



Wisconsin MAPPING BULLETIN

Vol. 22, No. 1

January, 1996

Mapping hits the Internet

by Jim Jordan

Every week we learn about more Internet "web sites" with a mapping flavor. This is part of the well-publicized general trend of growth in use of the Internet, and the mapping niche has some very interesting developments.

There are now sites you can "visit" that are early examples of what will likely be common in the future. These include clearinghouses with sample images of geographic data sets, maps made on-the-fly, scanned aerial photographs, searches for place names, and the list goes on.

In Wisconsin, the SCO and the Land Information Board have joined in starting a clearinghouse accessible over the Internet. The goal is to link county Land Information Offices and others so that ideas, questions, answers, advice, metadata, and data can all be shared. At the SCO, we maintain another site that is specific to our office.

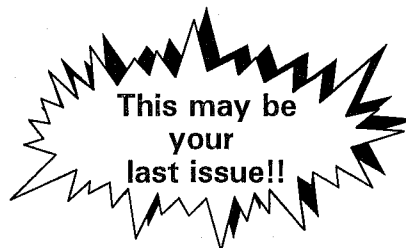
On page 7 of this issue you will find references to selected World Wide Web sites that you can access with an Internet connection and browsing software. Often, one site will provide links to other sites, making it easy for you to jump around the Internet without typing in the often long and complex addresses.

Prospecting by "search engine"

Mapping resources on the Internet are increasing continually. The capacity to locate digital data and images will mean a major increase in the use of these data. Effective searching strategies are the way to find what you're interested in. Finding data for a region or topic is a relatively simple matter. "Search engines" such as the World Wide Web Worm and WebCrawler, which you access over the Internet without having the searching software on your own computer, let you perform a net-wide query based on key words.

See examples at WLIA

If you don't have access to the Internet yet, you can still get a glimpse of what the future holds. The SCO will present "GIS Resources on the Internet" on March 7 as part of the WLIA Conference in Oshkosh. See page 12 for a general conference preview.



Have you returned your subscription card? In our previous issue, we announced our need to streamline the mailing list for the *Bulletin*. We appreciate the many people who returned the response card, as we requested.

However, **some of you have not let us know** if you want to continue receiving this newsletter. Since we bear the entire cost of preparing, printing, and mailing, **your role is to give us a positive response** in order to stay on the mailing list.

Look at the bottom of pages 15 and 16. If you didn't return the similar card from the October '95 issue, this is your last chance to continue your subscription. Cut out the card from this issue, and return it in an envelope. Or detach the card from the October issue and mail it.

Complete and return card at bottom of pages 15 & 16

1st Class stamp here
State Cartographer's Office University of Wisconsin-Madison Rm. 160 Science Hall 550 N. Park Street Madison, WI 53706-1491

If we don't hear from you soon, we will remove your name from the mailing list!

Highlights of this issue....

<i>Interview with Doug King</i>	3-6
<i>New geodetic control info. products</i>	8&9
<i>WISCLAND status report</i>	12

by Ted Koch

Board Meetings

The Wisconsin Land Information Board held its most recent meeting on December 11 in Madison. The board's next meeting is scheduled for February 21, also in Madison. A meeting schedule for the remainder of this year has not yet been set.

Grant Awards

At its December 11 meeting, the board approved 13 of the 34 grant applications received from local governments (primarily counties) in the July 1995 application period. The 34 grant applications requested funding exceeding \$2.8 million. For the 13 approved grants, the board awarded a total of \$716,693 with none of the projects receiving full funding. This is the lowest amount approved by the board since the first grant period in October 1991, when a total of \$600,000 was awarded to 6 counties.

Among the grants approved in December were awards to five counties which had not previously received a grant: Ashland, Bayfield, Forest, Green and Washburn. All but 5 of the state's 72 counties have now received at least one grant from the WLIB.

In slightly more than four years, the board has awarded 130 local government grants in nine grant periods, totaling \$9,830,784. Adding that to the more than \$20 million in fees retained by local governments, the land information program statewide has funneled more than \$30 million into local land records modernization projects.

Standards

In conjunction with the Wisconsin Department of Administration (DOA), the board has formed an 8-member GIS Data Interchange Standards Committee. The committee, which held its first meeting on January 8, is charged with recommending standards for GIS data exchange among Wisconsin state agencies, and with recommending standards for GIS data exchange between local units of government and Wisconsin state agencies. The committee is expected to complete its work no later than June 30 this year.

The committee's recommendations will be delivered to the board for review, which may include soliciting comments from the Wisconsin Land Information Association. The board's final recommendations will then be referred to DOA for incorporation into the state's information technology standards.

State Agency Integration Planning

The board's Integration/Clearinghouse Committee has assisted in drawing-up instructions for the next round of state agency land information integration plans. The plans are to be prepared by eleven agencies and delivered to the board by the end of March this year. In a departure from past practice, this year's plans will be incorporated into each agency's broader information technology plan.

Communications

Earlier this month, Executive Director Doug King issued the first edition of *Land Information Program Happenings*, four pages of news and commentary on changes he has implemented or is considering. Many of the initial changes involve communications, such as improved faxing and voice mail, opportunities for counties to connect to the Internet, and use of telephone/video conference calls. In fact, *Happenings* itself was sent via fax.

One change already made involves telephone access. The WLIB staff's primary telephone number, 608/267-2707, now supports general fax and voice mail.

Policy Issues

In *Happenings*, King also mentioned the need to discuss some fundamental policy issues and the opportunity to do this at the upcoming WLIA conference (see page 12 for details). Some of these issues are covered in more detail in the *Guest Interview* beginning on the next page.

Staff

Kimberly Keehn has joined the WLIB staff as half-time assistant through June.

Clearinghouse

The prototype clearinghouse developed by the SCO with funds from the FGDC and the WLIB has been moved to a computer maintained by DOA. The new address is: <http://badger.state.wi.us/agencies/wlib/sco/pages/wis-clinc.html>.

Table of Contents

• State land information news	2
• Guest Interview with Doug King	3-6
• State Government News	7
• Internet Developments	7
• Geodetic Control	8&9
• Electronic Connections	10
• Questions & Answers	11
• Event Profiles	12
• Conferences, Technical Meetings, & Classes	13
• Publications & Products	14

What's ahead for the Wisconsin Land Information Program?

As featured in our previous issue, Douglas King, Ph.D., is the new Executive Director of the Wisconsin Land Information Board. Now that he's been on the job for several months, we asked him to visit with us on where he sees the state program—its past, present, and particularly its future. You may benefit from reviewing the WLIB News on page 2 for background, prior to reading this interview.

At the WLIA Conference in early March, Doug will be involved in several sessions designed to gather input on the types of issues he discusses in this interview.

You've been on the hot seat, directing the Wisconsin Land Information Program, for almost three months now. What has been your biggest surprise?

Doug—

You already said it. The hot seat! I am amazed at the level of rigor, competition and political concern relative to the amount of money involved in the program.

I've managed grant programs with several other agencies, each one involving much more money than this one, yet in each case the entire process was much less complex, anxious, and painful for everyone than it is presently in this program. We just don't have to make it this hard. Why are we doing this to ourselves?

Recently, my office received a letter of protest regarding a grant not funded by the WLIB. Legislators became involved. So far, we've spent 120 staff hours handling all the actions this one letter produced. And now we're working with the Legislative Audit Bureau on it, so we aren't even done yet. I can think of far better things to do with three weeks of staff time.

Wisconsin's program is recognized around the country and beyond. Were there particular strengths in the program that drew you to be interested in being its director?

Doug—

Yes. I have been a supporter of the objectives of this program since working on what was then the State Bureau of Planning's Wisconsin Land Use Information System in 1973 and on the "Larsen report" in 1978.

The WLIP is a culmination of the "Wisconsin Idea" of state and local government and the university working together as a partnership for the benefit of ordinary citizens. The program's strength comes from its grass-roots constituency. Its customers are regular folks. It has put resources into the hands of local governments to accomplish things "down the road" for neighbors.

I am impressed with the people in the program. I've known many of them for twenty years or more. They're good people. They care. I like that a lot.

Speaking of that, let me be very clear about something. Bill Holland [the previous Executive Director] and I have been friends and colleagues for many years. I try to be straight, so I am not going to duck your questions. When I tell you about problems I see in the program, please understand that I am not talking about problems Bill created. He faced many of the same obstacles earlier that I am facing now. He tried his best to overcome them and so will I.

With more use of fax, Internet, conference calls and such, you've been trying to streamline communications. What reactions have you received from the county Land Information Offices?

Doug—

I am delighted with the comments I have received. They have all been very positive with two exceptions. Quite a few people have called or written to say they really like these improvements. So that's good.

One person did remind me that it would be a good idea to have a second conference call after preliminary grant results are known just in case the grant evaluation committee missed something. We will do that next time.

Another person expressed concerns about a "DOA takeover" because it looked like a lot of communications were being "electronically centralized." That one really bothers me.

My whole point in trying to get these electronic tools into the hands of local government is so that everyone can communicate with each other as a "community", not so DOA can centralize communication.

Just because I arrange to set it up through DOA does not mean that DOA is going to

control what is said by LIOs via fax, voice mail or Internet. What it does mean is that the DOA has the resources to make this happen for all of us.

If some people feel the DOA cannot be trusted, well then I guess I'm just going to have to "dance with the devil" to get what we want. I've done it successfully before, and I can do it again.

Speaking of local government, what is your view of the role of municipal governments in modernizing land information under Wisconsin's program?

Doug—

They play a key role. They have a great responsibility for making sure that modernization efforts happen together. The grant program encourages inter-governmental cooperation, but I hope we will see much more robust and formal arrangements.

We are setting ourselves up for failure. I am not going to let that happen.

There are over two thousand local units of government. If land records modernization occurs without close working relationships, we could make things worse instead of better. You need a picture before you can fit puzzle pieces together.

Something else about municipalities is also important to remember. We are going to have to think about fundamentally enhancing the nature of the WLIP to accommodate the interest of municipalities in participating in the program.

This last July there were about 35 grant applications. The program had all it could do to deal with them. What happens when, say, 100 municipalities are interested too? When that happens we exceed staff capacity, the scoring system breaks down and the funding mechanism is insufficient. We are setting ourselves up for failure. I am not going to let that happen.

Technical assistance has always been a challenging part of making sensible modernization happen, since the problems and solutions are complex, and the people involved come from so many different disciplines. Given limited re-

continued...

sources, what methods would you like to consider to address this challenge?

Doug—

You pushed one of my buttons. Let's face it. Putting a staff position in the WLIB office for the purpose of providing technical support is a pipe dream. It isn't going to happen in this fiscal climate. And if it could happen, it wouldn't work anyway.

We need assistance on 72 county plans, 180 bi-annual progress reports on 90 ongoing grant projects, 70 grant applications, 11 state agency land integration plans, and 26 priority projects in the WLIB strategic plan. There are not enough days in a year for a single position to possibly handle the load. Is there even a single person who has the breadth and depth of expertise necessary?

The Clearinghouse will be a powerful tool for all of us to help each other with technical support.

Technical support is very important to me, so let me expand on this point. First, it should become an explicit "foundational element" of the program. Some local units of government have been spending part of their retained fees to buy it. Some grantees have been given funds as part of the grant to buy it done. But we need to do much more to encourage that. It should be an explicitly funded part of the program. In fact, it should be a requirement for participation in the WLIP.

Second, much of the work can be done by vendors who are acceptable to the program and meet standards set by the Board using competitive procurement practices. Let me say in making that suggestion that I am not going to sign one purchase order for a project whose vendors do not meet state standards, who are not authorized to bid and who were not selected using competitive procurement practices.

Now, before I get the vendor community all wound up, let me emphasize that competitive procurement does not mean low bid. I've been through all that with computing technology acquisitions, and low bid doesn't always make sense. An RFP process (request for proposals) can be just as competitive as an RFB (request for bids) process. But I am concerned about some of the sole sourcing.

Third, once we have the Clearinghouse up and running, we will be forming an electronic community for ourselves. We will create an Internet "list-server" to which anyone can post technical questions and get answers. And not just from other LIOs either. But from experts throughout both the public and private sectors. Anyone

will be welcome to participate, and everyone will benefit. The Clearinghouse will be a powerful tool for all of us to help each other with technical support.

Fourth, training to build technical support capacity should be an eligible activity for funding under the "technical support" foundational element I am advocating. In fact, I think it should be a WLIP requirement that an in-house technical training program occur as a condition of participation in the program. I would like to see free technical training provided for the LIOs. This would ensure that the program develops and grows technical support capability at the local government level.

Finally, if I am successful in obtaining a reinstatement of the funding for a technical support position staffer through the Budget Adjustment Bill, it'll be for someone who can build technology tools for us all to use to provide technical support for each other as a community, not to be the sole provider of technical support. As the saying goes, "instead of digging holes, build and pass out shovels."

People in other states have often remarked that one of the great strengths of Wisconsin's program is the Wisconsin Land Information Association. How can the WLIA be most effective?

Doug—

Several ways. First, the WLIA has resources to achieve fundamental change in the program. Take the Clearinghouse, for example. The WLIA could cost-share its operation for the benefit of the greater community. This would benefit the WLIA directly, and would increase its visibility to a broader audience. There is no reason why we cannot put a funding package together right now with WLIA, WLIP, SCO and DOA to get it running.

I've already partnered with the SCO on this. The SCO Web Site is up. Building on that, the Wisconsin Land Information and GIS Clearinghouse will have been created by the time people read this.

The WLIA also has expertise to contribute. Why doesn't WLIA play a larger role in grant evaluation? For that matter, I don't think my office should even be directly involved in grant evaluation in the first place. As an advisor, sure. But making the recommendations? I don't think so.

Second, what about County Plan evaluation? When I was at the UW, we used a nationally accepted "peer review" process wherein each of the 26 campuses would look at the other 25 and vice versa. Very educational and fair.

I would invite the WLIA to do a regular review of County Plans instead of the

current process of bringing them to our office and then to the Board. The plans could go to the WLIA for a collegial peer review. Heck, it's our colleagues in the community that can give the best review, ideas and suggestions for improvement, not my office and not the Board either.

How do we enhance expertise of WLIA members to best handle grant and plan review? By asking all LIOs to become WLIA members, and by forming a Land Information Officers' Council. Council members could receive free training through, for example, the UW's Land Information and Computer Graphics Facility and the State GIS Service Center, in exchange for their assistance. Wouldn't that be a real win-win?

Third, WLIA has a very important role in sorting out who is speaking for whom. The LIOs are the primary customers of the WLIP. But what about the WLIA Board relative to the WLIP? Who are their respective customers and what is their relationship? Who is making what kind of policy? And what about the Association itself? Who is it speaking for?

The WLIP has a policy-making responsibility and I do not think it has done enough in this area. The WLIP's primary customers are the LIOs. The WLIP is also responsible to the taxpayers. It is analogous to the DNR Board's responsibility to look out for all of our interests as citizens no matter how large the memberships of the Wisconsin Sportsmen's Association or the Wisconsin Manufacturers' Association are. We need to be very careful sorting out who is the "community" and I welcome the WLIP's assistance in that.

Prior to joining the WLIP staff, you were involved in a major effort within the state's Dept. of Administration to set a variety of information technology standards. What do you see as the major benefits, and the major drawbacks, to setting standards in the land information arena?

Doug—

I co-authored the Governor's *Executive Order #242: Statement of Direction on Information Technology*. I've led and participated in the establishment of 23 information technology standards used by 60 agencies that were set in over 100 meetings involving about 6-10 people per meeting—a big investment of staff time.

No administration would invest that kind of time and effort unless there was a payoff. There is, and it comes in two parts.

First, the time and money savings resulting from the reduction in duplication, incompatibility and conversion achieved by shar-

ing common technology standards across 60 agencies is huge.

Second, about 70% of the cost of operating a technology is in its support. And it is also huge. We're talking millions of dollars in savings.

And guess what? The WLIP is building an information technology infrastructure in counties, cities, villages, and towns across Wisconsin. And you know what? They are all in for a great big surprise when they see what it is going to cost them to operate and maintain this infrastructure.

The cheapest way to do it is for everyone to share common technologies by adopting standards so that a much smaller number of people can provide the support needed from shared services and from each other. The most expensive way to do it is for everyone to do their own thing.

If 60 agencies can agree to cooperate for the sake of the taxpayers, so can 72 counties. If not, I hope everyone has lots of money to collect from their constituents for MIS and GIS position salaries. And a good explanation too.

As far as drawbacks of standards go, there are obvious effects on vendors because there are winners and losers. But the state agencies and vendor community are already dealing with this by migrating to the standards over an agreed upon four-year timeframe, which gives vendors time to adjust, reposition themselves, and develop marketing arrangements and partnerships.

In addition, all vendors are still free to do business with any agencies not wishing to move to the standards for good reasons, or who want to use their own money to purchase technology rather than using additional money for standard technologies available to them from the Information Technology Fund.

You've organized a committee to recommend a GIS Data Interchange Standard for state agencies. That committee includes three representatives of local government. How will this committee's work affect local governments?

Doug—

I formed this committee as part of my previous position as a Senior Technology Consultant with the DOA. Upon taking my new position, I immediately asked that the committee be reconstituted to include representatives of local government. I asked WLIA for nominations and placed all three of its nominees on the committee.

This is a DOA committee acting as an agent of the WLIP with an arrangement that the WLIA will advise the WLIP and the WLIP will advise the DOA. What will happen is that the committee will recommend

an interagency interchange standard. I can assure you that the recommendation will be acted on and a standard will be set.

Then the committee will be asked to recommend an agency-local and local-local interchange standard. What happens to that recommendation is up to the WLIP after soliciting advice from WLIA.

I hope the WLIA and WLIP have the courage to recommend a data interchange standard. If they do, the effect on local

There are three institutional challenges: vision, focus, and ourselves.

government will be to bring them a tremendous benefit because everyone will be able to exchange data without conversion. Isn't that what we meant when we said a key objective of this program was to "integrate data both horizontally and vertically?" That ability is expected of us by those watching this program as well as by the taxpayers. This is a strategic objective whose accomplishment is critical to our program's political survival.

While electronic communications can streamline the Wisconsin program, land information systems are much more than a technological solution. What do you see as the most imposing institutional challenges to reaching the Wisconsin program's goals?

Doug—

My answer to this is very simple. There are three institutional challenges: vision, focus, and ourselves.

We need to have a vision of what we are trying to build. We need to focus on doing a few things well. And we need to control ourselves and our tendency to make lists of everything we can think of that is important to some community of interest for some reason however good it may be.

This program is all over the map. It is raining committees and task forces. It has lots of meetings and lots of reports. It produces too much paper and has too much "process." If the state's biennial budget involved as much process to make decisions on \$100 million as we go through for \$100 thousand, it would be the next century until it was done.

And it produces lots of projects too—good ones! But are we supposed to be funding the best thing that comes through the door at any time, or are we supposed to be funding what everyone agrees is the most important thing that needs to come through the door at a particular time? Right now, we fund whatever is best, as it comes in.

First, let's talk about the need for vision. For example, what if the Board said that building the foundational element of "geographic framework" everywhere in the state was a priority and that it was most important to complete statewide geodetic control coverage before doing anything else? If that were the vision then funds would go to those projects as a priority. Sure, some counties that had already completed theirs would have to wait until others finished. On the other hand, the program funded most or all of their work in the first place.

If the Board were to establish such a vision linked to the grant program, we wouldn't even need competitive grants. The money could be allocated on a programmatic basis to, for example, geodetic control projects on a first come, first served basis until it was all done everywhere no matter how small a county's retained fees were. Then we'd go on to completing the next foundational element.

On that note, there are several other ways to move money out to local units of government without a competitive grant program, and still achieve the program's objectives. We need to reconsider whether the time, effort, anxiety, and divisiveness inherent in our current system is really counter-productive in the long term.

It is obvious that the current grant program cannot survive an increase in applications along with the continued improvement in scores, anyway. We don't have the resources to deal with it. A clear vision about what we are trying to accomplish would address this critical and fast approaching problem.

Second, let's talk about focus. We need to pick one or two critical things and do them well, even if that makes some people unhappy, rather than work on all kinds of things to keep lots of people happy while just getting by on all of these fronts.

Remember, the Legislature gave us a five-part charge: (1) implement a grants program, (2) modernize land records through county planning, (3) produce state agency land information integration plans, (4) establish a clearinghouse, and (5) provide technical support to local government.

I see a grants program. I see county plans and modernization happening. But where's the clearinghouse? Where's the overall technical support? Where's the state agency integration planning effort that is supposed to help local government?

The Legislature had a vision. It was the vision of the community where all of these pieces fit together and formed a whole greater than the sum of its parts. To fulfill that vision, we need to get back to basics.

continued...

For starters, we need much less of meetings, paper processing, travel, committees, task forces, and talking. Instead, we need to refocus on the vision, the mission, and the goals.

Finally, the third challenge is ourselves. We are our own worst enemies. We try to do too much at once. It's one thing to throw a new ball in the air at every WLIP and WLIA meeting. That feels good until after a few years when the balls are all in the air and it becomes a burden just trying to keep them all off the floor. That's how we can get distracted from our direction.

Here's what I intend to do to refocus. I am going to put the energies of the WLIP office into the five components of our legislated mission and get them done, one at a time. If that means reallocating my last travel dollar intended for the next conference or meeting, and using it to buy a modem to connect an LIO to the Internet so they can have access to a Clearinghouse, then so be it.

The WLIP conducted its 2nd annual strategic planning retreat last June. Will the issues identified at that retreat form the foundation of WLIP policy this year, or do you anticipate developing a new set of issues after this spring's WLIA conference?

Doug—

We're going to be looking at a new set of issues. The Board made a good start at a strategic plan, but the issues are just a list of issues, not a strategic plan.

I have a good bit of experience facilitating the development of strategic business and information technology plans. I've done this in both the public and private sectors. I've learned that there is a great deal of difference between a *list of issues*, a *long range plan* and a *strategic plan*. A list of issues in priority order is not a strategic plan. Neither does long range planning make something strategic.

The differences between the two lists of issues the Board created at its 1994 and 1995 strategic planning sessions are substantial enough that by definition they cannot form the basis for strategy and policy. And having a WLIP retreat to look into the future doesn't make them strategic either. I want to help the Board develop a truly strategic plan that will be a reliable guide for our near-term efforts.

What's strategic? The approaching impossibility of maintaining the grant program in its current form in the face of increased competition, greater scrutiny, higher scoring, and more applications is strategic. The Clearinghouse is strategic.

Technical support is strategic. Quality control audits on work performed with WLIP funds both retained and granted are strategic. All of these things are critical to the WLIP meeting its mission.

There has been much concern expressed over the schedule for updating county-wide plans and making some adjustments to the grants process. Can you put a time frame on when new guidelines in these two areas can be expected?

Doug—

After the WLIA Conference, I will be travelling out to the counties to meet on-site with LIOs and local government representatives. During the same period I expect the Board will have a chance to talk about a real strategic plan. So I'd say we're looking at somewhere around fall of 1996 to deal with the county plans, many of which are now almost five years old.

As far as the grant program goes, I will be discussing major changes in this area with the board and at the conference. As you know, there has been some streamlining already. There will be more for the July grant period. But the major changes will come in the fall of 1996 if the WLIP is willing to tackle them. I'm talking about the possibility of major change here. For example, I think there are several good ways to quickly put funds needed to accomplish the program's objectives into the hands of local government without going through a competitive grant program at all.

Some people have asked why didn't I tackle the county planning instructions right away, in time for the WLIA conference. Because when I took this job I saw a program I admired under threat of a sunset again. And it was very vulnerable. So here's what I did.

My first priority was to protect the positions we have. Then to protect the budget we have. Then to do something about the three legislative charges still unfulfilled.

By doing this, when the time came to make the decision on the program's future, I and everyone else could stand up say, "Yes, our positions are under recruitment so we don't want to lose any. Yes our budget does not need your additional scrutiny so you don't need to mess with it. Yes, we have created a clearinghouse so just give us time to get it operating. Yes, we do have effective state agency land information integration planning, just give us 1996 and we'll deliver on this. And yes, we have a mechanism to provide technical support to local units of government in the form of a memorandum of understanding with DOT, the inclusion of technical support as a funded foundational element in

grants to local units of government, and in the creation of a clearinghouse that can be used for technical support questions and answers among the community."

County plans can continue in the absence of new instructions and they will be just fine for a while. At least we can say we have them. These other things are not just fine. They need attention right now and that is what I am doing.

Let me say, though, that I am looking forward to working on the instructions for the new five-year plans from the counties. This program has come a long way since the original plans were approved, and I'm confident that by addressing these other issues first, the next round of county plans will provide a much clearer and more integrated game plan for everyone than if we rushed into developing them right now.

Is there any particular message you want to leave with people to help prepare them to discuss policy issues at the WLIA conference in March?

Doug—

Yes. Two things. Think outside the box! Change the paradigm! What worked to get the program going is not the same as what works to keep it going. The program is maturing. It is time to reconsider some of the rules, processes, and priorities that were appropriate six years ago but may no longer be appropriate today.

Someone said that when your children grow up, if you really love them you need to let them go. It is time for us to do some of that. Let's look for ways to let go of some of the processes the program imposes on local government and then use the time saved to provide local assistance and ensure product quality. Bring your ideas to the conference!

Second, find noble purpose. There are UW campus buildings that I personally helped design, justify, legislate for, and build. I came to see my own daughters performing on those stages and learning in those laboratories. What a feeling that was. There was a noble purpose to my work. What does that have to do with WLIP?

The annual WLIP surveys tell us that money is being spent on land records modernization. That's important to know, but it doesn't really measure progress. Nor is it very inspiring. We need to hear about the noble purposes. We need to hear how the WLIP saved a life, protected a natural resource, attracted a major industry, enhanced the welfare of a community, improved agriculture, or saved real money for the taxpayers. We need everyone to hear these stories. Bring your stories to the conference!

State Government News

Part of overall info-tech management

State sets GIS software standards

by Ted Koch

The Wisconsin Department of Administration (DOA) has been busy over the past six months adopting a series of standards to better direct and manage the growth of information technology within state government. To date, DOA has adopted 23 standards defining the technical requirements for desktop systems, electronic networks, fax, printers, voice mail, support services, and training. DOA adopted each standard based on recommendations from small committees assigned to study the issues.

Standards for desktop systems include office software (word processor, spreadsheet, scheduler, email, and presentation graphics), operating system, PC and mobile computers, and graphical user interface, as well as geographic information systems (GIS) software.

The GIS software standard is divided into two functional categories: presentation and analytic. Presentation GIS is defined in the standard by four characteristics:

- Access and use of data ("enterprise data") held by various agencies
- Capacity to support simple custom application development.
- Capability to conduct relatively basic queries and analysis, and basic display and analysis.
- Typical user is a manager or analyst using the software to understand problems or issues.

The software standard for presentation GIS will be ArcView 2 produced by Environmental Systems Research Institute, Inc. (ESRI). ArcView 2 represents over 98% of the approximately 150 copies of presentation software currently in use by state agencies. Given this high percentage, the GIS Standards Committee did not have a need to recommend a migration strategy. With this standard in place, all future purchases for presentation GIS will be ArcView 2.

Analytic GIS is defined by four major characteristics:

- Development and management of data used by multiple agencies, an enterprise approach.
- Development of complex and custom applications.
- Simple to complex data analysis, graphic display and output capability.
- The developer is typically a specialist in GIS.

The software standard chosen for analytic GIS applications is Arc/Info, also produced by ESRI. Currently, all state agencies with analytic GIS capability are using Arc/Info with approximately 100 installations in use.

The standards adopted by DOA provide a statement of direction for information technology within state government. They are intended to initiate agencies to move toward compliance with the standards, usually within a three to five year time frame. They are not intended for immediate compliance. Each standard has a stated migration strategy, migration path, and migration schedule.

Internet Developments

Use the SCO's home page as a guide

Interesting, useful Web sites abound

by Bob Gurda

As profiled in our cover story, mapping has arrived on the World Wide Web. The number and variety of sites is too large to list here, so we are beginning an annotated linked listing on the SCO "home page". You can now connect at <http://feature.geography.wisc.edu/sco/sco.html>.

Once connected, you can review our comments on various sites, then link to those you choose.

Here is a glimpse of sites we've visited: GIS data clearinghouses in other states; traffic maps of Seattle, updated every 10 minutes; a big list of GIS sites; aerial photographs available over pools on the upper Mississippi River; professional organizations such as URISA and ACSM; departments and campuses in the UW system; various federal organizations including USGS, NASA, NOAA, EPA, and JPL; maps of ski areas worldwide. Some of these sites allow downloading of data sets.

If after viewing our list you want to recommend additional sites for us to publicize, let us know!!

Data and maps both viewable

GNIS arrives on the Web

by Bob Gurda

You can now use the World Wide Web to search for mapped features anywhere in the country. The U.S. Geological Survey has developed a HTML application that accesses GNIS, the Geographic Names Information System. It further links to another site that can retrieve a generalized color map of any target area.

For instance, you decide to search on "Medford", and further identify it as a "PPL" (for "populated place"). The system responds with a list of places named Medford along with the latitude and longitude, elevation, state, county, and related USGS 7.5-minute topographic map names for each.

You can then click on the listing for Medford, Wisconsin, and retrieve two maps showing its location. One covers most of the country, and the other is much more localized. The features on the more local map are quite generalized, since they are derived from paper maps at a scale of 1:2,000,000 (1" = about 32 miles).

To access this site, enter the address below into your Web browser software:

<http://www-nmd.usgs.gov/www/gnis/>

GNIS is also available on CD-ROM, and GNIS data sets can be downloaded via ftp over the Internet. GNIS alone holds only the feature data described above, and does not include any maps.

(source: USGS)

New Geodetic Control Products from the SCO

new...enhanced...reformatted...updated

SCO offers new products for users of geodetic control

Surveyors, engineers, field GPS users, and others can now acquire improved and updated products supporting their use of federal geodetic control points.

The SCO, the National Geodetic Survey (NGS), and the Wisconsin Department of Transportation (DOT) have all developed new products in this area. Included are new software packages, fresher databases, and user guides. Prices listed below do not include shipping or sales tax. To order, ask for our *order form*.

In brief, the new products are:

- **WISCON**—a new software package developed for DOT that transforms coordinates between datums and coordinate systems. Price \$165.
- **SCO's statewide NGS package**—a practical way to acquire software and data produced by the NGS. Included is a new software/data product produced by the SCO, called *PLSS2GEO*, which greatly facilitates searching for NGS control points in the vicinity of any PLSS section in the state. Other features are both a listing and a map of HARN stations. Price \$50.
- **SCO's statewide USGS package**—a replacement for our previous offering of over 1,000 photocopied pages describing 3rd Order level lines. This package complements the NGS statewide package and includes text data files, a state index map, a user guide, and 316 level line diagrams. Price \$50.
- **NGS' 1995 CD-ROM**—containing data sheets for geodetic control points in 13 states from Montana to Indiana, plus software. The SCO's new statewide NGS package (see above) includes all Wisconsin data sheets contained on this CD-ROM. Price \$50.

To acquire any of these new products, each of which is described in more detail to the right, you will need a copy of our order form, which we can fax or mail to you.

If you have any general questions about available geodetic control information, give us a call.

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

phone: 608/262-3065
fax: 608/262-5205
bbs: 608/265-2807

WISCON released

Following months of development and testing WISCON, a coordinate and datum transformation software package, is now available for purchase from the State Cartographer's Office. Produced by a private software development firm under contract with the Wisconsin Department of Transportation, WISCON is being released as Version 1.40.



WISCON is designed to transform coordinate values between State Plane (SPC), Universal Transverse Mercator (UTM), Wisconsin Transverse Mercator (WTM), and the new Wisconsin County Coordinate Systems, to convert units (feet to meters or meters to feet); and to transform values between any of the above coordinate systems and latitude/longitude. WISCON also features on-line documentation, handles ASCII file reformatting, and supports transformations for bordering states.

The program, which runs under the Windows operating system on PC equipment, is intended for use by surveyors, engineers, mappers, and others who have a need to transform single coordinate values or point files from one mapping system to another. For transformations between horizontal datums such as NAD 27 and NAD 83 or NAD 83 (91), WISCON incorporates NADCON, the federally produced program that computes an approximate modeled value. For vertical transformation between the NGVD 29 and NAVD 88 datums, WISCON employs VERTCON, another federal package, which computes an approximate modeled difference in orthometric height.

Note: WISCON does not handle structured GIS data files. See information on WISCPROJ below.

WISCON is available for \$165. Contact the SCO for more information and an order form.

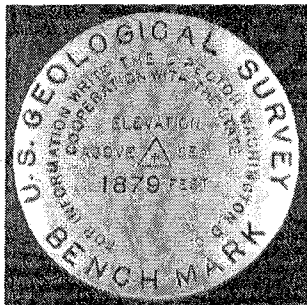
WISCPROJ released

A new tool is available to simplify the transformation of Arc/Info GIS data files. For details on WISCPROJ, see the article on page 14.

New Geodetic Control Products from the SCO

USGS/SCO 3rd order vertical geodetic control data files

[and retrieval tools for Wisconsin]



Information on U.S. Geological Survey (USGS) 3rd Order vertical control stations statewide is now available in digital form from the State Cartographer's Office. Packaged in a single user's guide, USGS control station information is now stored

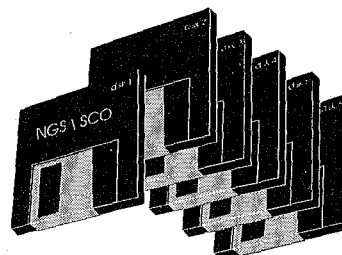
on two 3.5" PC diskettes in standard ASCII text computer files. The user's guide also contains a quadrangle index map and set of level-line diagrams as an aid in accessing the files. The diskettes contain only USGS data files. These files can be searched, sorted or otherwise manipulated with common text editor or word processor programs.

The 3rd Order Vertical Control Package includes:

- 79 pages of 3rd Order level-line diagrams, four to a page, in alphabetical order by 15-minute quad map name.
- Topographic Maps Index showing the 7.5' & 15' USGS topographic quadrangle name and coverage.
- two 3.5" DOS-compatible diskettes containing ASCII text computer files.
- installation and access instructions.

This package costs \$50. Contact the SCO for details or for an order form.

NGS/SCO geodetic control data sheets [and retrieval software for Wisconsin]



Software (for DOS)

- **DSX** [extracts control station information of a given type, accuracy, area, or number]
- **DSSELECT** [generates customized listings]
- **DSPLOT** [displays selected data graphically]
- **PLSS2GEO** ("PLSS-to-GEOgraphic") [to produce an approx. centroid (in latitude & longitude) for any PLSS section in the state].

Data files

- Structured text "data sheets", grouped by county, describing all Wisconsin geodetic control stations in the National Spatial Reference System (NSRS) database, maintained by NGS [we extracted these data sheets from the most recent NGS CD-ROM]
- A listing of Wisconsin High Accuracy Reference Network (HARN) stations
- A statewide HARN location map
- note: the database includes horizontal control stations [Order A, B and 1st through 4th], and vertical control stations [1st and 2nd Order]. A data sheet includes information on the position, location, physical setting, and history for a particular control point.

The price for this package is \$50. Contact the SCO for details or for an order form.

NGS 1995 geodetic control data sheets on CD-ROM for North Central U.S.

Geodetic control station information maintained by the National Geodetic Survey (NGS) is available on CD-ROM. The North Central U.S. CD-ROM includes data sheets for all National Spatial Reference System (NSRS) geodetic control stations in 13 states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, **Wisconsin**, and Wyoming. The data sheets included on the current CD were extracted from the NGS database in October 1995.

The NGS CD-ROM includes the following: Master index files for all points contained on the CD; text files explaining data sheet items and county FIPS codes; calibration base line data; the program DSX for extracting control station information of a given type and/or accuracy within a specified radius or rectangular area, or by station name or station identifier (PID); the program DSSELECT, for generating customized data listings from data sheet files, (especially helpful for managing geodetic data, building databases, or developing GIS applications), and DSPLOT, to graphically display the extracted data on screen. This disc sells for \$50. Contact the SCO for details or an order form.

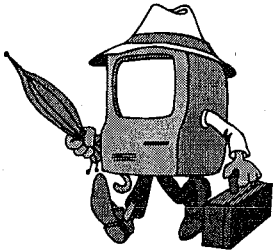
Electronic Connections to the SCO

Change your address listings !!!

WISCLINC, SCO home pages are moving

by Hugh Phillips

We have moved the *home pages* for both WISCLINC and the SCO. Their new addresses are listed below.



The SCO home page is now <http://feature.geography.wisc.edu/sco/sco.html>, and the WISCLINC home page is now <http://badger.state.wi.us/agencies/wlib/sco/pages/wis-clinc.html>.

These changes result from the fact that the computer we used for our clearinghouse development work is no longer available. Further, we are happy to have found cooperators willing to share the burden of maintaining a web site.

As background, we were fortunate the Minneapolis office of Environmental Systems Research Institute (ESRI) loaned us a Sun workstation for a year. This computer, which was invaluable for prototyping the WAIS and Web servers as part of the Wisconsin Land Information Clearinghouse Initiative, is now going back to ESRI.

That computer was critical to our success in providing an in-house demonstration platform for the Clearinghouse, for testing metadata entry tools, for providing ftp capabilities for cooperators to obtain metadata templates and upload metadata, and for providing a superb tool to investigate GIS and metadata activities through the Internet.

Our own SCO Web pages were also housed on the ESRI machine. Now, the clearinghouse page is based on a computer managed by the Wis. Dept. of Administration, an arrangement facilitated by the Wisconsin Land Information Board. The SCO page is now relocated to a computer operated by the UW-Madison Geography Department.

SCO staff changes

by Bob Gurda

With the end of 1995 came graduations of two SCO student employees. Monique Melum was with us for two years, and Rob Lawrence for almost that long. Each earned a Bachelor's degree in Cartography.

Both of these students worked on a wide variety of projects while here. Monique's most recent efforts focused on our new USGS vertical geodetic control information package, and GIS viewing developments. Rob recently finished writing the software program "PLSS2GEO" which is part of our new NGS control information package.

We have hired two new undergraduate students, A. J. Wortley and Jason Laux. After completing their initial work on a digitizing project with Reese Hirth, they will begin branching out into other areas.

More "conferences" now available

SurveyNet back online through the SCO

by Jim Jordan

Recent callers to our BBS may have been wondering about the lack of activity during the past month or so arising from our connection to SurveyNet. We are happy to report that this valuable service is available once again.

This feature of the SCO BBS allows you to send or simply observe message traffic amongst surveyors on a range of topics. People from all over the country participate and useful information is passed from one person to another.

Since the operation of SurveyNet changed hands in October (see October 1995 issue), our system has experienced problems in executing its daily link with the replacement site, due in part to changes made to the list of conferences available and to how our software was written.

We now have our link with SurveyNet reestablished and encourage you to check out the revised selection of topics. We have added an additional four SurveyNet conferences to the 18 that were previously available, and continue to maintain the 12 "local" SCO message areas.

SurveyNet offers an important venue for the discussion of current surveying and mapping topics from a wide variety of individuals and perspectives. Several bulletin board systems from around the country participate in this "echomail" network, and joining the discussion is as easy as making a call to the SCO BBS.

From our Main Menu, go to the Messages and Conferences area. Once there, select (A)rea and you will see the local and echoed conferences that we maintain. Message areas with an asterisk contain at least one message that you have not read.

Randy Orvis, of Farmington, NH, is now running SurveyNet from his BBS "Totalstation" (603/859-2361; settings 28.8k, N-8-1, 24hrs, for anyone wanting to connect directly to his BBS). He has been busy streamlining the operation of SurveyNet and would be happy to hear from past and present users.

Leave a message on SCO BBS or contact our office at 608/262-3065 if you'd like additional information about SurveyNet.

BBS statistics

Here are some BBS statistics for your consideration (all of these continue to grow)

- Number of registered users: 654 (337 of the 654 total registered users have access to the Internet. Of the remaining 317 users who currently don't have access to the Internet, 240 hope to have access soon).
- Total number of calls to date: 3567
- Most popular file: files.zip
- Other popular files: list.zip, pspro200.zip, vmap120.zip
- Total files on BBS: 270

Questions & Answers

?

Does the Public Land Survey System's tier numbering scheme in Wisconsin mesh with Minnesota's?

The answer to your question depends which part of the Wisconsin-Minnesota border you're talking about.

From the southern border of Wisconsin north to the junction of the St. Croix and Mississippi Rivers, the two numbering schemes don't have any direct relationship on the ground, even though they are based on the same model of a baseline and a principal meridian. Wisconsin and most of Minnesota use different base lines and different principal meridians, from which the township or tier number was figured at the time the original land surveyors did their work. As the surveyors measured and marked off each township going north from the baseline, they incremented the tier number by one.

Wisconsin's base line is at the southern edge of the state, while the one used in southern and western Minnesota is in Arkansas. As a result, Iowa's tier numbers are simply continued northward into Minnesota. The effect of this difference is that at comparable latitudes a township in southeastern Minnesota has a much higher tier number than a township to its east in Wisconsin.

For instance, along the Mississippi River in Wisconsin, opposite the Minnesota-Iowa border, you are part way into Township 12 North, Range 8 West (in section 21, more precisely). Across the river is the south edge of Township 101 North, Range 3 West in Minnesota, and the north edge of Township 100 North, Range 3 West in Iowa.

Going north from the St. Croix-Mississippi junction, the PLSS in Wisconsin and Minnesota are linked. The pattern begun in southern Wisconsin extends westward across the St. Croix River into Minnesota, and covers the east central and north eastern parts of that state.

The tier numbering in both Illinois and Michigan are also independent of Wisconsin's.

These factors can create some fairly confusing situations for mapping and map reading along state boundaries. A particular challenge is the Mississippi River corridor, where islands have changed shape over the last 150 years and dams have altered the water levels. Our state boundary is not always easy to delineate today (and in some cases it never was), and the channel(s) of the river may have moved over the years.

Nevertheless, the Public Land Survey persists for legal purposes as it was originally laid out, despite difficulties in depicting it on maps. In fact, an intent of the original survey was the written description of land parcels, and those descriptions refer to the appropriate principal meridian. On the other hand, when the USGS later made topographic maps over Wisconsin it did not include any reference to a principal meridian as part of its depiction of the PLSS.

?

I need a map showing the tracts (and blocks within tracts) used for the 1990 Census. I need this for several areas in my vicinity. I know the Census was managed with computer maps, but can I get paper copies?

The maps you're interested in are readily available from an office in Madison: the Wisconsin Integrated Legislative Information Systems (WILIS).

There are about 1800 such maps for Wisconsin. The number of sheets per county varies, in several cases more than forty. There is also an index sheet for each county. Each sheet is 36 inches wide by at least 36 inches long.

WILIS charges \$3.25 per sheet (no quantity discount) plus a fixed shipping charge of \$3.00. You can order by telephone. Be prepared with a description of the area(s) you are interested in, since the maps you need may easily be identified over the phone.

The copies you order will be mailed with an invoice.

Contact WILIS, which is located at 17 S. Fairchild Street in Madison, by calling Lori at 608/264-8582.

?

How can I acquire copies of DEMs produced by the USGS from their 1:24,000-scale topographic map series?

More and more Digital Elevation Model computer files are becoming available for Wisconsin. Much of the production work is in areas where digital orthophotos are being produced, since the DEMs are needed to differentially rectify aerial photographs. Call us at the SCO if you want to know about availability for a particular area. There are some alternative products, also.

Like any other federally produced information, the USGS DEMs are in the public domain, so they cannot be copyrighted and anyone can freely make copies.

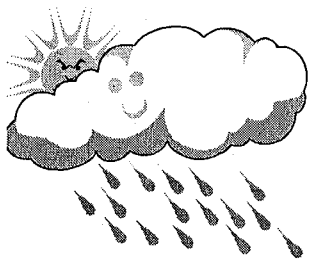
Completed DEMs are archived at the EROS Data Center in Sioux Falls, South Dakota. You can order them from that facility. They charge a modest fee to cover costs of reproduction. Contact 605/594-6151.

At least one private firm collects and redistributes DEMs produced by the federal government, and promises faster delivery at competitive prices. Contact Micropath Corporation at 303/526-5454.

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.

Events

Will "weather" the elements



WLIA to Convene in Oshkosh

by Ted Koch

The Oshkosh Hilton and Convention Center is the site of the 9th annual conference of the Wisconsin Land Information Association (WLIA). Scheduled to run

from March 5-8, this gathering of a wide range of professionals working with land related information applications, is expected to draw more than 500 participants and 35 exhibitors.

The conference theme this year is "Weathering the Elements—A forecast for Land Records". Following a format begun last year in Middleton, a series of half-day pre-conference workshops will be held on Tuesday, March 5. Workshops include a session on digital orthophotography, "blue booking" county geodetic network data, a review of the newly proposed federal geopositioning standard, and an introduction to land records modernization.

The conference itself will open on Wednesday morning, March 6, with a Land Records Forum. The purpose of the forum is to initiate discussions on policy issue alternatives for the state's land information program. Issues identified in this session will be further evaluated during a Forum/Town Meeting session to be held on Friday morning, March 8.

The Wednesday morning forum will be followed by a luncheon featuring keynote speaker, Richard Varn. Varn, Director of Communications at Northern Iowa University, previously served for 12 years in the Iowa legislature where he held the position of Majority Whip and chaired the Communication and Information Policy Committee.

Varn has also served on a number of national information technology task forces and panels, and is considered to be one of the nation's leading policy makers and speakers on issues related to information technology and its impact on government and society.

General sessions featuring tracks on program management, orthophotography, new technologies and local experiences, will run Wednesday afternoon and all day Thursday. Business exhibitors will sponsor the conference's opening reception on Wednesday evening.

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

For details, contact WLIA at 800/344-0421.

Expands correspondence offerings

EPD offers more surveying courses

The University of Wisconsin-Madison's Engineering Professional Development (EPD) program has added two more surveying courses to its catalog. With continuing assistance from retired professor Paul Wolf, EPD now has *Surveying 2* and *Advanced Surveying*.

Both courses use a textbook and written assignments, and the advanced course includes exercises requiring a modest personal computer.

For details, telephone Judy Faber at 608/262-1735; or fax to 608/263-3160 or 608/265-2293.

(source: EPD)



Satellite broadcast from Madison

2nd national seminar set for April

Are you trying to tackle LIS issues such as data standards and maintenance, geographic reference systems, and street addressing? Help is on the way via another nation-wide seminar presented by the University of Wisconsin-Madison.

On April 11, the university's Land Information and Computer Graphics Facility will present "Land Information Systems for Local Government: Issues and Interfaces". The seminar will be broadcast via satellite uplink from 12:30 to 5:00 pm CST.

The program takes up where earlier work left off. The first hour provides a primer for local elected and appointed officials who oversee GIS/LIS programs. Live discussion will be augmented with video clips of activities around Wisconsin in various settings. Fax and phone questions will be accepted from the audience during the seminar.

This seminar is appropriate for anyone involved in the implementation of GIS/LIS in a local government. Those who should attend include land use and land records professionals, elected and appointed officials, utilities and facilities managers, and directors of information management.

The uplink is sponsored by UW-Extension, AM/FM International, URISA, and NCRI. In Wisconsin, contact your County Extension office for details. In other states, contact chapter headquarters of AM/FM International or URISA. For further information on sites or becoming a site, contact the UW CALS Conference Office by phone at (608) 263-1672 or by fax at (608) 262-5088.

(source: LICGF)

Selected* Conferences, Technical Meetings, and Classes

February 20-22. **Nebraska GIS Symposium** will be held at the Cornhusker Hotel in Lincoln, NE. Contact: Bernice Goemann at 402/472-8197.

February 20-23. **Michigan Society of Professional Surveyors, 55th Annual Meeting** will be held in Lansing, MI. Contact: Roland f. Self, 517-484-2413.

February 21-24. **Illinois Professional Land Surveyors Association Annual Conference** will be held in Springfield, IL. Contact: Robert E. Church at 217-498-8102; fax 217-498-8489.

February 28 - March 1. **Minnesota Society of Professional Surveyors 44th Annual Meeting** will be held in St. Louis Park, MN. Contact: Sharon Harris at 612-890-6991.

February 29 - March 1. **Second Annual California GIS Conference** will be held at the Golden Gateway Holiday Inn, San Francisco, CA. Contact: Mark Safran at 510/638-6122.

March 5-8. **Wisconsin Land Information Association's Annual Conference** will be held at the Oshkosh Hilton & Convention Center in Oshkosh, WI. Contact: WLIA at 800/344-0421.

March 18-21. **Tenth Annual GIS Conference** will be held in Vancouver, British Columbia, Canada. Contact: Beverly Williams, GIS World, Inc. at 970-223-4848; fax 970/223-5700.

March 25-28. **AM/FM International Annual Conference XIX** will be held at the Washington State Convention Center, Seattle, WA. Contact: Cindy Achten, AM/FM International, Aurora, CO, 303/337-0513; fax 303/337-4001.

March 25-29. **The 26th International Symposium on Remote Sensing of Environment & The 18th Annual Symposium of the Canadian Remote Sensing Society** will jointly be held at the Hotel Vancouver, Vancouver, British Columbia, Canada.

April 9-14. **92nd AAG Annual Conference** will be held in Charlotte, NC. Contact: Association of American Geographers at 202/234-1450; fax 202/234-2744.

April 11. **live satellite conference on Land Information Systems for Local Government: Issues and Interfaces** will be held. Contact: Ben Niemann or Celeste Kirk at the UW-Madison, Land Information & Computer Graphics Facility at 608/263-5534; fax 608/262-2500.

April 16-17. **WAUG Spring Conference** will be held at the Valley Inn, Neenah, WI. Contact: George Glocka at 414/781-1000, fax: 414/781-8466.

April 20-26. **ASPRS/ACSM Annual Convention and Exhibition** will be held at the Baltimore Convention Center, Baltimore, MD. Contact: American Congress on Surveying and Mapping, 5410 Grosvenor Lane, Suite 100, Bethesda, MD 20814, 301/493-0200, fax 301/493-8245.

April 28-May 1. **Mid-America GIS Symposium** will be held at the Hyatt Regency Hotel at Crown Center, Kansas City, MO. Contact: URISA at 202/289-1685, fax: 202/842-1850.

May 20-24. **ESRI 16th Annual User Conference** will be held at the Wyndham Hotel and Palm Springs Convention Center, Palm Springs, CA. Contact: ESRI at 909/793-2853, fax: 909/793-5953.

May 21-23. **Second International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences** will be held in Fort Collins, CO. Contact: H. Todd Mowrer at 970/498-1100, fax: 970/498-1010.

May 28-31. **Fifth Annual Business Geographics Conference and Exposition** will be held in Chicago, IL. Contact: Conference Dept. at 970/223-4848, fax: 970-223-5700.

June 6-7. **Wisconsin Land Information Association Quarterly Meeting** will be held at the Point Hotel in Minocqua, WI. Contact: WLIA at 800/344-0421.

June 18-20. **The Institute of Navigation - 52nd Annual Meeting** will be held at the Royal Sonesta Hotel in Cambridge, MA. Contact Dr. Alison Brown, General Chair at 719/481-4877, fax: 719/481-4908.

June 22-28. **6th International GPS/GIS Conference** will be held in Billings, MT and Yellowstone National Park. Contact: GeoResearch at 301/320-0911; fax 301/320-0922.

July 9-27. **18th Congress of the International Society for Photogrammetry and Remote Sensing** will be held in Vienna, Austria. Contact: Peter Waldbausl, fax: 43 1 505-5268.

July 27-August 1. **URISA Annual Conference** will be held at the Salt Palace Convention Center, Salt Lake City, UT. Contact: URISA at 202/289-1685, fax: 202/842-1850.

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

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

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

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

November 16-22. **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.

December 5-6. **Wisconsin Land Information Association Quarterly Meeting** will be held in Southwestern Wisconsin. Contact: WLIA at 800/344-0421.

1997

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

March 25-28. **AM/FM Annual Conference** will be held in Nashville, TN.

April 1-5. **AAG Annual Conference** will be held in Ft. Worth, TX.

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

October 16-22. **GIS/LIS Annual Conference** will be held in Cincinnati, OH.

**For much more extensive and/or more current listings, separated into Foreign, National, and Wisconsin, consult the SCO's BBS (see p. 15)*

Publications and Products

Planning begins for additional themes

WISCLAND products begin to appear

by Bob Gurda

As we go to print, some GIS data products developed through cooperative work under WISCLAND are becoming available. In addition, partners in WISCLAND are laying plans to coordinate work on additional themes of the state's landscape.

WISCLAND is an acronym for The Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data. Numerous organizations are joining together to develop needed GIS databases and analysis techniques.

Land cover mapping leads off

Land cover interpretation, statewide, was the initial reason for forming WISCLAND. The products from this cooperatively funded activity will be released over the next year or two. The first areas available are for the far northwestern part of our state.

To view color plots of the first land cover maps, attend the WLIA Conference in early March (see page 14). At that time we will provide specific information on the characteristics of the digital files already available as a standard product. We will also present a projected timetable for completion of the remaining areas.

Most wetland map conversion finished

As a prelude to the land cover mapping, WISCLAND helped fund the conversion of the Wis. DNR's wetland maps to digital form. This process is almost complete statewide, with 64 counties available. The eight counties remaining include five where remapping is in progress (Marathon, Adams, Juneau, Monroe and La Crosse), and three which are in the digitizing phase (Wood, Waupaca, and Outagamie). Contact Calvin Lawrence at 608/266-0756 for details.

Other theme areas moving forward

Statewide hydrography and Digital Raster Graphics are two aspects of WISCLAND that are making rapid strides, although the recent shut-down of the federal government has caused some delays.

WLIA presentation

There will be a WISCLAND session at the WLIA Conference in early March in Oshkosh (see page 12 for details). This session will be held from 1:30 - 3:00 pm on Wed., March 6. We will be showcasing the latest products and explaining opportunities for expanding cooperative activities to develop more landscape data.

Fifteen experts collaborate

Engineer's guide to GPS forthcoming

A new publication on use of the Global Positioning System (GPS) will be available soon. Designed for engineers, *Understanding GPS: Principles and Applications* will be about 570 pages including 203 illustrations and 613 equations.

This guide is authored by 15 experts and edited by Elliott Kaplan of the Mitre Corporation. It covers details of the satellite signals and their reception, performance of different types of receivers and methods, integration of GPS with other sensors, and the various satellite systems including GLONASS and INMARSAT.

The publisher, Artech House, Inc., indicates that this guide should be available in March for \$95.00 with a pre-publication discounted price of \$81.00 (before February 29). For details, contact Artech at 800/225-9977, Ext. 4002.

(source: Artech)

New county plat books

The following 1995 Wisconsin County Land Atlas and Plat Books are now available, for \$25 plus tax and shipping: Columbia, Oneida, Polk, Sauk, and Vilas Counties. 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.

Transforms Arc/Info coverages

DOT completes "WISCPROJ"

A new software tool is now available to simplify performing transformations of Arc/Info coverages. Developed by Lee Samson at the Wisconsin Department of Transportation, the free AML "WISCPROJ" is available for download from the both the SCO's BBS and our WWW site (see page 15 for contact information).

Built with a customized interface, this software simplifies the process of converting Arc/Info GIS data (a "coverage") from one coordinate system or datum to another. WISCPROJ will also handle text files. It accommodates traditional coordinate systems and the new Wisconsin County Coordinate System as well as NAD 27, NAD 83 (1986) and NAD 83 (1991), and can produce projection files as another form of output.

WISCPROJ operates under UNIX Arc/Info software, version 7.02 and higher, and has been tested only on HP/UX 9.01.

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.

You access our BBS with a telephone call from any remote computer that is connected to a modem and operated through basic communications software. An ordinary personal computer will suffice; a modern modem will give you faster response and reduce the length of your connect time.

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



About our homepage...

The SCO has implemented a "homepage" on the Internet. 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>

This area is still under development, but will one day link to our BBS so that you will be able to access information by and about the SCO via either modem or Internet.

About the WISCLINC homepage...

A second Internet resource we have developed 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.

Readers!! In order to continue receiving the *Wisconsin Mapping Bulletin*, you must clip and return the card below. Please check your address and complete our brief survey.

Cut out this card and **mail to us in an envelope** or detach and mail the similar card from the October '96 issue.

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

Please fill out survey on other side

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.

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

ADDRESS CORRECTION REQUESTED

Wisconsin Mapping Bulletin

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

News is welcome on completed or ongoing projects, published maps or reports, or conferences/workshops. Local and regional information is especially encouraged. The Editor makes all decisions on content. Deadline for the next issue is April 5, 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

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

Please keep me on your mailing list for the WMB. ☐ YES ☐ NO

To help us know your interests, please complete the four questions below

1. Indicate your level of interest in the following topical categories of the *Mapping Bulletin* content.

(none) low medium high

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Wis. Land Info. Program News |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Mapping & GIS Project Reports |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Commentaries & Guest Columns |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Questions & Answers |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Bulletin Board System |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Internet Resources |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Aerial Photography |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Remote Sensing |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Geodetic Control |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | People & Organization News |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | New Products & Publications |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Event Reports & Previews |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Events & Conference Calendar |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Other: _____ |

2. Do you use the SCO's electronic Bulletin Board Service?

- ☐ Yes
☐ No

3. The SCO now has an Internet home page. Do you have access to the Internet?

- ☐ Yes, at work
☐ Yes, at home
☐ No

4. We must have a street address. If not shown on your label, please include it on the line below:
