State Cartographer's Office

Reporting on Mapping and Land Information in Wisconsin

# Wisconsin MAPPING BULLETIN

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## Land use study highlights LIS State agency chiefs recommend support for planning to governor

by Bob Gurda

Land information systems have a key role in new approaches to dealing with land use issues in Wisconsin, according to a recent report to Governor Thompson from the state's Interagency Land Use Council (ILUC).

The 18-page report, issued July 1, states (among other things) that computerized communication and information technologies are critical to managing and integrating the wide variety of information about characteristics of the land. Such integration is critical in order for the state and its local governments, with the active participation of citizens, to effectively address land use concerns.

The report, titled *Planning Wisconsin: Report of the State Interagency Land Use Council*, also advocates an increased level of planning, statewide.

The council foresees the need for more and better geographic data, software, and equipment, and trained staff to utilize them, especially within local governments. It also recognizes the opportunity to build upon existing programs and entities such as the Wisconsin Land Information Board, the SCO, regional planning commissions, and statewide data development efforts such as WISCLAND.

Created by Governor Thompson almost two years ago, the ILUC is composed of the secretaries of state agencies that have key land use roles: Transportation; Natural Resources; Agriculture, Trade, and Consumer Protection; Commerce; Administration, and Revenue. Department of Revenue Secretary Mark Bugher chaired the group.

The report recommends that the council be made a permanent entity to exercise continuing coordination of land use issues amongst state agencies, and that its work be supported by a small dedicated staff, plus existing staff from affected agencies, so that interagency cooperation can be enhanced. According to Kathy Heuer, Deputy Secretary of the Wisconsin Department of Revenue, the council believes that various recommendations contained in its report will be translated into recommended changes to state statutes, or to budget items, with the governor's support. The general budget process is already underway in state agencies, leading up to the governor's proposed biennial budget (covering the two years beginning July, 1997) which will be considered by the legislature next spring.

There is no indication at this time of precisely what kinds of legislative language will emerge over the next few months. We will track this topic in upcoming issues of the *Bulletin*.

The council's report is based heavily on work done from late 1994 into early 1996 by the Strategic Growth Task Force. This larger group, representing a wide variety of constituencies, was appointed by the governor to assist the council in collecting and analyzing information on land use problems and existing means of dealing with land use issues in Wisconsin, approaches in other states, and opportunities to utilize emerging technologies. That task force included a number of people, including several from local governments, familiar with the potentials of GIS to help support land use analysis.

Further information on the council, the task force, the report and earlier reports and drafts is available at a site on the World Wide Web (http://badger.state.wi.us/agen-cies/dor/iluc.html) or by calling Greg Landretti at the Department of Revenue at 608/266-8202.

## 

by Ted Koch

## **Board Meetings**

The Wisconsin Land Information Board held its most recent meeting on May 13 in Madison. Meetings for the remainder of 1996 have been set as follows:

August 20-21 in Madison - The board's annual strategic planning session.

**November 4** in Madison - Board approval of local government grant funds requested during the July, 1996 application period.

#### Grants

At its May 13 meeting, the board approved 15 of the 35 grant applications received from local governments in the January 1996 application period. The 35 grant applications requested funding of nearly \$2.8 million. For the 15 approved grants, the board awarded a total of \$1,204,745 with none of the projects receiving full funding. All of the counties receiving grants in this period have received at least one previous grant.

Also at its May 13 meeting, the board voted unanimously to suspend the January, 1997 grant application period in order to analyze and propose changes to the grant program. The board also voted unanimously to go to an annual funding cycle rather than semi-annual; however, the board did not set a time for the annual process to begin.

## Preparations for strategic planning

In August, the WLIB will consider how it might adapt the program to realize improved benefits. A series of events over the spring and into the summer have resulted in a large number of recommendations for changes. These events are describe in the article on page 3. Most recently, volunteer work groups composed of members of the land information community have been developing specific proposals to be forwarded to the WLIB for consideration at the strategic planning sessions set for August 20-21.

#### Fax-back service

The WLIB is developing a means by which anyone can call in to an automated telephone answering device and select from available documents to be faxed back to the caller.

## **Technical support via List Server**

The WLIB has arranged for an Internet-based service that will allow the broader land information community to share expertise. The list server will broadcast messages submitted by one user to all users. Initially, this service will be limited to Land Information Offices and key state contacts. The goal is to open the system to additional users after a developmental period.

## **Officers Re-elected**

At its May 13 meeting, the board re-elected officers: John Laub (chair), Ben Niemann (vice-chair), and Les Van Horn (secretary). These three, along with Mark Wahl, Administrator of the Department of Administration's Division of Technology Management, make up the board's Executive Committee. All board officers serve a one-year term.

#### **Board Membership**

Governor Thompson has appointed Joseph Wisniewski to the WLIB, replacing Anthony Kiedrowski who died in October. Wisniewski is a County Supervisor in Vilas County, retired from the Milwaukee Police Department, and operates a resort. He has many years of experience as a public official including Town board and chair, County Board and vice chair, and the Wisconsin Counties Association.

### Staff

Sue Simons became Sue Ruhde upon her recent marriage. Gerri Parrish has replaced Kim Keehn in a half-time support position.

## Office location change

The WLIB's executive staff has moved from the DOA building. Their new address is: 17 South Fairchild Street, 7th floor, Madison, WI 53703-3204. This represents a move of about five blocks to a location off the west side of the capitol square. Telephone and fax numbers, and email addresses, will not change.

## Standards

At its May 13 meeting, the board approved the recommendation of the Executive Committee to adopt the proposed Standard for Exchange of GIS Data among state agencies, and to recommend it to the DOA as an official state Information Technology Standard. This standard deals specifically with the exchange of GIS data in ESRI Arc-format.

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### Input arriving from WLIA and workgroups

## WLIB may reshape state program

#### by Doug King, Exec. Dir., WLIB

Taking stock of a program that has received national attention, the land information community in Wisconsin is in the process of reshaping that program. So far this year a flurry of activity has resulted in great progress, leading up to the next step in mid-August.

## Origins with the WLRC

When the Wisconsin Land Records Committee (WLRC) first explored how modernization of land records could take place, the common vision was that, in fifteen years, local governments in Wisconsin would have made great progress. They would have access to the improved technology and would have developed institutional arrangements necessary to automate their land records so they would be providing more effective services in a more equitable manner to the citizens of the State.

That early vision of the WLRC, from almost ten years ago now, is coming to fruition. Most local governments are gaining access to the technology they need to begin and to operate the kinds of modern land records environments that were only a dream in the early to mid-1980's. But the program that Wisconsin implemented to help reach these goals has evolved to a point where we need a new common vision that will carry us into the next century. It is the task for the WLIB to articulate such a vision for its program, but as with the WLRC, the broader community need to be involved.

#### Cooperative approach to a new vision

To develop this new vision, the President of the Wisconsin Land Information Assocation (WLIA), Mike Hansen, and I, jointly asked the two organizations to work together to consider changes to the vision developed in the 1980s and to consider fundamental changes to the way the program does business. Changes that will significantly redirect its course.

## Involving the land information community

A detailed briefing containing the rationale for considering such change was presented to the WLIB in Madison on February 13, 1996. The WLIB authorized presentation of the briefing to the WLIA at its general membership meeting in Oshkosh on March 6, 1996. The WLIA response was overwhelmingly positive and the call for change was loud and clear. Many suggestions were brought forward, including some dramatic, controversial and provocative proposals for the future of the Land Information Program.

On May, 17, 1996 the WLIB and WLIA jointly invited land information professionals from across the state to participate in a one-day workshop in Stevens Point to develop a vision for land information in Wisconsin that could be used as a guide for making changes to Wisconsin's program. The workshop was facilitated by Nancy von Meyer. Over 40 people attended and developed draft statements on what things should look like 10 years from now.

Next, on June 6 & 7, 1996 the WLIA Board and its membership were invited to consider all of this input and developed a draft Vision for Land Information in Wisconsin. The vision combined the statements about the program from the March WLIA meeting with new statements from the May 17, 1996 workshop. The result was a vision for land information in Wisconsin with associated supporting statements.

The draft vision was discussed extensively and adopted at the WLIA general membership meeting in Minocqua on June 7, 1996.

### The work group process

With the WLIA Vision as background and guidance, the WLIB solicited volunteers from the land information community to serve on six work groups to make recommendations to the WLIB on the future of the Land Information Program in Wisconsin. The work group schedule was for three all-day meetings each, for a total of 18 days of meetings from June 17 to July 24. Doug King facilitated the meetings. Over 50 people from federal, regional, state, county and municipal agencies participated. Work Group recommendations were made in the context of the WLIA vision, the WLIA statements about the Land Information Program supporting that vision, and "other considerations" provided to the Work Groups by WLIA for discussion but without any endorsement.

The work group recommendations address each of the WLIB's five legislative charges: (1) grants program; (2) county-wide land records modernization planning; (3) state agency land information integration planning; (4) land information clearinghouse; and (5) technical support. The work groups also made recommendations on the Annual Survey and also the role of the new County Land Information Officer's Council. An open comment period was provided using the new WLIB Fax-back service, which automatically faxed the recommendations to anyone calling the WLIB Fax-back phone number.

#### Onward to the WLIB

On August 20-21, 1996 the WLIA vision for land information in Wisconsin, together with the work group recommendations on the future of the Land Information Program in Wisconsin, will be presented to the WLIB at its annual strategic planning meeting. At the meeting, the WLIB will be asked to consider what are surely to be precedent setting recommendations by making fundamental changes to the Land Information Program, including its grant program, and developing new policies to guide its future. Sign-up now to avoid the long lines

# Jump-starting your metadata collection efforts

#### by Crazy Larry<sup>1</sup>

By now, some of you are probably getting tired of certain people pontificating on the value of metadata and why, as your patriotic duty, you should create some metadata for your geospatial data sets (and contribute it to the Wisconsin NSDI Clearinghouse). Well, here at Crazy Larry's Metadata Chop Shop we know that if we hit you with the metadata song and dance long enough, you will eventually give in and (with a groan) actually try to create some metadata.

The general idea is that by keeping track of where your data came from and what its qualities are, both you and others will be more confident in using it appropriately in the years to come. This metadata will also be searchable by people trying to discover useful data sets, and you won't be inconvenienced by those people doing this searching if your metadata is available through a clearinghouse.

#### So how do you start?

Begin by listing your data sets. Almost any scrap of paper will work for this; the back of your hand is not recommended. If you work with Arc/Info and ArcView under SunOS or Solaris 2.x there is a utility called *findarc* (Geographic Designs) that will locate and document Arc/Info and ArcView coverages, GRIDs, shapefiles, projects, and workspaces (see associated metadata tools article on page 5 for details).

Prioritize your data sets to help you identify those most important to document. Select for early attention those data sets that have current or anticipated future use, data sets that form the framework upon which others are based, and data sets that represent your organization's largest commitment in terms of effort or cost. If a person in your organization who was involved in creating some data is expected to leave or retire soon, go to that person immediately and collect any and every bit of knowledge before it walks out the door.

Consider data granularity and similarity. It may be possible to document many of your data sets (or tiles) under an umbrella parent. This can be a big time-saver. And, up to this point, all of your work can be done on paper.

Take a break, have some tea and seones kringle. Then, get back to the grindstone.

Take some time to learn a little about the federal standard for metadata - the *Content Standards for Digital Geospatial Metadata* (CSDGM). Don't dig too deep initially - it's, aaah, well, take a look at it and you will see what can't be put into words for this upbeat article. Keep in mind that the CSDGM is meant to communicate those things which you need to know in order to use a data set effectively, and to record (or to evaluate) its fitness for use. Metadata for a data set can communicate its theme and purpose, who produced it and when, the area covered, use constraints, accuracy assessment, lineage, coordinate system, attribute information, and how to obtain it (among many other possible metadata elements).

It is very helpful to look at some completed metadata alongside the actual Content Standards document to help understand it... Crazy Larry's will provide FREE metadata samples, at 0% interest to anyone owning a copy of the SCO's *Wisconsin Coordinate Systems* handbook who wants to get "hooked" on metadata.

Select a metadata tool appropriate to your GIS and operating system (see associated article) to help you build your metadata. Build a template metadata document that is appropriate for your site, but not data set specific. This will include items such as contact information, distribution information, GIS/OS environment, access and use constraints, liability disclaimer, and possibly coordinate system. Use a copy of the template document as the base for creating your first metadata document.

Start with a simple data set, e.g. a point coverage of wells, the data for which came from a single source. Have your first few metadata documents reviewed by someone familiar with the CSDGM and who can make suggestions for improvement or correction of the metadata. You can't expect to become an expert overnight in this business, so share the learning process with others to move forward more quickly.

As you get more confident in your metadata skills, move on to documenting more complex data sets and increasing the detail of your metadata. Metadata creation is an openended affair, but at least try to document at a level that preserves the value of the data within *your* organization.

#### Help is on the way

Okay, I admit it. This was a pretty shallow treatment of an involved subject, but the ruthless editor gave me a certain column allotment! Additional metadata creation help is forthcoming. By the end of the year the National States Geographic Information Council (NSGIC) Metadata Primer should be completed. This resource will provide a wealth of metadata background and tutorial information. Also, it seems likely that some in-state hands-on training in metadata production will occur, possibly with the aid of FGDC instructors.

If your geospatial data sets are beginning to pile up, and your metadata isn't keeping track, now is the time to get your feet wet. We'll try to help with lessons and critiques, and as more of us become familiar with the processes and tools, it will get easier.

One thing is certain: the longer you wait to start, the harder it will be to catch up. And, for some data sets, you may lose key information forever.

<sup>&</sup>lt;sup>1</sup>Crazy Larry is a nom de plume of Hugh Phillips, the metadata meister of the SCO

## New and improved software appears

## Metadata input tools make progress

## by Hugh Phillips

In the April *Bulletin* we described several recommended metadata software tools. Since that time there has been a flurry of activity in that area. Some of the new or revised tools look promising. They include: *Metamaker*, a USGS revision of *document.aml*, *findarc*, and *cns*, a metadata formatter.

## Metamaker

*Metamaker* is a free MS-Windows / Microsoft Access based tool from the Environmental Management Technical Center of the National Biological Service (soon to be affiliated with the U.S. Geological Survey). A series of forms guide the user through metadata entry. Pull down menus allow the user to select from sections that may have already been completed through previous metadata documentation work.

#### document.aml

Several of our readers are familiar with *document.aml*, a free metadata documentation utility designed for use with UNIX versions of Arc/Info. When *document* is applied to an Arc/Info coverage it extracts some of the metadata information automatically, which cuts down the time and effort required to carry out the documentation. It was developed prior to the 1994 version of the *Content Standards for Digital Geo-spatial Metadata (CSDGM)* and until recently reflected its heritage with input and output elements which do not correspond to the June 8 1994 CSDGM. Additionally, the output reports produced by *document* had irregular formatting and a considerable amount of work still remained to bring them to a form which would pass Peter Schweitzer's metadata compiler, *mp*.

A recent announcement from USGS explains improvements over these earlier versions of *document.aml* which include a FILE option output that is close to 100% compliant to the *CSDGM*, modifications to ensure that no metadata is lost in the HTML option output, and several other AML coding enhancements. The SCO has not yet had the opportunity to test this latest release.

#### findarc

*findarc* is proprietary utility from Geographic Designs that helps locate and document Arc/Info and ArcView coverages, GRIDs, shapefiles, projects, and workspaces. It searches the current default file system or directory for Arc/Info and ArcView data to identify file owners, state of topology, and projection information. The output is a comma delimited file that is easily imported into ArcView for sorting and querying, or filtered with UNIX tools like grep. For installations with considerable amounts of data in these formats, this software may be a good investment.

#### cns

cns (Chew and Spit, and no, I am not making that up) is a metadata formatter which processes metadata with varying degrees of conformance to the CSDGM into an output which is more compatible with mp. This is especially useful for Clearinghouses (like Wisconsin's) which may collect metadata from source agencies producing metadata differing in format because of the metadata tool or template employed at the each agency, or because the agency metadata profile differs from the CSDGM. cns is the third highly successful metadata tool produced by Peter Schweitzer of the USGS, and will do much to solve the metadata exchange problem discussed in the April Mapping Bulletin.

## NSDI Clearinghouse Developments -Server Software, Query Interface

Until now, most National Spatial Data Infrastructure (NSDI) Clearinghouses have used *freeWAIS-sf* as the server software to answer metadata queries and searches. In the near future Clearinghouses will be switching to *Isite*, a server software developed by the Center for Networked Information Discovery and Retrieval (CNIDR) and based on the more recent Z39.50-1995 protocol. Z39.50 is expected to provide greatly improved searching capabilities on the WWW. A Z39.50 server acts as a flexible interface between query clients and diverse databases behind the server. It excels in providing query access to fielded documents (like metadata with its elements).

The FGDC has targeted a meeting of North Carolina Clearinghouse participants in mid-July to test an installation of *Isite* to serve up metadata as the new NSDI Clearinghouse model. This will be followed up by a public training session on metadata preparation and Isite configuration at the URISA meeting in Salt Lake on July 29. Our expectation is that the *Isite* server will be readily incorporated into the Wisconsin NSDI Clearinghouse because the metadata there is compliant with the CSDGM.

A new search interface which exploits some of the capabilities of *Isite* and Z39.50 is under development by Chuck Stein and others at the Naval Research Lab, Monterey, CA. Some of its features include: graphic map (or manual) spatial search, temporal search, keyword search with booleans, search of specific Clearinghouse servers, and a query builder tool. You can get a look at the proposed NSDI Clearinghouse query interface at http://wwwmel.nrlmry.navy.mil/test/fgdc/slide.html.

## **Programs and Legislation**



Wisconsin in-line for 1998

## National Photography program adopts new schedule

#### by Ted Koch

The Steering Committee of the National Aerial Photography Program (NAPP) recently approved changes to its photo acquisition plan and selected other program policies. NAPP is a federally administered program designed to obtain national aerial photographic coverage, except for Alaska and Hawaii, on a regularly scheduled basis.

## Schedule

Meeting on May 16 in Reston, Virginia, the committee approved a plan to change to a 7-year acquisition cycle from the previous 5-year cycle. Under the new 7-year plan, Wisconsin is now scheduled to be flown in 1998, rather than 1997 which would have been the year under the 5-year plan. NAPP, black and white, 1:40,000-scale, imagery was last obtained for the state in the spring of 1992.

## Funding

NAPP is funded primarily and acquisition priorities are set by four contributing federal agencies, Geological Survey, Natural Resources Conservation Service (formerly Soil Conservation Service), Consolidated Farm Service Agency (formerly Agricultural Stabilization and Conservation Service), and the Forest Service. As before, NAPP will continue to encourage state participation in the program through contributions of up to 50% of the photo acquisition cost. In 1992, Wisconsin contributed \$140,000 toward NAPP which was approximately 35% of the total cost. At present, no in-state contributions have been proposed for the scheduled 1998 Wisconsin acquisition.

Under a funding policy change, the Steering Committee decided that a state which does not provide any matching funds, and for which sufficient federal dollars are not available in the scheduled year, will be deferred only to the next year. Previous policy dictated that a state wait unit its turn came in the next full cycle. Also, in following the previous program, the Steering Committee will continue to contract for 1:40,000-scale statewide coverage in a single year, rather than spreading acquisition over multiple years.

## Airborne GPS

Concerning funding for the acquisition of photo coordinates through the use of airborne Global Positioning System (GPS) technologies, the Steering Committee voted that NAPP will not fund GPS collection. Those agencies or states wishing to acquire and use GPS data for digital orthophoto control applications will have to cover this additional cost.. However, the Steering Committee will seek alternative contracting arrangements for airborne GPS collection, and will pursue evaluating the use, in certain areas, of soonto-be-available 1-meter resolution commercial satellite imagery. Cost-recovery concept may be revived for counties

## Governor vetoes SB 606

#### by Bob Gurda

Governor Thompson has vetoed Senate Bill 606, legislation that would have provided authority for state and local governments to charge a "reasonable fee" for development of customized products from information normally maintained for various government program purposes.



In his veto message, the Governor explained that he was concerned about the potential burden that could be placed on staff in state agencies, which has already been cut in many cases, in order to respond to these types of requests.

In the land information realm, county officials had pushed for this language in order to charge fees sufficient to cover the cost of work, when a person asks for a specific output product that is not normally prepared to meet in-house needs. With the growth of computerized information systems, there are now many potential products that can be generated from that information, whether in the form of lists, tables, charts, graphs, and maps.

Governments in Wisconsin are already required to provide copies of information (at the cost of reproduction) to anyone who requests them, under the aegis of the state's open records law. This applies only to the form in which the information is maintained.

However, value-added products are different than the form in which the agency normally maintains its information, and generating such products represents an additional demand on staff, materials, and equipment.

It appears likely that the language will be revived, probably in a narrowed form so that it does not apply to state agencies. SB 606 passed both houses of the legislature by comfortable margins, and was supported among others by the Wisconsin Land Information Association and the Wisconsin Counties Association.

## Doing business in new ways

### by Ted Koch

On my way to the north country and Minoqua to attend the early June WLIA meeting, I took the time to visit five county land information offices located near the Highway 51 (now also signed as I-39) corridor. When SCO staff travel to various events in the state, we usually make a number of other stops to learn first hand what mapping and land information projects and accomplishments are developing in local government.

For me, these visits have always been enlightening, educational and highly informative. I never ceased to be impressed at the innovation, dedication and enthusiasm that forms the foundation of local GIS/LIS projects.

Often, I learn of some very interesting applications related to new technologies and new data that were not envisioned at all by the counties when they initially planned their modernization efforts. My June visits proved to be no exception to past experiences.

#### Marquette County

At Montello in Marquette County, Jerry Smart, county surveyor, took the time to describe to me the scope of work that the county was undertaking with land information program funds, and the growing interest in the program from county of-



ficials. Marquette's retained fee income is modest, and progress is slower than in some of the wealthier and more rapidly growing counties, but nevertheless their program is taking shape. Indeed, several surprising benefits have already accrued.

In the most notable example, Jerry provided details on how the use of the analytic capabilities of their new GIS system had been applied to help identify the location of a new middle school.

The county was quite pleased with the success of the application. It was quite obvious to me that this was a benefit the county had not envisioned when it started its land information program several years ago.

#### Portage County

From Marquette County, I headed north for a stop in Stevens Point and a visit with Chuck Kell and Norm Bushor in the Portage County Planning and Zoning Department. It turned out that Norm had just returned from the ESRI User Conference in California, and was quite excited about advice he had picked up on making his UNIX work station perform more quickly and efficiently. Both Chuck and Norm discussed their use of digital orthophotos, and demonstrated the effectiveness of this product for a number of their department's applications.

Perhaps the most interesting aspect of my visit was to learn how



Portage County is using its GIS capability to assist in selecting the site for a new county land fill. Building and integrating a variety of data sets, the Planning Department crafted a logical step by step process of analysis. Integrating themes such as proximity to residential and commercial development and private wells, drainage, soils, transportation access and travel times, subsurface geology, etc. a publicly explainable and defensible analysis of locating potential land fill locations was achieved.

Norm pointed out that the GIS approach provided quick analysis when changing various scenarios, allowing them to quickly analyze and present ideas and suggestions offered by the public and county officials.

As an indication of how pleased they are with this application, Chuck commented that the last time the county went through the land fill sitting process it extended for three years. In 1996, with the application of GIS techniques and data, the same process was reduced to several months. What a tremendous savings of time and effort for all involved.

## Extra benefits tell the story

The Portage County land fill example and the Marquette County school example are but two types of the many benefits being accrued from the investments in the land information program. Across the state many more similar examples exist. Become aware of these stories, for they provide a real measure on the value of the program. And, if you know about an GIS application that is in any way notable for its efficiency, effectiveness or benefits, tell others. Tout it to your local officials, the WLIB and your friends in the WLIA. Don't keep these valuable lessons and applications a secret.

## Designed Wisconsin Cultural Map

## Madison student dies on Alaska mountain

#### by Bob Gurda

Late June found Josh Hane and a fellow mountain climber from Seattle trying to conquer a new route up Mount Hunter in Denali National Park, Alaska. Despite earlier successes in attempting particularly difficult routes together, this time both men appear to have died in the process.

Josh had recently completed his Master's degree in Cartography at UW-Madison, and was the lead designer for the forthcoming *Cultural Map of Wisconsin* that we have profiled in these pages (October, 1994). Ironically, we have just received a draft of the map to review, and publication is still slated for this fall by the University of Wisconsin Press.

A native of Colorado, Hane, 28 and his climbing partner, Chuck Drake, 27, both attended Dartmouth College. Reports indicate that they may have been victims of an avalanche as they worked their way up a ravine about half way up Mt. Hunter, elevation 14,573. Earlier in June they had climbed part way up nearby Mt. McKinley to acclimatize themselves to the altitude.

(source: Wisconsin State Journal; Outside On-line)

## To become GIS Manager for Portland

## Glenn Meyer hits the Oregon Trail

## by Bob Gurda

The Coordinator of Land Information Systems for Waukesha County is moving west, to Portland, Oregon. Glenn Meyer will take on a similar position for the City of Portland as GIS Manager. We wish him well!

Meyer, familiar to many people active in the Wisconsin Land Information Association and the Wisconsin Society of Land Surveyors, says that his experiences in Wisconsin were key to landing the Portland job. Glenn's wife is a native of the Portland area. He moved from Madison to Waukesha two years ago, following a 14-year career with Wisconsin Power & Light Company.



#### Plat Review and Boundary Review

## Agencies move programs

A memorandom of understanding has been signed to bring the state's Plat Re-

view Program and its Boundary Review Program into the Department of Revenue. The physical move to DOR's building in downtown Madison is expected to occur this October.

The Plat Review Program, which reviews subdivision and assessor's plats for layout, public access, and survey closure prior to acceptance for filing, has been housed for many years in the Department of Agriculture, Trade and Consumer Protection. The Boundary Review Program, which reviews municipal annexations, incorporations, and consolidations is currently located within the Department of Administration.

Officially both of these programs were transferred from their respective agencies to the Department of Commerce (DOC) on July 1st of this year. However, the physical move to DOC did not happen. The recent memo of understanding now transfers both of these programs to DOR.

#### Moves across country to Seattle

#### Nancy Tosta leaves FGDC

The first staff director for the Federal Geographic Data Committee (FGDC), Nancy Tosta, has left the federal service to take a position with the Puget Sound Growth Management Council. She has been the most visible champion of the National Spatial Data Infrastructure (NSDI), making many presentations across the country, including at the annual meeting of the Wisconsin Land Information Association several years ago.

Last year, Nancy assumed a position as a special assistant to Interior Secretary Bruce Babbitt who had become chair of the FGDC.

In her new position, she will resume being a user of GIS, forecasting growth scenarios for the cities in the Puget Sound area. Prior to moving to Washington, D.C., Nancy was affiliated with the State of California's Teale Data Center.

# National Parks ready to cooperate in GIS development

For this issue, we chatted with Peter Budde\*, GIS Coordinator for the National Park Service representing 13 States and almost 50 national park units. Peter works out of Madison by providing technical support, applications development, GIS and related training opportunities, database development, etc.

You've been in Madison for about a year now. What kinds of challenges do you face in providing GIS support services to the many park units in the region?

Pete-

The variety of challenges is very broad. Not only are the units spread out across a large area, but they differ in size and staff in addition to having different spatial information needs. We are trying to implement GIS for all sorts of uses, from natural resources management to recreation planning to infrastructure management to interpretation.

## Do any of the parks have their own GIS staff?

Pete-

Many of the larger ones do, but most of those...the well known ones, are in other

...mapping and GIS provide a great opportunity for partnering with other organizations that need similar information.

regions. In this region, those few that do have their own staff person take a load off me so I can allocate more of my time to the smaller units. In Wisconsin, we have two people who do quite a bit of GIS work in field units.

Marianna Young is at the St. Croix River Scenic Riverway, headquartered in St. Croix Falls. Jeff Smith is at the Apostle Islands National Lakeshore in Bayfield. I operate out of the Land and Computer Graphics Facility on the UW-Madison, where we are about to hire a full-time support person who will work with the smaller park units in the region.

One Wisconsin park activity that we help support is the Ice Age Trail, although since it is completely within Wisconsin, we are looking at cooperative arrangements to help fund that support from a local organization. The North Country Trail, that passes through northern Wisconsin, also has no specifically designated GIS staff support.

## How do you see park needs for GIS and land information fitting into the larger picture?

Pete-

This is an important thing for us. Especially since most of midwest park units are relatively small, mapping and GIS provide a great opportunity for partnering with other organizations that need similar information over the same general location. We are helping out with funding of some of WISCLAND's initiatives, initially the rural land cover and the Digital Raster Graphics, both of which are of great benefit to us. We are also helping with some of the soil mapping going on in the vicinity of the St. Croix.

# How can other organizations find out what data you have developed?

Pete-

As a federal agency, we are required by presidential order to submit metadata describing our geospatial data holdings. We are well into this process, and are submitting metadata through federal channels that people should be able to locate using the emerging spatial search engines operating over the Internet. We look forward to being to locate other organizations' data in a similar fashion.

Speaking of the Internet, since you are headquartered at the university, you have direct access. How about the many park units that you support? Pete-

They are probably in similar situation to counties and municipalities in Wisconsin. Some already have access and use it daily. Others are just beginning to deal with the issue. When we become all connected, it will make our work much easier.

...we have been able to protect some modest amounts of funds to cooperate with other organizations on data development.

How long do you think it will take for full GIS use to permeate the field units in your region?

Pete-

This is really the same question we could ask of any county, city, or agency. It will happen over a long period, as needs and resources are recognized and linked.

There really is almost no end to the uses we could support with GIS, GPS, remote sensing, surveying, etc. However, resources are a key limiting factor. There have been stories in the national media about the budget problems facing the national parks. We are retrenching throughout the agency.

Despite general budget cuts, I have been pleased that, so far, we have been able to protect some modest amounts of funds to cooperate with other organizations on data development. This is where we can leverage those dollars to produce more than any of us could do alone. With a little bit of this kind of institutional cooperation from everybody, I think we could all be satisfied with the pace of progress.

\*Peter Budde can be reached in Madison at 608/265-3515 Covering parts of east-central Wis.

## USGS publishes 42 revised topo quads

## by Ted Koch

The U.S. Geological Survey (USGS) has recently issued forty-two revised 7.5-minute Wisconsin topographic quadrangles. All are in east-central counties of the state: Brown, Calumet, Fond du Lac, Manitowoc, Outagamie, Sheboygan, Waupaca and Winnebago.

This set of maps represent about 80% of the map sheets slated for revision in two projects in the area. The remaining nine sheets may be available by the end of the year. See the alphabetical listing at right of those available now.

Due to selected redesign of some map symbols, these quad sheets have a slightly different "look" than previously published maps. Most noticeable is the color tint change, from pink to grey, for built-up areas. Also, the distinction between inhabited building vs. uninhabited, i.e. homes vs. barns and sheds, has been dropped, lower classed roads and streets are now single line rather than double line, and the traditional blue "grass-tuft" pattern showing swamps has been redesigned to a larger and tighter pattern that can be visually distracting, particularly over large areas. All of these quads have been produced through the USGS's "digital limited update" process which provides for the conversion to digital data for nearly all information appearing on the quad. Each quad's digital data is ultimately processed into the Digital Line Graph (DLG) format, and is now complete or in production for all quads listed below. The DLG categories of data include boundaries, hydrography, hypsography (contours), transportation, public land survey, vegetative cover, and humanmade features. Names of the revised quadrangles are:

Appleton Bear Creek Bellevue Big Falls Brillion Brothertown Clintonville North Clintonville North Clintonville South DePere Eldorado Elkhart Lake Fahrney Point Fond du Lac Franklin Freedom Green Bay East Green Bay West Greenleaf Greenville Indian Point Kiel Leeman Marytown Morrison New London Nichols Northport Ogdensburg

Oneida North Oshkosh Northeast Potter Reedsville Saint Cloud School Hill Seymour Sherwood Shiocton Symco Valders Van Dyne Waupaca Wrightstown

#### Full state coverage now assured

### DRG funding reaches 100%

#### by Bob Gurda

Recent contributions have been sufficient to complete the production of Digital Raster Graphics (DRGs)\* across the entire state. The final files should now be available by next spring.



Some of the first groups of files have become available in recent weeks. Generally, the northern part of the state, north of 45 degree latitude, is available from the U.S. Geological Survey in blocks of 64 files covering a 1 x 1 degree block. The files for each such

block are placed on a CD-ROM that is available from USGS for \$32 plus a modest shipping charge. Contact the SCO for details on placing orders.

Funding for development of the DRG product across the state was coordinated under WISCLAND, a broad-based cooperative activity working on statewide landscape data set development. WISCLAND is arranging for some modifications to the DRGs as produced by USGS. This work is under way, and distribution details should be available soon; contact the SCO for details.

\*DRGs are scanned USGS topographic maps, in georeferenced TIFF format. See our previous issue for a more complete description of the specifications, the production schedule, and WISCLAND's planned enhancements.

## Questions & Answers

?

How do I determine the magnetic declination that would have existed in 1942 at a site in Sauk County? I have an old site plan that has magnetic bearings, and I want to try to locate it on the ground today.

Current as well as historical data on magnetic declination is available from the U.S. Geological Survey in Colorado. You can get this type of information by telephone at 303/273-8486. Software and data files are available from several Internet sites, also. This is generally the most accurate information that is widely available.

The pattern of the earth's magnetic field as expressed across Wisconsin has definitely changed over the years. There has been roughly a 3-5 degree change in the direction of magnetic north at various points in Wisconsin over the period of about 50 years that you are working with.

For general background on magnetic declination in Wisconsin, the SCO published a free 4-page guide *Wisconsin Magnetic Declination*, four years ago. It includes several maps showing recent and historical patterns from which you could estimate the declination over the last several years at any point in Wisconsin. For more accurate values, or for values farther back in time, you will need to access the data described in the first paragraph above.



I am an elementary-level school teacher looking for basic materials to teach geography and maps to my students. Do you have any suggestions?

A wide range of materials are available from a variety of sources. We carry two items in our office that may be useful to you in the classroom, and in general to parents and children at home. The first is, *Helping Your Child Learn Geography*, a 26-page booklet jointly published by the US Geological Survey and the US Department of Education. The second is, *Exploring Maps*, also published by the USGS. This is a packet of teaching materials on mapping for older elementary and middle school-level students. In addition to providing four different activity teaching guides on map related topics, the packet includes a two-piece, full-color, wall-sized mural illustrating and briefly explaining significant dates in the development of mapping, from 300 A.D. to the present.

Two other USGS publications you may wish to look at are: *Map Adventures*, a packet for grades K-3, which includes a poster, teaching guide, lesson plans and activity sheets; and, *What Do Maps Show?*, a poster and lessons on geography and maps appropriate for upper elementary to middle school level.

All publications may be ordered by calling the USGS at 1-800-USA-MAPS. A summary of other USGS educational materials on earth science topics my be viewed on the Learning Web at http://www.gov/education/edulist.html.



For a drainage study, I need 10-foot contours in digital form. Would it be okay to use 7.5-minute quadrangle digital elevation model (DEM) data to generate the contours?

It is possible; however, you probably will not be happy with the results. Using appropriate software, DEM data can be used to generate graphics showing contours, slope, terrain profiles between points, and other aspects of the landscape. Given that you have the software, and that the USGS 7.5-minute quads in your area have a 10 foot interval, the contours you generate from the 7.5-minute (1:24,000-scale) DEMs probably will not have the same positional accuracy as exists on the original 7.5 minute quad.

Also, the DEM generated contours will probably not have the same visual appeal as the quad image, i.e. depending on the software used, the DEM contour lines are likely to appear rather angular, with noticeable inflection points at bends and curves.

A 7.5-minute DEM is generally not suitable as a source for producing high quality 10' contours because the DEM file lacks sufficient horizontal resolution for capturing many of the smaller changes in the land surface. The DEM file contains a data point (horizontal coordinate pair with an associated elevation value) at a 30 meters (approx. 100 feet) spacing. In certain types of topography, this regular data point spacing will not necessarily contain values at the necessary points of critical elevation change.

Added to this issue of resolution is the fact that most federally produced DEMs in Wisconsin are classed as level 2, which means they were most often derived from data interpolations taken directly from 7.5-minute quad contours. This data can have allowable errors up to one-half a contour interval, and still be within DEM specifications.

Possibly, the best methods available for you to acquire 10 foot contours in a digital form is to electronically scan the contour separation from the existing 7.5 minute quadrangle (separations suitable for scanning can be purchased from the USGS), or to electronically separate and convert contour lines from the Digital Raster Graphics files currently being produced for all quadrangles in the state.

Of course, another approach would be to compile contours photogrammetrically, from appropriate aerial photographs. Depending on the photographs available and the process used, this result could produce high quality contours with a 10 foot interval.

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, pleast let us know.

## Retains look of published paper catalog

# SCO moves aerial photo information to Internet

#### by Hugh Phillips

We are happy to announce that the SCO's aerial photography catalog is now available for searching or viewing over the Internet's World Wide Web. You can link to the online catalog directly from the SCO home page (see page 16 for address).

For several years the hard-copy version of the *Wisconsin Catalog of Aerial Photography* has served as a major reference for aerial photography accomplished over Wisconsin. This several hundred page catalog documents approximately a thousand aerial photography projects from the years 1936-1993. Paper copies are still available for sale from the SCO.



## How it looks on the Web

Like the original catalog, the Web version presents, for each project, the date of photography, the scale, film type, area covered, and where the photography can be viewed and/or purchased. The catalog is arranged by county with cross references to multi-county projects.

The web-based catalog differs from the original in a few aspects, notably hypertext links to the contact information for viewing and buying the photography, updated names for some agencies, and updated contact information. We have also reversed the chronological order of projects, now showing the newest at the beginning of each county's listing..

#### Newer projects being added

Since the original catalog was published in 1993, there have been many additional aerial photography projects carried out over Wisconsin. Jason Laux, a student assistant for the SCO, is performing the research for an update to the on-line catalog to reflect these recent projects. In this work Jason has contacted all of the county Land Information Offices, the regional planning commissions, the major state and federal agencies who use aerial photography, and the Robinson Map Library. Additional information for the update has been provided by aerial photography firms, and we expected to glean more from the latest USGS Aerial Photography Summary Record System (APSRS) release. As a preliminary estimate, it appears that the update will add 40-50 new projects to the existing catalog. None of these are statewide projects, as no such acquisitions have occurred since 1993.

Once we have collected and integrated information on these recent projects, we expect simply to add information on future projects as we collect that information. This way, the on-line catalog will remain up-to-date on the Web. We do not anticipate publishing a new, revised paper catalog; Web browser software typically allows a person to print pages that are viewable as screens, in case anyone needs a paper copy.

# Searching for, and understanding aerial photography

With the catalog now on the web, you can do your own searching to see if aerial photography exists that might suffice to meet a particular need. If you have questions while accessing the new catalog on-line, give us a call and we can bring it up here and be looking at the same information as is on your screen.

As always, you can still contact us for explanation or advice in selecting from several different projects, enlargements, film types, etc. We also may know of aerial photography projects that are planned in the near future. And, if you don't have access to the Internet, we can do a search for you and provide the results back by phone, fax, or mail.

## SCO staff changes

We have had several changes to our student staff in recent months.

Jim Jordan, who worked on the Geologic Mapping guide, the BBS, the forthcoming Parcel Mapping guide, and contributed to the Bulletin regarding aerial photography and remote sensing, will become a Teaching Assistant in the fall for the Geography Department, in preparation for completing his PhD. He is again involved in field work in northwestern Alaska this summer. In Jim's place we have hired John Walkey, a Master's degree student in the Environmental Monitoring Program. John will work primarily on developing our new Internet information services.

We also have a change in our computer support position, with Tom Panasci moving on to a private sector position in Minnesota as he completes his MBA. His replacement will be an incoming Master's degree student in the Institute for Environmental Studies, Jason Freeman. Over the summer, Mike Chien is filling in for us in this position.

Jess Kolb has also begun working for us, for a limited period, implementing a redesign of our management databases that was initiated by Joy Webb.

## **Publications and Products**

## New county plat books

The following 1995 Wisconsin County Land Atlas and Plat Books are now available, for \$25 plus tax and shipping: Columbia, Dodge, Door, Iowa, Jefferson, Oneida, Polk, Sauk, Vernon, Vilas, and Wood Counties. In addition Bayfield County is available for \$50 For ordering details, contact: Rockford Map Publishers, Inc., P.O. Box 6126, Rockford, IL 61125, phone (orders only) 800/321-1MAP; for customer service information, call 815/399-4614.

#### by State Climatologist

### Wind Atlas available

From which directions do the winds tend to blow in Wisconsin each month, and how strongly? The answer to these, and many other related questions, are in a



new 46-page publication by Pam Knox, the State Climatologist, titled the *Wind Atlas of Wisconsin*.

In addition to background information on the causes of winds over the state, there are maps showing "wind roses" for 13 sites in and slightly outside the state. A wind rose is a graphical device for simultaneously illustrating both the direction and strength of winds averaged over a period of time. The atlas contains both an annual average map as well as one for each month.

The atlas is published by the Wisconsin Geological and Natural History Survey (WGNHS) as Bulletin #94. It carries a price of \$10 plus tax (and shipping for mail orders). Contact WGNHS at 608/263-7389 (phone) or 608/262-8086 (fax).

(source: WGNHS)

### Wisconsin Coordinate Systems handbook

The Wisconsin Coordinate Systems handbook, published by the SCO, is a 91-page document containing both general background information on map projections and coordinate systems, as well as specific coordinate system parameters. It is useful to people working in surveying, mapping, CAD, and GIS.

To acquire a copy of this handbook, contact the SCO for an order form. It has a price of \$10.00 plus tax and shipping.

#### From Wis. tourism program

## Biking guide published

Produced as one of its free travel guides, The Wisconsin Department of Tourism has recently published (March, 1996) an attractive 64-page full color



guide to bicycling in the state. The *Wisconsin Biking Guide*, features 14 on-road tours, 14 mountain bike trail systems, and 15 traffic-free touring trails.

All tours and trails described include an attractive detailed map, the distance, difficulty rating, trailhead location, and on-route attractions. Many of the tours and trails also include a small graph depicting the changes in elevation over the length of the route. Produced in an  $8-1/2" \times 10"$  size, the guide is designed to be folded to fit into the map pocket of most bicycle bags. The Biking Guide may be obtained from the Wisconsin Department of Tourism by calling (800) 432-8747.

#### from the Library of Congress

## Geography and Maps Guide published

by Ted Koch

The Geography and Map Division of the Library of Congress has published a rather handsome illustrated guide describing its vast collection of atlases, maps, globes, aerial photographs and digital data. In 84 pages of text and 70 mostly color illustrations, *Library of Congress Geography and Maps, An Illustrated Guide*, highlights the holdings of a collection that functions as the nation's National Map Library.

The guide is designed as a means for a wide audience to become more aware of the Library's large geographic and cartographic collections which ranges from charts and atlases of the 14th and 15th centuries to current digital GIS data.

Currently, the Library houses more that 4 million map sheets, 50,000 atlases, 300 globes, and more than 1.6 million aerial photographs and remote sensing images. An average of 70,000 items yearly are added to the collection through purchase, exchanges, deposits and gifts. The collection serves as a major center for scholarly research relating to cartography and geography.

The new guide costs \$22, and may be ordered by mail from the U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250, or by credit card at (202) 512-1800 (phone) or (202) 512-2250 (fax).

## Annual event is Sept. 25

## DNR to host its GIS Expo again

The Wisconsin Department of Natural Resources is offering its annual GIS Expo again to anyone interested. This event now in its 7th season, will occur on September 25 in Madison, in DNR's state headquarters in downtown Madison's GEF2 office building at 101 S. Webster St.

The Expo is hosted by DNR's Geographic Services Secton. The program includes demostrations from 8-10 am, repeated 1-3 pm. These will be held in From 10am - noon there will be talks in Room 027, supported by slides and overheads.

For specifics on the program, consult the web page at http://www.dnr.state.wi.us/geo/expo.htm.

(source: Wis. DNR)

### Region sets summer gathering

## ASPRS to meet in Houghton, MI

The Western Great Lakes Region of the American Society for Photogrammetry and Remote Sensing (ASPRS) will meet in Michigan's Upper Peninsula August 11-12. The meeting will take place at Michigan Technological University. Non-members are welcome.

The event will begin with a Sunday afternoon picnic on the shores of Lake Superior. Guests may be invited (registrants are covered, others cost additional).

On Monday, there will be a breakfast, technical program, lunch, followed by additional technical sessions or a tour.

Registration is \$20.00 (\$12.50 for students). Contact Gordon MacLean at Rt. 1, Box 84B, Atlantic Mine, MI 49931.

(source: ASPRS)

#### September 25-27 in St. Louis Park

## Minnesota sponsors sixth annual conference

The Minnesota GIS/LIS Consortium will hold its 6th Annual Conference, from September 25-27 in St. Louis Park, a suburban community immediately west of Minneapolis. The conference will feature a variety of workshops, technical sessions, and vendor exhibits. The opening keynote address will be presented by Richard Varn, Director of Telecommunications at the University of Northern Iowa. Varn presented a highly informative and entertaining luncheon address to the WLIA Annual Conference in Oshkosh last March. For more information on the conference, contact The Management Company at (612) 890-5312.

(source: MN GIS/LIS Consortium)

## November 18 in Schaumburg

## Illinois GIS Assocation sets annual meeting

The Illinois GIS Association (ILGISA) will hold its sixth annual "GIS in Illinois" conference at the Schaumburg Marriott (Chicago area), November 18. For information, contact ILGISA, Center for Government Studies, Northern Illinois University, DeKalb, IL 60115, or call 815/753-1906. Registration materials will be available in September.

(source: ILGISA)



Quarterly meeting shifts to northwest

### WLIA set for Hayward

by Ted Koch

The fall meeting of the Wisconsin Land Information Association will be held in Hayward in the northwest part of the state on Thursday and Friday, September 5-6.

The free Thursday evening program will feature a presentation on the next generation of satellite imagery. In the next few years, a number of commercial firms in the U.S. will be launching satellites collecting imagery with a spatial resolution of nearly one meter. World wide, more than 20 countries will be collecting information of very high spatial, spectral, and temporal resolutions. This quality and frequency of data may have implications for local land records activities.

The program will be presented by Prof. Thomas Lillesand, Director, Environmental Remote Sensing Center, University of Wisconsin-Madison, and ERSC staff and students. They will discuss the next generation of remote sensing satellites, their operational characteristics, and application possibilities.

Friday's program, which carries a registration fee covering lunch, will include, in the morning, reports and open forum discussions from six WLIB working groups including the LIO Council, annual surveys, technical support, clearinghouse, plans and integration, and aid to local government. This will be followed with a short presentation about the University Consortium on Geographic Information Sciences from Will Craig, University of Minnesota and UCGIS president.

After lunch and a business meeting, afternoon activities will focus on a report on GIS activities in Northern Wisconsin, and an organizational meeting for presidents of professional associations that work with land records issues.

For more information on the September meeting, contact the WLIA at 800-344-0421.

## Selected\* Conferences, Technical Meetings, and Classes

August 4-9, 1996, Multispectral Imaging for Terrestrial Applications will be held at the Denver Convention Center, Denver, CO. Contact: John Smith at 360/647-1445.

August 11-12, 1996, American Society for Photogrammetry and Remote Sensing Western Great Lakes Region Summer Meeting will be held at the Memorial Union, Michigan Technological University in Houghton, MI (for registration, see page 14).

August 13-14, 1996, **Introduction to ArcView 3** will be held at the Land Information and Computer Graphics Facility (LICGF) in B102 Steenbock Library, Madison, WI. Contact: Tom McClintock at 608/263-5534; fax: 608/262-2500; email: mcclinto@macc.wisc.edu.

August 16-18, 1996, American Information Systems 1996 Americas Conference will be held in Phoenix, AZ. Contact: Andy Philippkis at 602/965-5134, fax: 602/965-8392, email: philippakis@asu.edu.

August 18-20, 1996, AM/FM International 1996 Executive Management Symposium will be held at the Hyatt Regency Hotel, Hilton Head Island, SC. Call: 303/337-0513, fax: 303/337-1001, email: amfinintl@aol.com.

August 20-21, 1996, Wisconsin Land Information Board's Annual Strategic Planning Session will be held in Madison, WI. Contact: WLIB at 608/267-2707.

August 20-22, 1996, **Pecora 13 Symposium** will be held at the Ramkota Inn, Sioux Falls, SD. Contact the Technical Program Chair at 605/594-6040; fax 605/594-6083; email: pecora13@edcserver1.cr.usgs.gov.

September 5-6, 1996, Wisconsin Land Information Association Quarterly Meeting will be held in Hayward, WI. Contact: WLIA at 800/344-0421.

September 11-14, 1996, Florida International Symposium on GIS in Higher Education will be held in Boca Raton, FL. Contact: Jeannie Paugh at 904/942-1900.

September 12, 1996, Wisconsin Chapter of AM/FM International will sponsor a tour of the *Diggers Hotline Operations Center* in Wauwatosa, WI. Contact: Fred Halfen or Tim Barnett at 608/249-0471.

September 14-18,1996, National States Geographic Information Council (NSGIC) will be held at the Doubletree Hotel, Tucson, AZ. Contact: Ammie Collins at 603/643-1600; fax: 603/643-1444; email: nsgic@aol.com.

September 17-20, 1996, **Institute of Navigation (ION) GPS '96 Con**ference will be held at the Kansas City Convention Center. Contact: Dr. Penina Axelrad, Program Chair at 303-492-6872; fax 303-492-2825.

September 17-21, 1996, International Map Trade Association (IMTA) Conference and Trade Show will be held in Denver, CO. Contact: IMTA at 815/939-4627, fax: 815/933-8320, email: map-trade@aol.com.

September 22-26, 1996, **32nd Annual Conference & Symposium:** "GIS and Water Resources" will be held in Fort Lauderdale, FL. Contact: American Water Resources Association at 703/904-1228.

September 25-27, 1996, Minnesota GIS/LIS Consortium Conference and Workshops will be held in Minneapolis, MN. Contact: the Management Co., Inc. at 612/890-5312, fax: 612/890-3738, email: gislis@lmic.state.mn.us.

October 2-4, 1996, **Trimble '96 Surveying & Mapping Users Conference & Exposition** will be held at the San Jose Convention Center. Contact: 408-481-8465; fax 408-481-8488.

October 2-5, 1996, NACIS XVI will be held at the Menger Hotel in San Antonio, TX. Contact: Michael P. Peterson at 402/554-4805; fax 402/554-3518; email: geolib@cwis.unomaha.edu.

October 16-19, 1996, 19th Annual Applied Geography Conference will be held in Kansas City, MO. Contact: John Harrington Jr. at 913/532-6727, fax: 913/532-7310, email: jharrin@ksu.ksu.edu.

October 21, 1996, Fourth Annual Geographic Base Information System (GBIS) '96 Conference will be held in Edmonton, Alberta, Canada. Contact: Glenn Ritchie at 403/496-6703, fax: 403/496-6747, email: gbis@wnet.gov.edmonton.ab.ca.

October 28-31, 1996, A/E/C Systems Fall will be held in Orlando, FL. Contact: Pat Smith at 800/451-1196, fax: 610/458-7171.

November 4, 1996, Wisconsin Land Information Board Meeting will be held in Madison, WI. Contact: WLIB at 608/267-2707.

November 12-14, 1996, International Conference on Land Tenure and Administration will be held in Orlando, FL. Contact: Prof. Grenville Barnes at 352/392-4998; fax: 352/392-4957; email: GBARN@CE.UFL.EDU.

November 14, 1996, Accessing & Using Wisconsin GIS Data Sets will be held at the Land Information and Computer Graphics Facility (LICGF) in B102 Steenbock Library, Madison, WI. Contact: Tom McClintock at 608/263-5534; fax: 608/262-2500; email: mcclinto@macc.wisc.edu.

November 16-22, 1996, ACSM/ASPRS Fall Meeting and GIS/LIS '96 will be held at the Denver Convention Center, Denver, CO. Contact: GIS/LIS at 301/493-0200; fax 301/493-8245.

November 18, 1996, GIS in **Illinois '96 Conference** will be held in Schaumberg, IL. Contact: Carol Zar at 815/753-0927.

December 5-6, 1996, Wisconsin Land Information Association Quarterly Meeting will be held at the Concourse Hotel in Madison, WI. Contact: WLIA at 800/344-0421.

## 1997

January 22-24, 1997, Wisconsin Society of Land Surveyor's Institute Convention will be held at the Holiday Inn in Stevens Point, WI. Contact: Mike Roach at 414/496-6787.

March 4-7, 1997, 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.

March 25-28, 1997, **AM/FM Annual Conference** will be held in Nashville, TN. Contact: AM/FM at 303/337-0513, fax: 303/337-4001.

April 1-5, 1997, **AAG Annual Conference** will be held in Ft. Worth, TX. Contact: Kevin Klug at 202/234-1450, fax: 202/234-2744, email: gaia@aag.org.

April 6-13, 1997, ACSM/ASPRS Annual Conference will be held at the Washington State Convention and Trade Center in Seattle, WA. Contact ACSM at: 301/493-0200, fax: 301/493-8245.

June 23-27, 1997, **18th International Cartographic Conference** will be held in Stockholm, Sweden. Contact: Jean-Phillippe Grelot, International Cartographic Assoc., 136 bis Rue de Grenelle, 75700 Paris, 07 SP-France. Fax: +33-1-43-98-8-00.

July 20-24, 1997, URISA Annual Conference will be held in Toronto, Canada.

\*For much more extensive and/or more current listings, grouped into Foreign, National, and Wisconsin, consult the SCO's BBS (see p. 16)

## 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 (608/262-3065), 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 homepage...

We maintain a "homepage" on the Internet world wide web. We encourage those of you with Internet access and browsing software, i.e., Mosaic or Netscape, to check out the SCO's homepage at *http://feature.geography.wisc.edu/sco/sco.html* 

## About the WISCLINC homepage...

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.

## About our BBS...

The SCO has an electronic bulletin board system (BBS), as another means of making information available. You can use it to browse standard information, check on late-breaking news and upcoming events, download copies of our files and free software, and interact with other BBS users on various mapping-related topics as they emerge.

Our BBS number is 608/265-2807, and your modem settings need to be N, 8, 1; the modem on our end operates up to 14.4K baud. Don't try calling the BBS directly from your telephone!! If you need help getting started, contact us at 608/262-3065.

## 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 September 20, 1996.

Editor: Bob Gurda Illustrations: Brenda Hemstead Desktop publishing: Brenda Hemstead Mailing: UW-Extension Bulk Mail

Please send all comments, corrections, and news items to:

State Cartographer's Office Room 160 Science Hall 550 N. Park Street Madison, WI 53706-1491 phone: 608/262-3065 fax: 608/262-5205 bbs: 608/265-2807 email: sco@facstaff.wisc.edu State Cartographer's Office Univ. of Wisconsin-Madison Rm. 160 Science Hall 550 N. Park Street Madison, WI 53706-1491

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