Copies of DRGs processed by the Wis. Dept. of Natural Resources (WiDNR) are available to the public at the cost of reproduction. Complete information about availability and pricing of DRGs as obtained from WiDNR are provided in the online version of the *WiDNR GIS Datasharing Policy*, which is viewable on an Internet web site at: <http://www.dnr.state.wi.us/geo/>.

Pricing of data orders includes several components (described in the *Policy*), but as an example when ordering a full block of DRG files (up to 64) from an area covering 1 X 1 degree of latitude/longitude, the first CD costs \$140, with additional CDs at \$90.



Funds major acceleration

NRCS beefs up soil map digitizing

by Bob Gurda

All soil survey maps in digital form within 6 years? Something that until recently seemed impossible is now a real potential, based on a major policy and funding shift by the federal government's USDA Natural Resources Conservation Service (NRCS).

NRCS has allocated \$10 million for the current fiscal year, nationwide, to digital conversion of existing soil surveys. The work will be coordinated from several digitizing centers within each region, one of which will be at the NRCS Wisconsin state office located in Madison.

As a result, the rate at which traditional paper-based soil surveys can be converted to digital form for use in GIS will increase dramatically. According to Ken Lubich, State Soil Scientist with NRCS, the highest priority will be for county projects with cost sharing from local or other sources, and where digital orthophotography exists or can be included as part of the project.

The increased funding was in response to a study group within NRCS that recommended digital conversion of all existing surveys within 6 years based on an annual investment of \$18 million. Obviously, this first year is a lesser amount, and completion within the 6-year time frame will depend on future appropriations from Congress.

To explore opportunities for cost-sharing development of digital orthophotos or digitizing a county soil survey, contact Lubich at 608/264-5334, extension 148. Background information is also posted on the NRCS Wisconsin web site at <http://www.wi.nrcs.usda.gov>.

People & Organizations

After 36 years leading SEWRPC

Kurt Bauer retires

by Bob Gurda

The Executive Director of the Southeastern Wisconsin Regional Planning Commission (SEWRPC), Kurt Bauer, has retired as of the end of 1996.

Acting quickly, the Commission has appointed Phillip Evenson to succeed Bauer. Evenson has been with SEWRPC for 24 years.

A force in modernization of land records both within the state and beyond, Dr. Bauer has overseen a steady progress of surveying, mapping, and analysis going back to his arrival in Waukesha in 1960. Over this period, he has tirelessly promoted investment in information infrastructure to support multiple uses such as engineering, environmental analysis, and transportation planning.

Although he is well known in land information circles around Wisconsin for his leadership at SEWRPC, many people probably are unaware that Bauer worked for both the City of Madison as well as the Wis. Dept. of Transportation in earlier positions, or that he was a commissioned officer in the Coast and Geodetic Survey and conducted hydrographic surveys in Alaskan waters. He also served as a member of the Wisconsin Land Records Committee (WLRC).

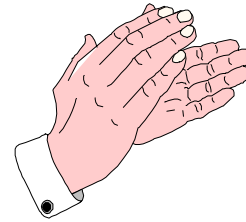
In an interview conducted prior to his retirement, Kurt pointed with particular pleasure to the revitalization of the Public Land Survey System in the seven counties served by SEWRPC, with three counties now completed to a robust level rarely seen elsewhere. Building on that work which includes a densification of survey control, large scale base mapping is also complete over 64% of the region.

He also came to see the recommendations of the WLRC become embodied in law that created the Wisconsin Land Information Program. In Bauer's estimation, that Program addressed the single largest impediment to making progress toward modern mapping at the local level: funding through a source not dependent on the property tax.

In the case of Milwaukee County, he also oversaw the development of an arrangement between public sector organizations and public utilities to further enhance funds available for modernization.

Not surprisingly, Dr. Bauer is critical of some aspects of the report of the State Agency Land Use Council issued in June. Specifically, he believes it fails to recognize both the critical nature of technical support for planning as well as the efficiencies and effectiveness of planning from a regional perspective for metropolitan counties.

Asked what he would be doing beginning January 2nd, Bauer said "I haven't even had time to think about that yet, but be assured I won't drop out of the mapping and planning scene entirely."



Highest honor from URISA

Niemann feted with Horwood Award

by Bob Gurda

Professor Bernard J. Niemann, Jr. of the University of Wisconsin-Madison has received the Horwood Award from the Urban and Regional Systems Association (URISA). This award is given annually to acknowledge an individual's major contributions to the field.

Niemann is the first person from Wisconsin to have received the Horwood which is named after one of the founders of URISA.

Well known in GIS circles in Wisconsin and beyond, Ben is a member of the Wisconsin Land Information Board, and Director of the campus' Land Information and Computer Graphics Facility.

(source: URISA)

Plans to be back for March meetings

Moyer is on the mend

by Bob Gurda

D. David Moyer, a man who has worn many "hats" over his years in Wisconsin, is recovering from recent heart bypass surgery. As president-elect of the Wisconsin Land Information Association, he expects to be ready to begin his one-year term as president at the Annual Conference in early March.

Moyer serves as the Wisconsin State Advisor for the National Geodetic Survey from an office in Madison. An economist by training, Dr. Moyer is also an adjunct professor at the University of Wisconsin-Madison and a former member of the Dane County Board of Supervisors.

People & Organizations

Geography Professor at NIU

Richard Dahlberg dies

Richard "Dick" Dahlberg, a well known and respected professor of Cartography at Northern Illinois University (NIU) in DeKalb, IL, and a leader of cartography in the Midwestern U.S. for nearly 30 years, passed away after a brief illness on December 15, 1996. In the 1950s, Dahlberg received a Ph.D. in Geography from the University of Wisconsin-Madison.

Following faculty appointments in the Geography Departments of both UCLA and Syracuse University, Dahlberg became Chair of the Geography Department at NIU in 1970. For 26 years, until his retirement this past June, he served both as faculty member and Director of the NIU Laboratory for Cartography and Spatial Analysis. During this time he authored or co-authored 50 professional articles and 11 books.

Dahlberg was well known in professional cartographic circles, having served as President of the American Congress on Surveying and Mapping (ACSM) in 1993, President of the Land Information Assembly, National Director and President of the Western Great Lakes Region of the American Society of Photogrammetry and Remote Sensing, and Co-Chair of the Education Committee of the International Cartographic Association. He also served as Editor of the ACSM journal, *Cartography and Geographic Information Systems*.

In Illinois, Dahlberg established the Illinois Mapping Advisory Committee, helped to establish and served as President of the Illinois GIS Association, was Editor of *Illinois GIS and Mapnotes*, and a research Affiliate of the Illinois State Geological Survey. In recognition of his achievements and prominence brought to Illinois cartography, the Illinois GIS Association awarded Dahlberg its first Distinguished Achievement award in November, 1996.

Space Imaging broadens market presence

EOSAT bought out

Space Imaging Corporation has acquired EOSAT, the private company that distributes Landsat satellite imagery under contract with the federal government. EOSAT also markets imagery acquired by several other countries' satellite programs.

Space Imaging is one of several firms preparing to launch the first privately financed remote sensing satellites which will provide higher resolution images than ever before available commercially.

(source: EOSAT)

State and county organizations will join

FGDC expands participation

by Ted Koch

At a January 9, 1997 meeting in Washington D.C., the Federal Geographic Data Committee (FGDC) invited the National States Geographic Information Council (NSGIC) and the National Association of Counties (NACo) to formally participate in the coordination activities of the FGDC. Participation by both groups will extend to the FGDC Steering Committee and the Coordination Group which oversees the activities of FGDC's 12 theme subcommittees and 6 working groups.

The representation of organizations such as NSGIC and NACo in committee activities is a significant change in policy for the FGDC, since up to this time FGDC membership has been limited to 15 federal agencies. NSGIC bills itself as an organization of states that works for the effective use of information technology. Paul Tessar from the Wisconsin Department of Natural Resources currently serves on the NSGIC Board of directors.

WLIB and WISCLAND

State organizations partner with FGDC

by Ted Koch

In a recent announcement, the Federal Geographic Data Committee (FGDC) has recognized the Wisconsin Land Information Board (WLIB) and the state's WISCLAND partnership as participants in its Cooperating Groups Partnership Program. The purpose of this program, begun in 1995, is to encourage interaction between the FGDC, state coordinating councils and other groups to further develop the National Spatial Data Infrastructure (NSDI).

Partnership activities include standards development and review, participation in the National Geospatial Data Clearinghouse, coordinating data collection and distribution, and participating in development of a National Geospatial Data Framework. Wisconsin becomes the fifteenth state to have a group(s) join into the FGDC Partnership Program.

To provide effective coordination between the WLIB, WISCLAND and the FGDC, the State Cartographer's Office has been designated by the WLIB and WISCLAND to be its liaison with the FGDC. As a member of the WLIB and Chair of the WISCLAND Steering Committee, the SCO can provide the necessary connection and coordination between the three groups. At present, the Partnership Program has no set priority list of topics or scheduled meeting dates. Issues will be brought before the cooperating groups as needs arise.

Publications and Products

Completion expected by spring

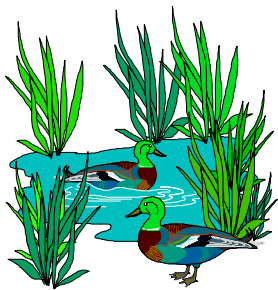
Digital wetlands inventory almost finished

The Wisconsin Wetland Inventory maps are almost all available in digital form. According to Calvin Lawrence of the Wisconsin Department of Natural Resources (DNR), computer maps for 69 of the state's 72 counties are available. The files are in Arc/Info format.

Work remaining is centered on three counties: Marathon, Outagamie, and Waupaca. While earlier plans called for the entire state to be finished by the end of 1996, staffing limitations have caused a short delay until this spring. The process has involved conversion from traditional map form into digital versions, then processing including adjustments to improve geometric fit with accurate base maps.

For information on acquiring copies of the files, contact Lawrence at 608/266-0756.

(source: Wis. DNR)



Book profiles GIS education worldwide

Directory lists academic GIS facts

by Bob Gurda

A new publication lists over 800 academic GIS programs around the planet. Based on surveys over the last several years, this 400-page book lists departments, and faculty and courses where available.

The 1996 *Directory of Academic GIS Education*, published this last fall, is an impressive listing that will benefit students, faculty, and prospective employers.

The sheer number of institutions which responded to the surveys sent out by Prof. John M. Morgan of Towson State University in Maryland is testimony to the degree to which GIS education has gained. Over 400 listings have full reports on faculty, courses, and software resources. Another 400 list a contact person.

The book includes two indexes, one sorted by nation, and the other by type of department (e.g., geography, forestry, surveying, etc.). Most contact name listings include phone, fax, and email.

The book is priced at \$ 59.95 from the publisher, Kendall/Hunt in Dubuque, IA. Call 800/228-0810 for details.

Using receiver in Onalaska

EMTC offers GPS base station data

In an effort to increase accessibility to GPS base station data, the Environmental Management Technical Center (EMTC) is now serving GPS base station data through the Internet for use in post-processing. The base station files may be used to differentially correct GPS data files collected within a 300 mile radius of Onalaska, Wisconsin (which includes all of the state).

The GPS base station data are accessible through the Center's Web site (www.emtc.nbs.gov) and the anonymous FTP site ([ftp.emtc.nbs.gov](ftp://emtc.nbs.gov)). If accessing the data through the web, a link is available on the home page underneath "Available Data." If accessing the data via anonymous FTP, the files are stored in the directory `pub/gis_data/gps_basestation`. Descriptive text describing the location of the GPS base station and file naming conventions are available through the web and FTP sites.

EMTC invites you to check out the site. For further information contact Larry Robinson, base station manager, at (608) 783-7550 ext. 33 or larry_robinson@nbs.gov.

(source: EMTC)

Uses CD-ROM and/or Internet

USGS Yearbook goes high tech

by Bob Gurda

The U.S. Geological Survey has switched to a new medium for its latest yearbook. Traditionally printed on paper, the 1996 Yearbook comes on a CD-ROM or can be accessed over the Internet.

As usual, the yearbook profiles a number of activities within the USGS covering mapping in addition to geology and water resources. However, by utilizing digital capabilities you can search and link between topics in ways that were impossible with the traditional format.

The version on CD contains links to the Internet in the event that you have web access. By this means, you can access updated information. This version is available for \$50 from the USGS, operates on either PC-Windows or Macintosh personal computers, and contains text, video clips, and still images.

To access the yearbook over the Internet, set your web browser to <http://yearbook.usgs.gov>

(source: USGS)

Publications and Products

New State Highway Map available

by Ted Koch

Wisconsin's new 1997/98 Official State Highway Map is now available. Produced by the Wisconsin Department of Transportation (WiDOT) using computer mapping procedures, the map is available in two versions: the familiar and free folded paper copy which measures 26 x 34 inches, and a plasticized wall-sized version of the state map side only, measuring approximately 3 x 4 feet.

This new edition carries the theme, "Wisconsin Moves You" which is intended to convey a message of both transportation and scenic beauty. The reverse side of the full state map contains a block of detailed insets covering the state's 16 metropolitan areas with combined populations over 30,000, plus an table of information on state parks, forests and trails.

This year, WiDOT has printed only 920,000 copies of the map. It is anticipated that an additional 1 million copies will be printed next year. This total of 1.9 million will be less than half the total number of maps printed in 1993/94 and 40% less than printed in 1995/96.

With the costs of map printing increasing nearly 25% over the past 4 years, the WiDOT has elected to publish fewer maps to lower costs, and curb the ever increasing demand for the map. The WiDOT is exploring privatization alternatives for the 1999/2000 map.

Copies of the folded map may be obtained free from WiDOT transportation district offices and motor vehicle service centers. The larger wall map costs \$6.00 plus tax, and is available from WiDOT's central Maps and Publication Sales, (608) 246-3265.



Now available through the SCO

Cultural Map proves popular

by Bob Gurda

People are responding positively to the new *Cultural Map of Wisconsin* as featured in our previous issue. UW-Madison Prof. David Woodward reports that sales are approaching 9,000 copies.

Woodward has been featured on various television and radio programs over the last several months, discussing the map and its production much like he did with us for the interview in our October issue of the *Bulletin*.

Here at the SCO, we have acquired a supply of copies of the map for sale, in both folded and unfolded form. The price is \$9.95 (or add \$1.00 to be shipped in a tube) plus shipping and tax. For an order form, access our web site (see address on page 16) or ask us to fax one to you.



Lake Geneva, March 4-7

WLIA plans 10th Annual Conference

by Ted Koch

The Grand Geneva Hotel located in the City of Lake Geneva in the southeast corner of the state will host the 10th annual conference of the Wisconsin Land Information Association (WLIA). Scheduled from March 4-7, this gathering based on the theme "For the Benefit of All" is expected to draw 500 participants and over 30 exhibitors.

Non-members are welcome to attend this event as well as WLIA's quarterly meetings.

Following a format established several years ago, the conference will begin on Tuesday (March 4) with a series of pre-conference workshops. Workshops include half-day sessions each on metadata and GIS applications for coastal zone areas. Simultaneously, there will be a full-day workshop on the potential applications of commercially-available high resolution satellite imagery.

The metadata workshop will be a limited-enrollment, hands-on training session, with participants using metadata software tools to document one or more of their organization's data sets. The coastal zone workshop will be conducted by staff from the UW-Madison Sea Grant Institute. The commercial satellite workshop will feature presentations by representatives from five private satellite imagery marketing companies, and Tom Lillesand, a professor at UW-Madison and internationally recognized expert in remote sensing.

In a departure from previous years' programs, the exhibitor's reception from 5:00-7:00 Tuesday evening will open the conference proper. A Wednesday morning Land Records Forum will be followed by luncheon keynote speaker David Zach. Zach, a futurist from the Milwaukee area, studies the progressions and implementations as we move from the information age to the new knowledge age. He was enthusiastically received as the featured keynote speaker at the URISA annual conference last August in Salt Lake City, UT.

General sessions covering program management and evaluation, orthophotography and mapping, applications and local experiences, and technical issues will begin Wednesday afternoon and continue through Thursday. Exhibits will be open from mid-morning Wednesday until their close that evening.

Wisconsin Governor Tommy Thompson has been invited to speak at the Thursday noon awards luncheon. He will be followed by a general plenary session featuring Joel Morrison, Chief of the Geography Division of the U.S. Bureau of the Census, Lance McKee, Vice President of the Open GIS Consortium, Inc., and Richard Hilton from Lake County, Illinois.

The conference will conclude on Friday morning with "Breakfast with the Land Information Board", the Member Forum/Town Meeting, and the annual WLIA member business meeting.

For more information on the conference, contact the WLIA at 800/344-0421.

"Cartography in the 21st Century"

Morrison to speak at UW-Madison

by Ted Koch

The entire world and its predominant technology is radically changing. Each discipline must have the internal confidence to "sell" humanity its products and services. Cartography is not an exception. Change offers exciting possibilities or roles which cartography may play in the next century.

These and other futuristic visions will be shared by Joel Morrison in a talk scheduled for Science Hall on the UW-Madison Campus at noon Friday, March 7.

Morrison currently serves as Chief, U.S. Bureau of the Census' Geography Division in Washington D.C. He formerly worked as head of research activities for the U.S. Geological Survey in Reston, VA, and before that was a professor of cartography in the UW-Madison Department of Geography.

Selected Conferences, Technical Meetings, and Classes

January 22-24. **Wisconsin Society of Land Surveyor's Annual Institute Convention** will be held at the Holiday Inn in Stevens Point, WI. Contact: Mike Roach at 414-496-6787.

January 27. **Your Business and Satellite Imagery** will be held in Minneapolis, MN. Contact the Business Image Group at SPOT Image Corp. at 703/715-3100; fax: 703-648-1813.

January 30. **Land Use Law Update in Wisconsin** will be held at the Best Western Inntowner in Madison, WI. Call: National Business Institute, Inc. at 715-835-7909; fax: 715-835-1405.

February 18. **Wisconsin Land Information Board Meeting** will be held from 10:00am to 3:00pm at the Dept. of Trade and Consumer Protection in Madison, WI. Contact: WLIB at 608-267-2707.

February 19. **Upper Mississippi River Basin Association 16th Annual Meeting** and 61st Quarterly Meeting will be held in Chicago, IL. Contact: UMRBA offices at 612-224-2880.

March 4-7. **Wisconsin Land Information Association's Annual Conference** will be held at the Grand Geneva Conference Center in Lake Geneva, WI. Contact: WLIA at 800-344-0421.

April 9. **Wisconsin Land Information Board Meeting** will be held from 10:00am to 2:00pm at the Dept. of Transportation Conference Room 421, 4802 Sheboygan Avenue in Madison, WI. Contact: WLIB at 608-267-2707.

April 23. **Northland Area GIS Users Group** will be held in Ashland, WI. Contact: Dennis Kanten at 715-762-5711.

June 5-6. **Wisconsin Land Information Association Quarterly Meeting** will be held at the Holiday Inn Sunspree in Oconomowoc, WI. Contact: WLIA at 800-344-0421.

June 24. **Wisconsin Land Information Board Meeting** will be held from 10:00 a.m. to 2:00 p.m. at the Dept. of Trade and Consumer Protection in Madison, WI. Contact: WLIB at 608-267-2707.

September 4-5. **Wisconsin Land Information Association Quarterly Meeting** will be held at the Radisson Inn in LaCrosse, WI. Contact: WLIA at 800-344-0421.

September 30. **Wisconsin Land Information Board Meeting** will be held from 10:00 a.m. to 2:00 p.m. at the Dept. of Trade and Consumer Protection in Madison, WI. Contact: WLIB at 608-267-2707.

December 4-5. **Wisconsin Land Information Association Quarterly Meeting** will be held at the Paper Valley Inn in Appleton, WI. Contact: WLIA at 800-344-0421.

For Bulletin and web site

Send us your calendar items

We are now focusing our calendar listing on events scheduled in Wisconsin and the nearby region. When you keep us informed of your organization's meetings, workshops, classes, etc. we can help spread the word to several thousand people.

Even if you are not seeking additional people to attend an event, announcing it keeps others informed and helps us all coordinate our schedules.

Often, events are scheduled and then occur in time frame that is too short to get them listed here before they have taken place. To deal with this problem, we also maintain a list of scheduled events on our web site.

To deal with the events outside our region which we formerly included in the *Bulletin* calendar, we now provide links through our web site to national and international calendars maintained by other organizations. These listings are similar to what has been carried for years in several publications that serve the mapping and GIS fields, but which many people in our state may not have seen regularly.

Between the *Bulletin* and our web site, plus the linked sites, you now have access to much more information about events than previously.

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), Hugh Phillips, Information Processing Consultant (608/262-8776), Brenda Hemstead, Administrative Assistant (608/263-4371), 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 36.25 (12m). In addressing this role, the SCO functions in a number of ways:

- publishes the *Wisconsin Mapping Bulletin*, catalogs, guides, brochures, and other documents 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.
- 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 Web site...

We maintain a "homepage" on the Internet's World Wide Web.

Here, you will find 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 and browsing software to 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 prototype metadata 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 April 2, 1997.

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