



Wisconsin MAPPING BULLETIN

DOA reorganizes State land info functions

Blaska appointed WLIB/WLC Executive Director

Heads Office of Land Information Services

From a diverse set of six finalists (See the April, 1998 issue of the *Bulletin*), J. Michael Blaska has been selected as the new executive director for both the Wisconsin Land Information Board and the Wisconsin Land Council.

Blaska, a former dairy farmer, has a long record of local government experience, including continuous service on the Dane County Board since 1986, two terms as county board chair, and ten years on the Town of Sun Prairie Board.

A 1972 graduate of UW-Platteville, Blaska lives in the Town of Sun Prairie. He officially began his new duties on June 1.

(source: DOA News Release)

by Ted Koch

Wisconsin is poised to enter a new era in the organization and management of state land information services. Due to a number of recent and forthcoming events, significant changes will occur in the focus and coordination of the state's various land information programs.

Heading the list of events is the announcement on June 1 by Mark Bugher, Secretary of the Wisconsin Department of Administration, that Michael Blaska (see sidebar) has been selected to manage state government's land information-related programs. In this role, Blaska will head the DOA's new Office of Land Information Services which includes being the Executive Director of both the Wisconsin Land Information Board (WLIB) and the recently created Wisconsin Land Council (WLC). For details on the council's membership and duties, see the previous (April, 1998) issue of the *Bulletin*.

WLIB & WLC to remain separate

Speaking before the early June quarterly meeting of the Wisconsin Land Information Association, Secretary Bugher also emphasized his intent to continue the WLIB as a distinct program as the WLC starts business, and into the fu-

ture. This issue was a source of lively debate in 1996 and 1997.

Three functions to move over

In addition to the board and council, the Office of Land Information Services will inherit the existing state government operations of Plat Review, Municipal Boundary Review, and the DOA GIS Services Center.

The Plat Review office, which is currently attached to the Department of Revenue, but physically located within the Department of Agriculture, Trade and Consumer Protection, is one of the state offices having the authority to check and approve compliance of land subdivisions of five or more parcels. Municipal Boundary review, currently housed within the Department of Revenue, analyzes legal compliance in the creation of new municipalities and land annexations proposed by existing municipalities.

Office reports to DOA Secretary

In a significant change that may allow land information issues to more easily gain a higher profile in state government, the new Office of Land Information Services will be

continued on page 2

Highlights of this issue....

| | |
|--|-----------|
| <i>Clearinghouse connection</i> | <i>5</i> |
| <i>Guest Interview with Paul Tessar.....</i> | <i>8</i> |
| <i>Terraserver shows ortho photos.....</i> | <i>13</i> |

WLIB News

by Ted Koch

The Wisconsin Land Information Board last met on Wednesday, May 13 in Madison.

The remainder of the 1998 meeting schedule is Thursday, August 20 in Madison, and Monday, November 9 also in Madison. Both meetings will be held at the Department of Agriculture, Trade and Consumer Protection Building on Madison's east side starting at 10:00 a.m.

Board membership

Wisconsin Act 247, signed by Governor Thompson on June 3 this year, adds two new seats to the board, increasing membership to 15.

The first part of the act changes the status of the Secretary of Revenue, or a designee of the secretary, from a non-voting advisory member to voting member. The second part of the act creates a new member category to be "nominated to the governor by a statewide association whose purposes include support of a network of statewide land information systems." It is generally understood that the statewide association intended in the above language is the Wisconsin Land Information Association (WLIA).

Meanwhile, Governor Thompson has appointed Fred Halfen to fill a public utilities/private business category board seat vacated by Mike Hines of Eau Claire. Halfen is vice-president for photogrammetry operations at Ayres Associates in Madison. Halfen is active in a wide range of professional mapping and information associations.

New administrative rule for grants

Much of the Board's May 13 meeting was devoted to discussion of preparing a new administrative rule to guide the local government grants process from 1999-2003. It is the board's goal to have a new rule in place by July, 1999.

Meanwhile, the WLIA is preparing its recommendations for the grant program. Their final recommendations were expected to be presented to the Board in mid-July.

Memorandum of Understanding

Included in last year's legislation establishing the Wisconsin Land Council was the requirement that the WLIB enter into a Memorandum of Understanding (MOU) with the WLC for the purpose of avoiding duplication of activities. The WLIB Executive Committee has prepared a 5-page draft MOU that covers the relationship between the DOA, WLC and WLIB. This MOU will be reviewed by the WLC at its July 30th meeting.

continued from page 1...

DOA reorganizes State land info functions

attached directly to the Secretary of the DOA, and not placed within one of its nine administrative divisions. Formerly, the Executive Director and staff of the Wisconsin Land Information Board were located within the Division of Technology Management.

Staffing of the new office will total 17.5 positions: the Executive Director, 7 new positions to be shared between the WLIB and WLC, 5.5 existing positions from Plat review, 2 existing positions from Municipal Boundary Review, and 2 existing positions from the GIS Services Center. Once the necessary moving and setup logistics are completed, operations of the Office of Land Information Services will be housed at 17 South Fairchild Street in Madison. The WLIB is currently at that location.

Land council to begin meeting

Meanwhile, as the new Office of Land Information Services takes shape, the first meeting of the WLC is scheduled for Thursday, July 30. Agenda issues for the first meeting include election of officers, review of council legislation, an overview of the work of the Strategic Growth Task Force and Interagency Land Use Council which recommended the creation of the WLC, review of draft memorandum of understanding between the DOA, WLIB and WLC, discussion of long range strategic direction, a public comment period, and setting future meeting dates.

Table of Contents

- *State land info functions* 1-2
- *WLIB news* 2
- *State Cartographer's Commentary* . 3
- *SCO staff news* 4
- *Clearinghouse Connection* 5
- *SCO website update* 6
- *Federal news* 7
- *Guest Interview* 8
- *"Q&A"* 9
- *People & Organizations* 10
- *Statewide data developments* 11
- *Publications & Products* 12
- *Internet Feature* 13
- *Events* 14
- *Calendar* 15

What should be the standard for public data?

User access . . . a continuing question

by Ted Koch

Following a recent phone conversation with a GIS manager in another state, I was reminded of the many aspects related to our continuing struggle with the creation, maintenance and distribution of GIS/LIS data.

An atypical private/public approach

The person I was speaking with relayed to me a data plan recently proposed to them by a private company. In this plan, the company was contracting with a group of counties to prepare high resolution digital orthophotos. To get this data into the hands of state agencies, the company was proposing that it would perform any required reformatting of the images for the state's natural resources agency at a cost that is only 1/3 of what that the agency had been paying up to that point for similar products

Under this proposal other state agencies could buy additional images for their use, at about 3% of the first agency's cost. To comply with the State's open records law(s), state agencies would be allowed to display for viewing only, the data via the Internet. However, no down-loading or other types of distribution would be permitted. The private company would retain all rights to further reproduction and sale.

My telephone partner said this proposal had all the looks of a solid idea, that even the State's lawyers thought it looked very sound. Particularly within government this isn't our usual view of the production and distribution of "our" data.



WLIP explicitly addresses public access

In Wisconsin's Land Information Program (WLIP), one of the original eight foundational elements is "public access arrangements." WLIP land information modernization plans from local and state government agencies require an explanation of the strategy for providing public and private access to the various records and data.

In complying with this requirement, agencies struggle with data distribution policies. Should data be available freely to others, or should reproduction costs and/or the cost of data creation be collected from users? What about restrictions on certain types of uses, licensing specific uses, or collecting royalty fees? All difficult policy questions, for which there seems no clear answers depending on your philosophical leanings.

Clearinghouse will make issue more visible

Within the next 18 months or so, the WLIP, through the Land Information Board and the Land Council, will be investing significant effort into further development of an Internet-based land information clearinghouse. The clearinghouse is a place to find data, understand what the data is about (through meta-data), and hopefully, a location to view

and acquire the data if appropriate to a user's needs.

Just how much actual GIS-related data will reside on the clearinghouse site remains to be determined. Certainly, Internet technologies allow the linking to many diverse locations, so although the searching may be performed on one server the information itself can be scattered on a series of remote, but linked servers.

However, an issue to be faced—and clearinghouse development will bring this into sharper focus—is whether potential data users have appropriate access to government produced data. And to what extent do restrictions on data availability, such as costs, or copyright/licensing, limit appropriate public access?

The work to be done in the next several years on the clearinghouse should help provide some enlightening answers. Those answers should provide the basis for more solid policy on public data access in Wisconsin.

Uses USGS data and available software

SCO student staffer crafts winning map

by Bob Gurda

Each spring the University of Wisconsin-Madison's Geography Department recognizes both a graduate and an undergraduate student with the Barbara Petchenik award. This award is given to the creator of the best map made during the previous school year.

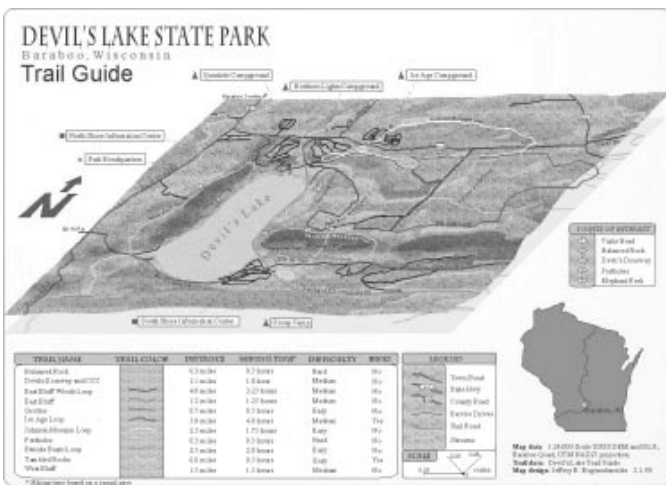
Any student's map may be submitted. A panel of four professors including: Phillip Muerhke, A-Xing Zhu, David Woodward, and James Burt, choose the winners from among this year's entrants.

This years winners were Juliet Landa for the graduate map and Jeff Bogenschneider for the undergraduate map. Both winners were students in David Woodward's Cartographic Design course.

Jeff Bogenschneider was a student employee with us at the SCO until his recent graduation. His winning map is a three-dimensionally rendered trail map of Devil's Lake State Park.

Jeff started his map by overlaying a USGS Digital Line Graph (DLG) on top of a corresponding USGS 1:24,000-scale DEM of the Baraboo quad. He then made a perspective view of the subject area and brought the resulting image into illustration software where he applied eight shades of a textured fill to recreate the shaded relief in a manner that suggests a tree covered landscape. As a final touch he traced trail routes and other features from the DRG for the same quad.

The USGS data Jeff used is available online from the USGS' Geodata online server. Jeff also used a freeware program called MicroDEM to overlay the DLG lines and make the perspective view for the map.



Legislative action started it all

SCO begins 25th anniversary

by Bob Gurda

The summer of 1973 brought some new language to the Wisconsin Statutes, words that created the position of the state cartographer.



That action by the legislature, and signed into law by the Governor Patrick Lucey, culminated an extended effort by Professor Arthur Robinson of the UW-Madison's Geography Department.

After previous attempts had yielded no results, Robinson turned to a summer cottage neighbor who at the time was the Speaker of the State Assembly: Norman Anderson, the representative of an east-side Madison district. Together they worked to create the brief language that brought our state a new function.

It would be another year, however, before the machinery of government and the university could create a position, advertise, interview, and ultimately select a person to fill the job. That's when Art Ziegler arrived in Madison to set up shop. The UW-Madison campus has since housed the state cartographer, and formed the State Cartographer's Office to support that mission.

Anderson, whose legislative career ended not much later, continued to be active in areas related to cartography. He has for many years served as a lobbyist for the Wisconsin Society of Land Surveyors, amongst other clients.



A few changes, and more on the way

SCO student mix changes again.

by Bob Gurda

We'll soon be saying goodbye to Jeff Bogenschneider who has been with us in an undergraduate student position since the spring of 1997. He has worked on a wide variety of projects here, most notably the section on our web site explaining digital elevation models (DEMs). Jeff earned his Bachelor's degree in Cartography & GIS in May.

Kate Giblin is our newest hire. A double major in Anthropology and Art History, Kate is putting most of her efforts this summer into helping with the overhaul of our web site.

With funds likely forthcoming from the Wisconsin Land Information Board for enhancing our clearinghouse work, we expect to be augmenting our base staff over the next several months.

Clearinghouse Connection



Take a bite o' WISCLINC

by AJ Wortley

Mmmm, a cool refreshing clearinghouse treat. Wrapped in delicious metadata with that chewy data center, who could resist diving into the WISCLINC website on a sweltering summer afternoon?

Easy to open, easy to digest, these are all things we're looking for at WISCLINC, and success will be the sweetest reward of all. So what are we doing to enhance WISCLINC and make it a standard on everyone's plate? First, a look at what's inside...

Mounds of metadata

Metadata, metadata, and more metadata. We just can't get enough of it. Metadata is the key to tasting the possibilities of a truly spectacular clearinghouse. Sure, past bites may have chipped a tooth or two but it's getting smoother as we go.

We now have almost fifty metadata sets at the WISCLINC site. And we're cooking up a renewed emphasis on gathering local-level data documentation in addition to statewide metadata to balance out our diet of metadata intake.

In addition, watch for upcoming taste-tests of an on-line metadata entry system and some recommended software templates as we try to standardize our recipe for metadata contributions.

Need a recipe first?

Are you still not totally comfortable with the idea of what metadata is or how to begin thinking about cooking up a batch? There's help out there. Hugh Phillips, former State Cartographer's Office metadata chef, has pointed out a website of interest entitled *Metadata in plain language*. You can link to this site through WISCLINC where you'll find a variety of helpful metadata resources for that late-night snack.

No one ever said biting into metadata was going to be like eating the whole box of chocolates but take a nibble and experience the sweet rewards inside.

Packed with chewy geospatial data

Data is satisfying. But rather than walking down the hall to the vending machine, get your data right off your desktop! That's our goal, anyway.

Currently, we have almost twenty geospatial data sets available on WISCLINC, provided by variety of state and federal agencies. From crunchy soil data to smooth, creamy transportation and refreshing water resources, we're not leaving anything out. Watch for downloadable DEMs to become part of the concoction in the coming months.

The data is primarily statewide now, but again we're looking to improve the balance by laying out the long awaited local smorgasbord. The local data kitchen will begin primarily with Arc/Info shapefile data from the DOA but we're always open to outside ingredient contributions and will be pursuing these avenues *soon*. Are we tempting your tastebuds yet?

WISCLINC to be re-wrapped

As with any product changing with the times, the ever-improving WISCLINC site will undergo some packaging modifications. We're looking to change some of the look and navigability of WISCLINC along with some of its functionality so that it melts in your mouth.

Still present will be the links to other data kitchens in Wisconsin as well as cookbooks of state agencies, on-line references, metadata resources, and a calendar of land information of events. These will eventually be incorporated into our new wrapper design. Watch for improved accessibility, a section on what's new in the clearinghouse and other new ingredients.

It looks great, but how does it taste?



As technology rolls forward and affects our cooking processes, we're looking at updating the functionality of WISCLINC. In the near future, we intend to convert our original free WAIS-based search engine for metadata to the latest taste sensation: Isite.

The Isite interface provides improved flexibility in searching for keywords and provides the capability for eventually saut ing up a graphical search interface. As our volume of data sets increases we'll also be expanding to include more than one index for finding on-line data.

So go ahead... take a bite

Of course, all these changes in our recipe won't take place overnight, but go ahead and surf over to WISCLINC and try a taste of what's on the shelf in the fresh-baked goods aisle.

The URL (Internet web address) is on page 16 of this newsletter, or connect to WISCLINC through the SCO website.

If you're not satisfied with the offerings or packaging, drop us a line and let us know your suggestions. And then keep coming back because it's liable to taste a little different each time. In the end, you'll be glad you did.

.....SCO Website Update

Making navigation easier as contents grow

SCO web site gets strategic redesign

by Haidy Ear-Dupuy

The SCO web site is undergoing a facelift. After roughly two years of existence (which is really old in computer/Internet age), the SCO website is ready for a change. Our web team is busy planning, editing, and changing the look of the SCO site. The aim of the changes is to facilitate navigation and update all the information regarding SCO and our activities.

Our new home page will have **frames** to separate the index from the information. The title to each category will be short and direct. We're also working to re-categorize our index in order to give you access to information with minimal navigation. However, text that explains the categories in more details will still be around, just a click away, if you're interested in reading more about each topic.

References and mega-links

Perhaps the most useful addition to our site will be the **reference section**. Here, you can access our helpful subcategories of address book, glossary of terms, list of acronyms, as well as web links.

The section seeing the most change is the SCO Address Book. We are **linking** to this resource **from various parts of our site**. From this listing of outside contacts, you can decide whether to call, write, visit (or surf the web to) a wide variety of public and private sector organizations active in mapping and GIS. We've added more addresses, re-organized the categories and soon we will include a description of each organization's relevance to mapping in Wisconsin.

What does that term or acronym mean?

One of the newest additions to our site is lists of terms and acronyms, along with their explanations. This section will be continually updated. Here you will be able to see brief descriptions, and in many cases have the option of linking to additional detail including questions and answers.

Looking for a simple map on the web?

While searching for simple maps, our web team tested various search-engine sites such as Yahoo, MapQuest, and Infoseek to see how they fare against each other. Infoseek uses MapQuest maps to generate street maps. While Yahoo is good at locating places in large cities, small town identification is not nearly as accurate. However, through Yahoo, we were able to get good maps for states.

After some testing with specific addresses, we've found that **all three sites are accurate at locating addresses that are older than four years**. New addresses created by development in recent years might not show up. On the whole, locating large cities and addresses are less of a problem than that of small towns.



We will continue to look for good map sources.

Our team is constantly browsing for good mapping sites. If you have ideas for links or approaches that others might benefit from, please do not hesitate to email through the address on our web pages. We appreciate any feedback you can provide!



Cool sites make for "Hot Links"

Visit the CIA; understand your project(ion)

by Haidy Ear-Dupuy

We encourage you to check our "Net Catches" section, soon to be called "Hot Links", for especially interesting sites to visit on the web.

Inquisitive people who always wanted to know obscure information about other parts of the world would be glad to know that there is a site out there in cyberspace where the information is only a click away. The CIA's Map Publication site has information from ethnolinguistic groups of Afghanistan to wallcharts of the governmental structure of Vietnam. All the maps and charts of countries from A to Z are for sale through the website. Check it out on our website's "Net Catches" section.

While you are browsing through our "Net Catches" visit the *Matching the Map Projection* site. It features publications of the Cartography and Geographical Information Society (formerly the American Cartographic Association). Various articles describe the problems with projecting a spherical image such as the globe into a flat two-dimensional maps.

26 states now participate

Partners continue dialogue with FGDC

by Bob Gurda

A majority of the states along with several national associations are now formal partners with the Federal Geographic Data Committee (FGDC). The most recent meeting of these groups with the FGDC was in June in Washington, D.C.

The June meeting was the fourth going back now over 18 months. The discussion topics are becoming more focused, and actions items more specific as a result.

Connecting people, programs, & ideas

For instance, the partners have requested that FGDC support short-term feasibility studies to determine how best to organize and distribute useful information on partnerships that can help build the National Spatial Data Infrastructure (NSDI). One component would be a handbook of advice and examples on how to start and maintain partnerships; this would be either printed or on CD-ROM, or both, and perhaps offered over the Internet's World Wide Web.

Another component would be an web compendium listing people and programs across the country involved in building the NSDI—essentially an “NSDI Yellow Pages.” Such a directory could have embedded links leading to a multiplicity of related web sites. The goal is to build a structure so that each group in the distributed community could maintain its own small piece of this information, but the entire mass of information could be searched globally.

Test bed projects

The partners also have been advocating that federal agencies participate in “test bed” projects. The goal is to change the traditional way of mapping and developing geospatial data to involve all levels of government from the beginning of a project.

The objectives include developing performance measures so that the results of the test bed projects can be used to design modernized models of cooperation. Another objective is to develop long-term partnerships to maintain the databases.

NSDI development funds on the horizon?

Movements are afoot to identify federal funds that can be matched with local/state resources to accelerate development of thematic layers of the NSDI. Several pilot projects will be funded this summer to illustrate how local and federal agencies can share in the burden and benefits of building or improving geospatial data and applications.

This initiative is also designed to help equip local federal offices to better use databases that are equally valuable for local governments. That objective itself is a departure from the past when federal agency needs were most often seen as different from local governments. What has become clear is that

many federal programs in fact need the same or very similar data as local governments.

In the upcoming months state and local governments will have an opportunity through the FGDC partners to help steer the discussion on this initiative so that if it is funded it will in fact produce broad benefits.

NAPA discussion slows

In our January '98 issue we reported on the recommendations of the National Academy on Public Administration. The FGDC and its partners discussed that report earlier this year. At the more recent June meeting, further discussion was deferred pending the annual meetings of the National Association of Counties and the National States Geographic Information Council.



Metadata & positioning get updates

FGDC adopts more standards

by Bob Gurda

At its June meeting, the Federal Geographic Data Committee approved two new standards, although each is actually based on earlier work. The existing standard on metadata was enhanced, and the venerable National Map Accuracy Standards (NMAS) were wrapped into a larger context.

Metadata gains flexibility

The *Content Standard for Digital Geospatial Data, Version 2* differs from its predecessor by now including the flexibility to accept user-defined metadata elements, by establishing guidelines for creating customized profiles, and by refining production rules for implementation. The new version is compatible with the original standard.

NMAS moves into the digital age

The new Geospatial Positioning Accuracy Standards is in three parts: Reporting Methodology; Standards for Geodetic Networks; and the National Standard for Spatial Data Accuracy (and update to NMAS which has been in the works for a number of years).

More standards on the horizon

To date, the FGDC has adopted 7 standards, and 22 are in various stages of work. Following the unanimous votes on the two newest standards, FGDC Chair Bruce Babbitt observed that “...this is not glamorous...but it is the stuff of governments that integrate upward into something that has lasting value for us all.”

Find copies on the web

FGDC's web site (look in the SCO's new Address Book for the URL link) has the new standards available for download.

Looking back while heading west

an interview with DNR's departing GIS leader

As announced on page 10, Paul Tessar has left Wisconsin for Colorado. Just prior to his departure, we asked him to offer his perspectives on GIS in Wisconsin.*

As you are about to leave Wisconsin, what at DNR is the latest accomplishment?

Paul-

After several years of building our data, staff, and infrastructure in Madison, we are about to roll out a major regional deployment. It is called "RegView", and includes a wide range of Region-specific GIS layers, training and an ArcView project with basic applications so that users can become fairly self sufficient.

We are also providing a similar data/application bundle to Regional Planning Commissions (RPCView) for their areas of interest, in support of their land use planning efforts. Also, there is a budget request in process to place a GIS Specialist in each of

The single most enduring problem I've seen in GIS development within organizations is strategic vision

the Regional Offices, who will be responsible for supporting Regional Office and field users, and working with County LIS Programs.

How far advanced does that seem compared to how things were when you arrived here?

Paul-

We have made a *lot* of progress. We are completing our second generation GIS database, primarily based on 1:24,000-scale USGS mapping and a combination of Federal- and County-produced Digital Orthophotos. We have progressed from 386/16 computers to very fast, advanced UNIX servers. And there is a shop full of very capable people working on projects funded

by agency programs as well as some outside partners.

What remains as the key impediment to moving forward?

Paul-

I'd say that the single most enduring problem I've seen in GIS development within organizations is strategic vision. I mean this both in the long term, such as making

We have achieved a level of political unity, beyond what most other states have.

continuous strategic investments in well-designed databases, as well as the short term, where strategic opportunities need to be seized before they evaporate.

GIS is a corporate resource, so the long term vision needs to go across the whole organization, from top to bottom, and horizontally across programs. I've enjoyed broad support within DNR for many initiatives, particularly from Department Leadership, but it hasn't been universal. Similarly, the overall bureaucracy in large organizations too often stifles creative partnerships; again, these are generic problems that affect all organizations, but can be particularly troublesome in large ones.

You have worked in state government in several other states, and your tenure in Wisconsin is about as long as the state's Land Information Program. What kind of grade would you give it?

Paul-

Overall, I would have to give the program a solid B. An amazing amount of progress has been made at the County level. We have achieved a level of political unity, especially including local governments that, while not perfect, is beyond what most other states have. I'd have to say an A-would be appropriate for the institutional component.

On the other hand, the lack of technical unity has been most disappointing, and I'd have to rate this area as a C- or even D+. There are too few data standards, and as a result there are many impediments to sharing usable databases across the various units of government.

In particular, the lack of common data models for Foundation Elements is a major missed opportunity for the WLIP. This severely impedes the development of applications which span jurisdictional boundaries.

In fact, I'm puzzled as to why other agencies and private sector data users haven't talked more about this emerging problem; after all, it's no surprise, and the costs will

The lack of common data models severely impedes the development of applications which span jurisdictional boundaries.

be paid for years to come. (Editor's Note - see our July 1992 issue for Tessar's enduring *Guest Opinion* on standards)

At the state agency level, what could shift that issue higher on the agenda?

Paul-

The Land Information Board, or maybe the new Land Council, needs a mechanism to provide incentives for local agencies to work together across boundaries. Maybe if there had been some funding to support statewide integration from the beginning we would have long since begun to reap the rewards of that investment, but I'm afraid many of those horses have already left the barn!

**Paul Tessar led the Wisconsin Department of Natural Resources' efforts in Geographic Information Systems from 1989 to 1998.*

Q: Recently I downloaded some GIS data from a Federal web site, and it came in a format called "SDTS". What format is that?

A: SDTS stands for the Spatial Data Transfer Standard. It is a standard adopted by the federal government, and is intended to facilitate data sharing.

There is a long history to the development of SDTS, going back into the early 1980's. Several groups of people from academic, government, and industry laid the conceptual groundwork. The idea is to have a neutral format into which (and out of which) any proprietary GIS data can be translated while preserving the meaning of the primary information and minimizing the need for separate background information.

In other words, if your application software can decode the SDTS-formatted data file that you downloaded, it should come into your software in fully functional form. The weakness in this mechanism, at least at the moment, is that not all application software has SDTS translator modules.

A convenient feature of SDTS is that it packages together both spatial data as well as metadata describing the data. One weakness of SDTS, however, is that it is not convenient for transferring minor updates to large data files.

In order to make SDTS operative, it is been streamlined into "profiles". Because the standard is so full-featured, all of its capabilities aren't necessary in order to handle a particular type of data. For instance, raster (gridded) data don't need some of the complex data structures required for vector data, so the SDTS raster data profile is a simplified subset of the full blown standard.

SDTS has been formally adopted by the Federal government as Federal Information Processing Standard (FIPS) 173. For further information, visit the SDTS web site which you can find through our web site's new list of acronyms.



Editor's note:

In our previous issue, the **Question & Answer** about orthophotos, we made a potentially confusing typographical error. We wrote "The orthophoto is derived from such a photograph, but it has undergone sophisticated processing to unwrap it, making it geometrically accurate."

Of course, we meant to say "...undergone sophisticated processing to unwarp it..."

Q: I'm preparing to use the WISCLAND land cover digital map when it's published, and am looking for an older map of vegetation for my area that I can digitize to use as a comparison between eras.

A: First, we are happy to announce that the WISCLAND land cover data layer has just been finished, and you can find it for download over the Internet via FTP by visiting the SCO web site. Click on "WISCLAND" on our home page and navigate to the land cover section.

The land cover data is available in two formats: an Arc/Info "grid" file as well as a more generic TIFF file. That same statewide data set is available for a modest fee if you would prefer it on CD-ROM. In either case, it comes along with loads of explanatory information.

As far as historical vegetation information for Wisconsin, Professor Robert Finley produced a map several decades ago that he compiled by hand from written references to trees and other vegetation made by the federal government's surveyors as they laid out the Public Land Survey System in the middle of the 18th century. But, you wouldn't have to digitize that map (quite a chore it would be, too) since the Wisconsin DNR already has that layer in their GIS data library.

Finley's map was published at 1:500,000-scale, and copies are still available from the Wisconsin Geological and Natural History Survey. A detailed explanation of his interpretation process, and of the various major vegetation communities he mapped is printed on the back side of that map.

And, speaking of maps of Wisconsin's vegetation, WISCLAND is preparing to publish a map of 1992 land cover (predominantly vegetation) from its recently completed GIS layer. It will be at 1:500,000-scale and hopefully will be completed late this fall.

A related project is underway at UW-Madison, being a fresh vegetation interpretation of the surveyor's notes using modern approaches. In a couple of years that should be ready, so it looks like you'll have a steady stream of interesting digital vegetation data to keep you busy for some time.

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.

.....People & Organizations.....

Takes county position in Colorado

Tessar heads for the Rockies

by Bob Gurda

Paul Tessar, head of GIS activities for the Wisconsin Department of Natural Resources (DNR), has taken a new position as GIS Coordinator for Boulder County, Colorado. He began there in June.

Tessar had been with DNR since 1989, with previous stops in similar positions in Minnesota, South Dakota, and Arizona. During his 9-year tenure in Wisconsin, DNR's GIS activity and staff have grown several-fold under his leadership. Although his base-funded staff is somewhat larger than initially, the primary growth factor has been as a service bureau for other programs in the agency.



Nurtured land cover mapping

As in both Arizona and South Dakota, Tessar was heavily involved in developing statewide land cover mapping from satellite imagery. In Wisconsin, he spearheaded efforts to use state of the art techniques developed at the UW-Madison to perform computerized land cover mapping.

That project, which is now complete after several years of work, was the initial component of WISCLAND, a cooperative statewide data development effort involving 25 organizations. The actual production work was done within the DNR's GIS program, with funding from both inside and outside the DNR.

Change of scenery and duties

Paul's new position in Boulder will be quite different than here in Wisconsin. He will be the senior technical advisor for dozens of GIS users throughout the county government, and will coordinate overarching GIS development, but will have neither a staff nor large budget to manage.

UW-Madison's Geography Dept. aims for January

GIS certificate program set

by Ted Koch

The beginning of the new year will mark the start of a new graduate certificate program in GIS at UW-Madison. As reported in our previous issue (see April, 1998 *Bulletin*), this one-year certificate program (approximately 20 credits) in "Geographic Information Systems" will begin January, 1999.

Coordinated through the campus' Geography Department, the program will include four core courses in GIS, cartography, and quantitative methods, and two elective courses in cartography and aerial photography/remote sensing. A final project/internship will also be required.

The certificate is intended for students with a bachelor's degree in any of the physical, biological or social sciences or the humanities. The primary goal of the program is to insure that students become successfully grounded in the theoretical basics to make informed use of GIS applications, and to construct new ones.

To receive full consideration, applications for the spring semester beginning in January, 1999 must be received by this September 15. Application deadline for the fall semester, beginning in September, 1999, is April 15. Graduate tuition rates apply.

Certificate application materials may be obtained from the Department of Geography, 384 Science Hall, 550 North Park Street, Madison, WI 53706-1491; phone: 608/262-3861, or through the department's Web page at: feature.geography.wisc.edu/giscertificate



Relocates to Blacksburg, Virginia

Dymond departs Platteville for VPI

by Bob Gurda

UW-Platteville's lead GIS faculty member, Randy Dymond, has taken a position at Virginia Polytechnic Institute, effective this summer. He had developed GIS coursework at Platteville, in the Civil Engineering Department.

We hope that UW-Platteville will be able to retain that faculty position and refill it with someone who can continue offering those same courses.

Latest commercial satellite delay

IKONOS 1 held until late '98

by Bob Gurda

Perhaps reacting to catastrophic launch failures experienced by competitors, Spacing Imaging Corporation has decided to further test its IKONOS 1 satellite. That vehicle includes a sensor designed to deliver high resolution images.

A scheduled launch in late June has been pushed back to later this calendar year. Space Imaging says that its identical satellite, IKONOS 2, is still set for a year-end launch. It wouldn't be surprising, however, if the company would elect to run the first satellite through a long shake-down process after launch before sending its mate up. With two functioning satellites, the company would be able to deliver its freshest imagery with less lag time.

The delay comes on the heels of the total failure of Early Bird 1, a satellite launched by EarthWatch late in 1997 (as we reported in our April '98 issue). It ceased responding to radio signals several days after launch, and apparently hasn't come back to life.

(source: Space Imaging)



Two agencies team up

Early Land Survey records to be preserved digitally

by Kate Giblin

The University of Wisconsin's General Library System is teaming up with the State's Board of Commissioners of Public Lands (BCPL) to build a better and easier way to access historical land information documents from Wisconsin. The goal of the partnership is to scan the field notebooks from the original surveys of Wisconsin, done in the middle 1800's.

These documents were bound in their original handwritten form and are kept by the BCPL in climate and humidity controlled room. They contain 100,000 pages of data on and descriptions of survey and landscape features recorded by the surveyors.

The scanning of the field notes, which is scheduled to begin in August, will be completed in approximately 15 months. When all portions of the BCPL's imaging project are finished, the state's 345,530 land patents, original color plat maps, and the contents of the surveyor's notebooks will be made available on CD-ROM and, eventually, on the Worldwide Web. The logistics involved in making the information available on the Internet are complicated and will probably be the last portion of the project.

Ambitious plans for an access system

The survey information along with plat maps and other cartographic data will be accessible and searchable by Public Land Survey System references. Plans for using a map of Wisconsin

to interface with the data are being developed. By clicking on the map, a user could zoom in and then be offered a choice of several images or data objects related to the specific area. Some information that may be included are the field notes, aerial photography, and plat maps.

As the scanning is completed, the BCPL will be organizing the data on CDs, which will be made available as they are completed. The plat maps, for example, may be made available before other parts of the project are completed.

The major motivation for BCPL embarking on this large multi-year project is to make information available to people who need and want it. As in the past, access will be supported by a small fee, subscription, or charge for CD packages.



Statewide average is 60%; reflights in 1999

NAPP acquisition hindered by weather

by Bob Gurda

This spring's flights over Wisconsin as part of the National Aerial Photography Program (NAPP) were a mixed success. Especially compared to the excellent coverage acquired through Wisconsin's first NAPP flights in 1992, this year was a disappointment.

Areas not flown this year will be put on the schedule for next spring. Although fall photography (after leaves are off deciduous trees) is an option, the low sun angles then are a major problem to producing usable images.

Statewide, NAPP appears to have acquired about 60% of the photos for the entire state. The work is done by private firms under contract with the U.S. Geological Survey.

This spring, not only did cloudiness limit the number of days open for flying, but the contractors were delayed getting to Wisconsin for both weather reasons (in more southern states where they also were working) as well as mechanical problems. Once the persistent cloudy streak ended, we had a sudden warm-up that brought leaves out quickly.

Which areas have 1998 coverage so far?

For Wisconsin there are four NAPP contract areas each extending from the south to the north edge of the state. One of these areas, between 90 and 91 degrees longitude, had only 20% acquired this spring. The other three project areas had 53%, 78%, and 91% acquired.

We expect to have details by the end of the summer on exactly which parts of the state have photographic coverage under 1998 NAPP. In some areas, there likely are complete counties covered. On the other hand, some other areas likely have no coverage at all.

Counties or others who have been considering having new NAPP photos converted into digital orthophotos will have to wait a few more weeks until we know for sure what coverage they have to work with.

Update to 1992 original covers digital versions

SCO publishes “new” Topo Mapping Guide

by Bob Gurda

We have produced a revision to another title in our free topical guide series. This one is a new edition of *Wisconsin Topographic Mapping*.



The revised document is four pages that covers background information and then presents a updated view of map sales/viewing outlets. Its chief new component is discussion of the proliferation of digital products based on USGS topographic maps such as DRGs, DEMs, and DLGs.

The original guide on this subject was 12 pages, and much of its contents are still valid. Both the original and the new guides are also available to download from the SCO web site in PDF format.

Meanwhile, back at the ranch...

At the same time, we are working on major updates to our web site section on topographic mapping, complete with links to information about the digital formats of these popular maps. Look for that work to be completed this summer. We’re also in the process of updating our printed publication on magnetic declination.



National Atlas debuts in new format

by Ted Koch

In 1970, the U.S. Geological Survey published the *National Atlas of the United States of America*. It was a 400-page, oversized, 12-pound collection of maps, that at a cost of \$100 a copy, was primarily purchased by reference libraries and large government organizations. Now, 18 years later, the USGS has placed on-line, the earliest products of the new electronic version of the Atlas intended this time for individuals owning home computers.

The new digital version, in addition to having traditional high quality, small-scale maps, will include national geospatial and statistical data sets indexed in a variety of ways. Also, the Atlas will include software for data display, and map making. In contrast to the printed product, the Atlas can be regularly updated and expanded as new information becomes available. Details on the new *National Atlas* can be found on the World Wide Web at: www.usgs.gov/atlas.

(source: USGS)



Four panels cover entire state

New Wis. biking maps published

by Bob Gurda

The Bicycle Federation of Wisconsin has published a set of 8 new maps that together cover the entire state. These maps help cyclists in a variety of ways by integrating a variety of information to highlight routes most (or least) suitable for biking based on roadway and traffic conditions, as well as to locate bike trails, Rustic Roads, and mountain biking facilities.

The map set breaks the state up into 4 “panels” (one map on each side) covering: South Central/Lake Michigan; Central Section; Mississippi River Valley; and Northern Section. The maps share the same scale of 1" = 3 miles, except for the two northern maps which are 1" = 4 miles. Each panel is folded to a convenient size.

You can purchase any one of the panels for \$3.95, or the set of four sells for \$12.95. To order, call 800/362-4537; various local bike shops also carry these maps.



New county plat books

The following 1998 Wisconsin County Land Atlas and Plat Books are now available from Rockford Map Publishers, Inc., for \$30 plus tax and shipping: Columbia, Green Lake, Juneau, Oneida, Sauk, and Vilas Counties. For ordering details, contact: Rockford Map Publishers, Inc., PO Box 6126, Rockford, IL 61125, phone (orders only) 800/321-1MAP; for customer service information, call 815/399-4614.

Terraserver's a big hit

Orthophotos now on-line

by Ted Koch

It's been plugged in *Newsweek*. Ditto for the *New York Times*. Have you seen it?

We're talking about the web-based "Terraserver" loaded with aerial photo images over much of the nation—including more than twenty Wisconsin counties.

We've visited that web site, and it's impressive. Loaded on a computer known as the Terraserver, the photo images are the digital orthophoto quarter quadrangles (DOQQ) produced through the coordination of the U.S. Geological Survey.

The Terraserver is a creation of Microsoft Corp., and intended to provide general public access to orthophoto images, while at the same time allowing Microsoft and its partners to promote their solutions to handling very large computer data base systems.

Easy to search

To help navigate around the country, there is a map display. Another entry mode is by providing the name of a nearby city. We tried "Chilton" and quickly zoomed in on an image over the Calumet County seat.

To allow speedy display, the images have been sectioned, resampled, and compressed. You can view the resampled image, and download it to your own computer without charge. If you want the full resolution (1 meter) uncompressed image, you can order that by directly linking to a USGS web site (which accepts credit cards).

Currently more than 60,000 DOQQs are on the Terraserver site with more being added as new DOQQs are produced. Look for the Terraserver web site address in the "What's New" section of the SCO web site.

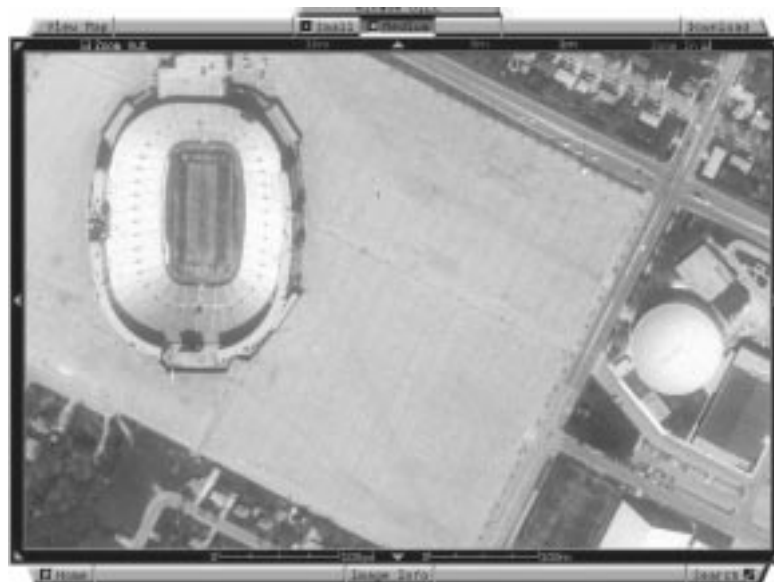
(source: USGS)



Question:
What city is the county seat of Brown County?



Hint:
It has a well known outdoor sports facility near the banks of the Fox River.



Answer:
And here we're zoomed in to Lambeau Field, in Green Bay.

.....Events.....

Quarterly meeting set for Sept. 9-10

WLIA to visit Mishicot

by Brenda Hemstead

The fall meeting of the Wisconsin Land Information Association will be held at the Fox Hills Resort & Conference Center on Wednesday and Thursday, September 9-10.

Workshop & free seminar

On September 9th, plans include a workshop from 9:00 am to 3:00 pm on "Process Redesign and Information Technology Implementation—Making the Most of the Modernization Process". This workshop will provide an overview of process, work-flow and data-flow redesign. Other topics include team work, leadership, business process redesign and process improvement principles. The registration fee of \$50 includes lunch.

Scheduled for 7:00 pm Wednesday evening is a free seminar featuring presentations and discussions from both "On Common Ground" and "1000 Friends of Wisconsin" explaining how they interact with other associations, such as the WLIA, and their constituents, how they use land information, etc. Both organizations are very involved in the debate on land use in Wisconsin. This seminar is open to the public.

Program updates & roundtable discussion

Thursday's events begin at 9:30 am (\$20 registration includes lunch) with land information program updates and a roundtable discussion on "Public Records". Topics will include: what is a public record, privacy, pricing, distribution, accessibility, cost recovery, and handling citizens requests.

After lunch and a short business meeting, a new technique of processing parcel and street centerline files will be presented. Also, an overview and discussion of the WLIA Parcel Mapping Task Force's proposed parcel mapping standard will be outlined for members' comments.

To register or for further information on WLIA, call 800/344-0421, or visit their website at: www.execpc.com/~olio/wlia.

Ninth year and running...



DNR to host another GIS Expo

Mark your calendar for the morning of Thursday, October 1 for the 1998 edition of the Wis. Department of Natural Resources' GIS Expo. Anyone is welcome to attend.

Hosted by DNR's Geographic Services Section, this year's Expo will again be organized as a series of live demos conducted by staff on the 8th floor of the GEF 2 office building in downtown Madison. These will run continuously all morning.

For details on the topics that will be covered in the demos, visit the Expo web page which is accessible through the SCO's website Calendar of Events.

To meet concurrently with AAG's West Lakes Division

Wis. Geographical Society eyes Madison

by Bob Gurda

At the end of October, two regional organizations of geographers will meet together in Madison. The Wisconsin Geographical Society is holding its 52nd Annual Meeting, and will be joined by the American Association of Geographers' West Lakes Division's 49th Annual Meeting.

These groups will meet October 29-31. Events kick off with a Thursday evening reception, and other features are a Friday evening banquet and half-day field trips on Saturday. Papers will be presented at concurrent sessions on Friday and Saturday morning, with a poster session on Friday.

For further information, contact the local coordinator, Wally Brinkmann of the UW-Madison's Geography Department by phone: (608) 262-6316, fax: (608) 265-3991, or e-mail: brinkmann@geography.wisc.edu.



1998 cartographic information conference lands in Wis.

Milwaukee to host NACIS in October

by Ted Koch

The North American Cartographic Information Society (NACIS) will hold its 18th annual meeting in Milwaukee from October 7-10. NACIS brings together individuals from a variety of organizations for the purpose of facilitating communication in the map information community.

The Milwaukee meeting, at the downtown Hyatt Hotel, will feature nearly 35 presentations covering digital map planning, design, content, multimedia applications, digital library issues, and educating with maps. At the meeting, the State Cartographer's Office will make a presentation on its outreach and education activities.

The NACIS meeting will be preceded by a one-day symposium, *Maps and Minds: A History of Cartography in Geography Education*. The symposium is sponsored by the Center for the History of Cartography, Newberry Library, Chicago.

NACIS is currently administratively headquartered at the American Geographical Society Map Library collection at the UW-Milwaukee. Christine Reinhard, former Assistant State Cartographer, was a founding member of NACIS in 1980. Gregory Chu, a Geography Department faculty member at UW-La Crosse, is currently on the NACIS Board of Directors.

For details, contact NACIS through their web site which is listed in the SCO's website address book.

(source: NACIS)

.....Selected Regional Conferences and Technical Meetings

August 14-15, 1998 **The Northern Lakes Chapter of the Wisconsin Society of Land Surveyors Summer Meeting** will be held in Minocqua Wisconsin. Contact Mike Romportl at 715/362-4850.

August 20, 1998, **Wisconsin Land Information Board** will meet at the Wisconsin Dept. of Agriculture, Trade, and Consumer Protection Building at 10:00 a.m. in Madison, WI. Contact: WLIB at 608/267-2707

September 9-10, 1998, **The Wisconsin Land Information Association Quarterly Meeting** will be held at the Fox Hills Resort in Mishicot, WI. Contact: WLIA at 800/344-0421.

September 16-19th, 1998, **The Real Property Listers Annual State Meeting** will be held in LaCrosse, WI at the Best Western Midway Hotel at 1835 Rose Street. Contact: Jeff Bluske at 608/785-9724.

October 1, 1998, **Wisconsin Dept. of Natural Resources' 1998 GIS Expo** will be held on the 8th floor of the GEF II office building in downtown Madison.

October 7-9, 1998, **Minnesota GIS/LIS Consortium** is having its 8th Annual Conference. A conference for anyone interested in GIS, LIS, and related technologies. For more information about registration and exhibiting at the conference, contact: The Management Company at 612/226-5312.

October 7-10, 1998, **The North American Cartographic Information Society (NACIS)** is having their 18th Annual Meeting at the University of Wisconsin - Milwaukee, Wisconsin. Contact: Cynthia via email at: cbrewer@essc.psu.edu, phone: 814/865-5072, fax: 814/863-7943.

October 29-31, 1998, **The 49th Annual Meeting of the AAG West Lakes Division and 52nd Annual Meeting of the Wisconsin Geographical Society** will be held in Madison, WI. For more information, contact: Wally Brinkmann of Department of Geography, UW-Madison at phone: 608/262-6316, fax: 608/265-3991, or email: brinkmann@geography.wisc.edu.

November 4-5, 1998, **The 1st Annual ESRI Wisconsin User Group Meeting** has been tentatively scheduled to be held at the Madison Marriott (formerly Holiday Inn-West). Contact: ESRI at 612/454-060.

November 9, 1998, **Wisconsin Land Information Board** will meet at the Wisconsin Dept. of Agriculture, Trade, and Consumer Protection Building at 10:00 a.m. in Madison, WI. Contact: WLIB at 608/267-2707.

December 3-4, 1998, **The Wisconsin Land Information Association Quarterly Meeting** will be held at the Heidl House in Green Lake, WI. Contact: WLIA at 800/344-0421.

December 3-4, 1998, **1998 GIS in Illinois Conference** will be held at the Radisson Hotel in Lisle, IL. Contact: ILGISA at 815/753-1906.

1999

January 27-29, 1999, **Wisconsin Society of Land Surveyors Annual Conference** will be held at the Holiday Inn in Stevens Point, WI. Contact: WSLs at 414/549-1533.

March, 1999

March 9-12, 1999, **The Wisconsin Land Information Association's Annual Conference** 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 focus 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 a 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 six people--Ted Koch, State Cartographer (608/262-6852), Bob Gurda, Assistant State Cartographer (608/262-6850), A.J. Wortley, Outreach Specialist (608/265-8106), Brenda Hemstead, Administrative Assistant (608/263-4371), Paul Gunther, Information Systems Manager, and Liz Krug, Program Assistant (608/262-3065), plus several part-time graduate and undergraduate students.

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

- publishes the *Wisconsin Mapping Bulletin*, catalogs, guides, brochures, and other documents to inform the mapping community.
- inventories mapping practices, methods, accomplishments, experience, and expertise, and further acts as a clearinghouse by providing information and advice in support of sound mapping practices and map use.
- participates on committees, task forces, boards, etc. The State Cartographer is one of the 13 voting members of the Wisconsin Land Information Board and one of 16 voting members on the Wisconsin Land Council.
- develops experimental and prototype products.
- serves as the state's affiliate for cartographic information in the U.S. Geological Survey's Earth Science Information Center (ESIC) network.

About our Internet Web site...

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

Here, you will find 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, download certain data files, learn about our continuing work in this area, and link to other state clearinghouses.

Wisconsin Mapping Bulletin

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

News is welcome on completed or ongoing projects, published maps or reports, or conferences/workshops. Local and regional information is especially encouraged. The editor makes all decisions on content. Deadline for the next issue is October 1, 1998.

Editor: Bob Gurda

Illustrations: Brenda Hemstead, Jeff Bogenschneider

Desktop publishing: Brenda Hemstead

Printing: UW-Printing Services

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
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

ADDRESS CORRECTION REQUESTED

Nonprofit Organization
U. S. POSTAGE
PAID
Madison, Wisconsin
Permit No. 658