



Wisconsin MAPPING BULLETIN

Legislative committee amends WLIP budget

Board sunset would be 9/1/2005

by Ted Koch

The Wisconsin Legislature's budget rewriting committee has approved substantial changes to the Wisconsin Land Information Program's proposed budget for the next two years. In action taken on May 16, the Joint Committee on Finance (JCF) voted unanimously (16-0) to alter the WLIP budget as originally proposed by Governor Doyle in his state budget bill introduced in the legislature last February. (see Winter, 2003 issue of the *Bulletin*).

While the entire legislature can still make changes before forwarding the bill to the governor for his final action, further adjustments to WLIP language seems unlikely.

The JCF approved three significant changes on a motion by Senator Bob Welch and Representative David Ward. These changes all reallocate WLIP program revenue received by the Land Information Board in Madison. This revenue is derived from a portion of the land transaction recording fee collected at county Register's-of-Deeds offices. The amount received by the Board has averaged slightly over \$3 million annually over the past five years.

Soil mapping funding restored

The first piece of approved language contains three provisions:

1) Provide \$123,900 each year to support continued development of the Wisconsin Land Information System (WLIS), the Internet-based system designed to link land information data servers across the state. WLIS development work began this past year by the WI Dept. of Natural Resources through a contract with the WI Dept. of Administration.

2) Add \$421,300 total over the two years to insure that sufficient funding is available for base-budget grants to counties. The base-budget grant program insures that each county in the state, regardless of amount of recording fee revenue collected, will receive a minimum of \$35,000 annually for land records modernization work. This past year 23 counties received base-budget grant awards.

3) Provide a total of \$1,330,800 to complete the final two years of the state soil-mapping initiative. This six-year project is an agreement between the WLIP and the USDA-Natural Resources Conservation Service to complete digital soil mapping over the entire state. For the

past two state budget cycles, this project has been funded with a combination of WLIP funds (\$415,000 annually) and a total of \$285,000 annually contributed by three state agencies. The JCF's adopted language calls for the entire \$700,000 annual amount to be supported by WLIP funds.

Comp planning funding altered

The second part of the JCF's action approved the governor's recommendation to delete the previously used \$1.5 million of state general purpose tax revenue (GPR) for comprehensive land-use planning grants, and replace that amount with WLIP funds. Over the past two years, comprehensive planning has been funded at \$3 million per year, \$1.5 million from GPR, \$500,000 from the WLIP, and \$1 million from transportation funds. This action, in agreement with the Governor's plan, takes \$2 million of WLIP funds for comprehensive planning grants. Additionally, in separate action related to the state transportation budget, the JCF eliminated the WI Dept. of Transportation's \$1 million contribution to comprehensive planning, thus reducing the total comprehensive planning funding amount to \$2 million annually.

In addition to the funding changes for comprehensive planning, Senator Welch also included language in the amendment requiring that the planning grants using WLIP funds include provisions for using WLIP-created data, and that this information be consistent with WLIP interests, standards and access to planning-support tools.

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Recent road trip ruminations

Land records projects are bubbling

by Ted Koch and Bob Gurda

Modernization of land records continues to move forward in Wisconsin. Lately we have had the opportunity to visit a number of local offices around the state and can confidently report that progress is more evident than ever.

What follows are selected highlights from our recent travels. Rather than listing specifics, here we will focus on several common threads we noticed.

Parcel Mapping

First, activity in the digital mapping of land ownership parcels is vigorous. In several northern counties serious work has begun recently toward integrated mapping that will result in a county-wide product. While this kind of modernization was initiated in the more populous counties some years ago, lack of resources has held back progress over much of the north.

This recent movement toward more robust parcel mapping is the result of multiple factors. The Wisconsin Land Information Board's Strategic Initiative grant program has been a big boost for some counties that collect only modest amounts of fees from the filing of land records documents and as a result have few resources with which to build this critical information layer in computerized form. In another case, the county has been accumulating its collected fees for a number of years and is now poised to embark on a large parcel mapping contract with a private firm.

Document Imaging

Systems to scan and index documents at the Registers of Deeds offices in the county courthouses have become very common. However, some of the oversized maps such as old city plats don't fit the more modestly proportioned scanners. In some cases, counties have transported their larger documents off site for scanning.

Customized software delivery

A number of businesses have sprung up around the state and elsewhere that specialize in consulting and delivery of customized GIS applications. The installed systems have been yielding benefits in some local governments—particularly those with more resources—for over ten years. By contrast, progress in organizations with far fewer resources has been slow, yet even in some of these places the tide is turning. Especially where a county can pool resources from multiple departments, integrated GIS solutions delivered by consultants are becoming more common.

GPS-Snowmobile interference

One county land information office reported problems with signal interference when trying to map trails using a GPS receiver mounted on a snowmobile. While signal interruption



from tree branches has been a well-known problem for years, in this case it seemed that the interference was emanating from the snowmobile itself, perhaps part of the engine controls. The problem occurred only with newer model sleds.

Comprehensive planning popularity?

In a number of counties we heard about the growing uneasiness with the state's comprehensive planning program. This seems to be particularly prevalent within the rural towns in counties in the central part of the state. The anti-comprehensive planning activities are influencing some counties to limit their county wide planning goals, and to focus more on general planning rather than on specific localized land-use planning strategies.

Comprehensive planning also carries the label of "smart growth", and it is this label that carries the connotation with many as a program that limits desirable growth and curtails individual property rights. Since good quality land-use planning requires current, accurate and reliable geospatial data, the use of information created and maintained through the state's Land Information Program is a critical component to the success of the comprehensive planning program.

GIS User groups fill a niche

Within regions and metropolitan areas, GIS users in more than half of the state are gathering several times a year to share experiences, hear about new products and techniques, and plan for regional group data development projects.

Most such groups are coordinated by staff from a regional planning commission, sometimes as part of a small leadership team. The group in the Milwaukee area has been led by a private-sector consultant. We are in the process of building an index to these groups for our web site.

At the county level a number of GIS user groups or coordinating groups have formed. These are usually organized by the county Land Information Office. In one southeastern county the LIO coordinates regular meetings, inviting GIS employees from the county's many municipalities. The purpose of the meetings is to regularly inform one another of progress on current projects, and the intended scope of planned projects. The goal of sharing plans is to make any adjustments to the scope of projects to meet the needs of other potential users, just not the needs of the project sponsor. It's a simple yet effective process that seems to be working well, and is leading to improved development of integrated systems and shareable data.

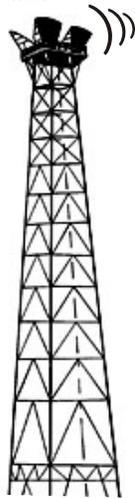
Value of local WLIP data recognized

Wireless 911 would leverage existing land information

by Ted Koch

References to the WI Land Information Program (WLIP) and Land Information Board (WLIB) have recently appeared in proposed legislation not directly related to either, and to quote a well-known line, "It's a good thing."

An ever increasing number of Americans rely on wireless phones as their primary means of telephone communication. Following the 9/11 terrorist attacks we became so much more aware of the critical importance of wireless phones for both public and personal safety. Knowing the location of a wireless call in an emergency can be critically important for fast response. Unfortunately, at the present time across most of Wisconsin, the location of a wireless 911 caller cannot be determined by the facility receiving the call.



Legislation in the works

Assembly Bill 61, currently in the legislature, is intended to change this situation through grants to

wireless-service providers and to local operators of public answering points, to upgrade their systems. The legislation as currently written notably recognizes land information such as road centerlines and addresses as a necessary component of a wireless 911 response system.

AB 61 specifies that the grants be administered by the Public Service Commission (PSC), and that there be only one grant per county for a public safety answering point (PSAP). The original version of AB 61 had no mention of land information. However, in late May the Senate's Committee on Transportation and Information Infrastructure adopted an amendment identifying geographic data as an important system response component for determining the location of emergency calls. The committee then approved the amended bill.

The amendment specifically identifies land information as a PSAP-grant-eligible component. It further specifies that the PSC may approve funding for land information activities only if the data collection conforms to WLIP standards, is consistent with a county's existing land records plan, and does not duplicate already existing information.



Additional resources directed to WLIB

The amendment also requires the PSC to consult with the WLIB before approving any land information grant component, extends the sunset of the WLIP to 9/1/2005, and provides a one-time appropriation of \$50,000 to the WI Dept. of Administration for staff to analyze land information grant components.

AB 61, as now written, is significant in that it recognizes the value of WLIP-derived information for a use that was not anticipated when the WLIP was established. It demonstrates the concept that land information is appropriate for many uses within a variety of organizational structures.

AB 61 next has to gain full Senate approval, then go back to the Assembly for consideration of the Senate's changes. The final step would be the governor's signature.

Legislative committee amends WLIP budget, continued...

In the third component, the committee agreed to move a total of \$1,626,000 over next two years from the WLIP fund to the GPR fund. Although the JCF adjusted the WLIP budget significantly, it stands the Governor's recommendation to extend the WLIP's sunset date from September 1, 2003 to September 1, 2005.

Action moves control of WLIS

Finally, in a separate action on June 4 from a motion sponsored by Senators Welch and Ted Kanavas, and Representative Michael Huebsch, the JCF voted 12-4 to include as a duty of the WLIP the approval of all expenditures relating to the development of the WI Land Information System (WLIS). The vote was along party lines with the twelve Republicans supporting the motion and the committee's four Democrats opposed. Currently, all WLIS funding is under the control and direction of the WI Dept. of Administration.

Waiting for the final word

As this newsletter goes to press, the budget is now in the hands of the legislature for final approval before being sent to the governor for his approval, disapproval or alteration through the use of line-item veto. At this point it is expected that neither house of the legislature will make significant changes to the JCF version of the budget, and that each house will individually vote to approve before the end of June.

In keeping with traditions of political rhetoric, the governor is threatening to veto the entire budget to force the legislature to make changes more to his liking. However, there is a good amount of conventional wisdom indicating the governor will use the less drastic, but highly effective technique of line-item veto to craft budget changes more to his liking, and more in agreement with the original budget he submitted last winter.

10, 25 years ago

Looking back...

by Bob Gurda

From our archives we have gleaned the following highlights of what was happening in the state's mapping history.



1993

Prints from the first NAPP aerial photography project over the state became available. A coherent national program to produce orthophotos from NAPP images was gaining support.

The Federal Geographic Data Committee solicited comments on its first proposal for a metadata content standard.

WISCLAND held its initial organizing meeting to begin planning a statewide land cover mapping project.

The federal Bureau of Land Management opened its new repository of scanned land patents and associated database to access via modem for \$2.00 per minute. *[Editor's note: the Internet wasn't yet available to most people].*

James Robertson joined the Wisconsin Geological and Natural History Survey as its new director.

1978

Landsat 3 was successfully launched.

The Wisconsin Unified Aerial Photography Program was approved by the state legislature.

Don't miss the extras

The news you don't read here

by Bob Gurda

Things have been busy in the news room lately. If you haven't visited our web site's news area, you have missed a number of stories that we couldn't cover here:

World-wide lightning patterns, animated through the months of 2002.

National Geographic bee broadcast on May 21

Federal policy on use of commercial satellite imagery expanded

Wis. DOT updates its website

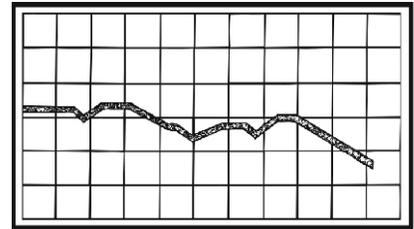


Affects of state budget woes run deep

SCO budget will decline

by Ted Koch

The mass media in Wisconsin has been saturated this year with news about the state government's looming budget deficit, so it will come as no surprise for you to read that our office will be taking



a budget cut. In fact, we absorbed a modest preemptive reduction about six months ago but the larger effect will be in the next two years.

The good news is that we don't expect to have to lay off any staff. The biggest savings item which will cushion the budget cut is our planned move to publish this newsletter via the web. Printing and mailing costs have risen year after year, so our use of electronic distribution will let us continue to provide most of our remaining services as before.

As part of the Department of Geography, the SCO's budget is administered by the College of Letters and Science, the largest college on the UW-Madison campus. The budget cut we have already taken earlier this year will help the College meet its financial targets for the first year of the two-year budget cycle beginning this July.

However, for the second year, the College is planning to reduce the Geography Department's and thus the SCO's budget, by further significant amounts. At this point the percent reduction has not been firmly established, but we have been working with a department-wide 10% target figure. The elimination of the Bulletin printing and mailing will go along way to meeting the SCO's share of the cuts.

SCO web team re-staffed

New faces at the SCO

by AJ Wortley

As the academic year draws to a close, we perform our annual custom of bidding adieu to recent graduates among the SCO student staff and introducing new faces to our ever-changing team. This spring we say goodbye to Fred Harris, Bonner Karger, and Kevin White, all three members of our undergraduate project team. Over the last year, they all contributed substantially to our on-line efforts with the SCO and SIAC websites, the WISCLINC Clearinghouse, our ControlFinder application, and information collection in the office.

To replace this talent, we have recently hired three new undergraduate student employees: Jesse Adams, Catrine Lehrer-Brey, and Ross Schendel.

At the grad student level, we are pleased that Adam Simcock will be returning for a second year.

One step to making a better map

Figuring out the figure-ground

by Bob Gurda

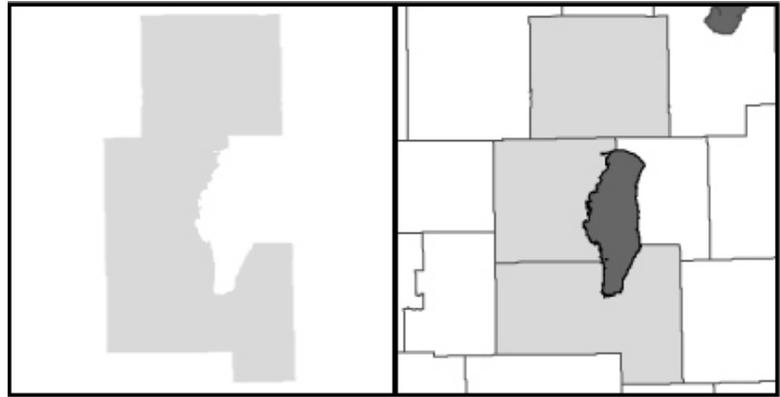
Successful map design relies on a host of factors, a group of which are common to graphic design disciplines in general. And one of the most basic concepts in this regard goes by the name of the “figure-ground relationship.”

Whether you are designing an advertisement, a statistical graph, a web page of family photographs, a television studio set, or a map, you need to pay attention to how the key graphic components of your design (the “figure”) contrast visually with their surroundings (the “ground”).

In maps, the usual concern with figure-ground is to achieve an effect where the graphic element of importance (let’s say, the state of Wisconsin) appears to float above the surrounding area.

There are a number of techniques you can employ, the most common being simply to make the surrounding area somewhat darker. The opposite approach—making the figure darker than the ground—sometimes works as well. A shadow effect can be helpful as can differences in hue. Take a look at a selection of maps and judge how figure-ground has been approached.

In a map, figure-ground also needs to be considered for smaller elements such as blocks of text, legends, etc. A technique may not be required depending on how prominent these elements need to be for your maps’s message to get through.



Maps of a three-county area illustrating poor vs. good use of figure-ground.

Figure-ground is just one of the dozens of topics that our office covers in our one-day Map Design Workshop. Keep an eye on our website for news of the next date it will be offered, or let us know if you’d like to be informed.

Study, learn, succeed

Once you begin to study figure-ground effects, you will be on your way to noticing what works and what doesn’t. Of course, mastering the figure-ground relationship isn’t always simple since there are many other competing considerations involved in a map and each map presents a different challenge. Nevertheless, your goal should be able to establish a solid figure-ground effect in every map.

Without this fundamental factor in place, you run the risk of making your map difficult to

decipher. Take a look at print advertising and you’ll quickly notice how the graphic designer has dealt with figure-ground. Poor figure-ground would confuse a potential customer and likely reduce sales.

Even the experts can fail

The other night I saw a TV wrap-up show following the day’s matches at the French Open tennis tournament. The network had decided to use an outdoor set with the almost dark evening sky of Paris in the background. Very chic. Unfortunately, one of the commentators was wearing a very dark blazer and had dark hair. The result was that her presence on the screen was limited to her face and hands since it was impossible to tell where her shoulders or hair ended and the night sky began. Whoops...no figure-ground!

Web-based newsletter in planning

Paper Bulletin about to end

by Bob Gurda

Our plans for converting to web-based publication of this newsletter have started to take some form. Over the next several months we will refine and test our ideas and methods before rolling them out. At this point we expect that the next issue (Summer ‘03) will be the final one printed on paper.

The first big decision has been made. The *Wisconsin Mapping Bulletin* will be presented directly through the web rather than in the form of a PDF. This method will make it easier for you to read while on line. You will be able to print individual articles associated with a particular edition of the *Bulletin*, and we may also enable the printing of the entire contents in one step—although don’t expect the result to look like the current published version.

When viewing the digital *Bulletin* you will first see an annotated table of contents from which any story will be only one click away. In the same initial view we will also give you easy access to the freshest parts of our web site: news briefs, calendar, jobs, etc.

We are also considering bi-monthly publication rather than the current quarterly pattern. This would result in more compact issues with more timely news.

Get ready to sign up

While the current (and previous) issues of the *Bulletin* will always be available to anyone who surfs over to our web site, we are planning to set up an e-mail announcement list so that, if you choose, you will be informed when a new issue becomes available.

Watch in our next issue, or later this summer on our web site, for instructions on how to sign up for the announcement service.

Q: *Where can I find maps showing the boundaries of public school districts?*

A: In general there is no single source for such maps that are up to date. This is because the boundaries are determined locally and can change over time. Tracking these changes and then producing maps often enough to keep the maps current would be a significant effort.

While school districts tend to serve the same areas year after year, various factors including housing development can cause the district boundaries to change. Any change would be negotiated between the adjoining districts. The districts may produce their own maps although distribution is likely limited.

Particularly in rural areas, the efficient routing of school busses can be a factor in drawing district lines. For instance, if new housing is developed in an area where an existing bus route has barely been able to handle the demand for seats on the bus, a district may attempt to swap the area with another district that has capacity on their busses.

If your interest is in determining which school district covers a particular parcel of land, a call to the district should result in the answer without requiring a map. Another source would be the county real property lister who needs to identify which land parcels are served by which school district in order to assemble the annual tax roll which then assigns the appropriate property tax mil rate arising from each school district. For areas where digital land parcel mapping is complete in-

cluding school district attributes, maps could be generated showing all parcels associated with a particular district—essentially creating a boundary map.

Within union school districts there will also be boundaries defining attendance areas for each level of school. These internal boundaries may change more often than the external boundary of the entire district, and the direct source for this information would be the school district.

At the state level, digital representations of school district boundaries are compiled infrequently. Depending on how current you need your information to be, this kind of map data may suffice. One such database is available from the Wis. Dept. of Administration's Office. Go to www.doa.state.wi.us and look for "Data Available from GIS Services."

Q: *I have been told that land I own is in an area where the Public Land Survey System was not surveyed correctly when the original government surveyors came through about 150 years ago, and that some time later another survey corrected the errors. Where can I find a map that shows the second survey?*

A: According to Rob Nurre of the staff to the Board of Commissioners of Public Lands (BCPL) in Madison, there indeed were cases where the original PLSS survey field work failed to meet standards. As a result the federal General Land Office (today's Bureau of Land Management) came in to resurvey certain corners and lines, sometimes decades after the original surveys.

As with the original PLSS survey notebooks and plat maps, these resurvey records are maintained by BCPL. See their web site at bcpl.state.wi.us or contact Rob at 608/261-8841.

Also, some county surveyors or private surveyors in your area may have copies of the original records.

Q: *Where can I get a map showing all of the lakes in Wisconsin?*

A: The simple answer is that no such map exists. The reason why this is the case tells a lot about mapping and the effect of scale.

A variety of maps are available that cover the entire state and show many of the larger lakes. A good example is the state highway map. Even at a size of several feet across, such a map shows Wisconsin at a scale of approximately 1:800,000. A feature that on the ground is roughly a mile across scales out on the map as only 1/12 of an inch. As a result, the great majority of Wisconsin lakes (which are far smaller than a mile across) are too small to depict on such a map without exaggerating their size (which would then cause closely spaced lakes to appear to overlap each other).

So, small lakes are simply left off maps that size. Larger maps are rarely produced because they become unwieldy. The solution is to map the area with a series of sheets. An example of a state map series that shows a majority of the lakes is DeLorme's *Wisconsin Atlas & Gazetteer* which is published at a scale of 1:150,000 and as a result can show features over five times larger than the highway map.

However, even the DeLorme depiction misses many of the smallest lakes. U.S.G.S. topographic maps at scale of 1:24,000 show any water body large enough to warrant the name "lake." The inconvenient fact is that there are 1154 map sheets in this series for Wisconsin, and taped edge to edge they would occupy about 70 feet square.

For this issue we talked with Mary Galneder who has led the UW-Madison's Robinson Map Library for the last 38 years. She will be retiring in August. The library's website is www.geography.wisc.edu/map_lib.htm.

In the 1960's there probably weren't programs designed to train librarians to manage map collections. How did you get into this field?

I was studying for a master's degree at Southern Illinois University and in my second year was given a graduate assistantship to work half-time with the map collection there. That became a full-time job when I graduated. I spent some of those summers at the Library of Congress in Washington, D.C. helping there and culling extra maps from their collection that they were making available to universities.

I spent several summers at the Library of Congress.

How did your move to Madison in 1965 come about?

The job here became available, and through Washington connections Professor Arthur Robinson heard about me and asked me to apply. The library at UW-Madison had been in operation for a long time, primarily as a teaching collection, and had begun to grow substantially after World War II.

Did the Robinson name become attached to the library because he was its strongest proponent?

Professor Robinson was very supportive of the library, but I gather that through the previous decades the entire faculty depended on the map collection as teaching aids. The library was named for Robinson in 1982 in honor of his having become one of the main figures in American cartography.

The library's holdings doubled during my tenure.

You mentioned that the library had grown in holdings prior to your arrival. Did that trend continue through your tenure?

I estimate that the library's holdings doubled over my years here. The greatest increase was in aerial photography. We now have over 230,000 individual aerial photographs. Most of these collections were donated by government offices which had acquired fresh photographs. We certainly have the largest collection of Wisconsin aerial photographs of any library.

While we do accept some minor donations from individuals, the other major source of acquisitions has been depository programs from the U.S. and Canadian governments, both civilian and military mapping organizations. We receive copies of all new maps produced by such

I have some special library projects to work on in my retirement.

organizations. Some of our USGS holdings go back into the nineteenth century. We now have over 275,000 maps.

How have things changed over the years, and what has stayed the same?

The biggest change has been the emergence of digital mapping and GIS. Of course this trend has just started and how it will change map libraries remains to be seen. Regardless, the printed maps in our collections will continue to be valuable resources even as some of them are transformed into digital form through scanning. We do have a scanner in the library that visitors can use to scan maps and aerial photographs.

What has remained unchanged throughout is a shortage of resources to manage all these materials.

In your retirement do you plan to travel with map in hand?

Oh, yes. I have plans to spend some time in the desert southwest as well as Europe. Madison will be home, though, and I have some special library projects here that I want to finish.

One is an annotated bibliography of publications dealing with the management map libraries and their holdings. Another is a listing of Wisconsin place names that includes historical names that have not appeared on published maps for decades. And, I want to build a database to index the library's collection of map postcards that people have sent to us over the years.



Mary Galneder explains a variety of maps to a group of schoolchildren visiting the Robinson Map Library.



Active in surveying/mapping for decades

Haverberg retires from DOT

by Bob Gurda

After almost 34 years at the Wis. Dept. of Transportation, John Haverberg has decided to retire from state service. In addition to his duties in a range of positions, John has been professionally active on the larger scene.

Haverberg began his career with WisDOT shortly after receiving his B.S. in Civil Engineering from UW-Madison in 1969 where he studied with Eldon "Red" Wagner, Jim Clapp, and Jim Scherz. He returned to those roots in later years through research projects with Al Vonderohe and Frank Scarpace.

At WisDOT, John began as a geodetic surveyor, then rose through a variety of positions to lead the Technical Services Section in the Madison office where he oversaw all agency surveying and photogrammetry. He retires as head of the Bureau of Highway Development.

We have worked with John for many years through several connections. He served on our office's advisory committee from 1987-2002. He was his agency secretary's designee to the Wisconsin Land Information Board for its first four years.

On the national scene, John served on the Transportation Research Board's Committee on Surveying for twelve years including three as its chair.

In looking back over his career, Haverberg notes the profound effects of technological change including GPS, analytical and softcopy photogrammetry, and both office and field use of computers and data collectors. John was instrumental in development of the Wisconsin HARN, the shift from NAD 27 to NAD 83, the Wis. County Coordinate System, WISCON software, and the Height Modernization Project.

We know Hank from NSGIC

Geospatial One-Stop director announced

by Ted Koch

Hank Garie from New Jersey is the new Geospatial One-Stop Program Director. That program is one of 24 Federal electronic-government initiatives sponsored by the Office of Management and Budget. The objective of Geospatial One-Stop is to provide improved utility of and access to data collected by all levels of government; to expand partnerships among Federal, State, and local governments; and to reduce duplication and save money.

Garie has over 16 years experience in building and coordinating GIS in New Jersey State government and local communities. For the past 4 years, he has been serving as the New Jersey State GIS Coordinator, directing a program that promotes the use of GIS technology and development of statewide spatial data resources.

Hank is a past president of the National States Geographic Information Council (NSGIC), an organization of States committed to efficient and effective government through the adoption of geographic information technology.

To learn more about Geospatial One-Stop, visit www.geo-opne-stop.gov/.

(source: *Federal Geographic Data Committee*)

Announcement forthcoming

Map Librarian search to begin

by Bob Gurda

As we go to print, we have been informed that the UW-Madison has approved the Geography Department's request to seek a replacement for the soon-to-be vacant position of map librarian at UW-Madison. As more specific information becomes available we will post it in the "News" section of our web site.

Will coordinate, promote at UW-Madison

GIS Certificate Prog. Mgr. hired

by Bob Gurda

Karen Tuerk has been selected by the Geography Department at UW-Madison to be the manager of its GIS Certificate Program. The program, begun in 2000, provides a



post-graduate certificate for students from diverse academic backgrounds.

The manager position was recently created to provide services to students and to promote the program. Tuerk, a native of Delaware with a background in biological science and non-profit organization development, is herself a 2001 graduate of the GIS Certificate Program as well as a 2003 graduate of the UW-Madison's Professional M.S. Program in Environmental Monitoring. While a student she has done work with both the Wis. Dept. of Natural Resources and the UW Sea Grant Program.

Among Tuerk's early projects will be developing promotional and orientation materials, organizing activities surrounding GIS Day, and tracking alumni of the program. We expect to be working with her on some common goals relating to campus-wide GIS coordination.

Students in the certificate program are a varied group including those fresh from receiving a bachelor's degree, some looking for skills as part of a career change, and others gaining advanced training through employer arrangements. The program can be completed in one year including an internship. Learn more at www.geography.wisc.edu/gradProgramCert.html.

Winters haven't been as extremely cold

Plant hardiness zones creep northward

by Bob Gurda

Serious gardeners know to consider a perennial plant's hardiness zone rating before expecting blooms year after year. Although a single brutal winter may kill a specimen that is marginally adapted to an area's weather, climate averages are a good guide to plant selection.

The U.S. Dept. of Agriculture has recently revealed the second revision of its *Plant Hardiness Zone Map* which was published in 1965 and first revised in 1990. The latest map is the first to be designed as an electronic document.

The new map was produced in cooperation with the American Horticultural Society and draws on data from 7,000 weather stations from 1986 through 1990. The data used is the coldest temperature for each winter which is then averaged. The point values are then used to interpolate lines that mark the boundaries of hardiness zones.

A related *Plant Heat-Zone Map* shows zones of average high annual temperatures, another important factor relating to plant survival.

To see the maps, visit www.ahs.org and look under "Publications."

(source: *The Capital Times*, 4/5/2003)

FGDC seeks comments by July 31

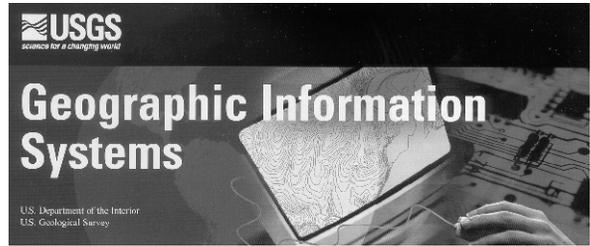
Address Content Data Standard drafted

by Bob Gurda

The Federal Geographic Data Committee has been at work on another in a series of standards, this time dealing with the data contents for address databases. Their draft of this proposed standard is out for review with comments due back by July 31. For details, go to www.fgdc.gov/standards/status/sub2_4.html.

Addresses are a common way to organize information on properties, structures, and residents. By linking an address to its geographic position, either as a simple point or at a place along a road network, or recorded as a range of values between two points, various computerized applications can be built to facilitate routine functions and spatial analysis.

However, there are many different ways in which address information can be arranged in a database, so standards are helpful in integrating these databases to gain efficiencies and effectiveness.



Updated from 1992; now also on the web

USGS publishes new GIS poster

by Bob Gurda

A popular educational poster explaining the workings and applications of GIS has been revised by the U.S. Geological Survey. Titled simply *Geographic Information Systems*, the poster as originally published in 1992 has been out of print for several years.

Printed on both sides, the folded document opens up to 21.5" high x 34" wide, the same size as the first edition. One side covers the functions and inner workings of GIS and its data; the other goes into applications and graphic display techniques. About half of the original illustrations are continued in the new edition, the remainder being new.

Copies of the poster are free. For use on a bulletin board, remember to get two copies so that both sides will be visible. To order, contact the USGS at 1-888-ASK-USGS; the item number is 16424. For people visiting our office we have a small supply.

The content of the poster is also available for viewing as a long web page at erg.usgs.gov/isb/pubs/gis_poster/index.html. Note that in this format the information and illustrations are not laid out to replicate the paper version so printing on a large-format printer will not result in a plot that looks like the poster.

Leaders speak out on strategies

Congress hears geospatial technology experts

by Ted Koch

Well-known experts representing the nation's geospatial information community had the opportunity on June 10 to present their views to a congressional committee in the Nation's capital. The invited testimony was divided into two panels, one focusing on federal programs and the other on homeland security. Among those appearing before the committee was the Director of Information Management for the U. S. General Accounting Office, the president of the Management Association for Private Photogrammetric Surveyors, the Office of Management and Budget's Administrator for E-Government and Information Technology, The president of ESRI, and the president of the National States Geographic Information Council. Written testimony from the hearing can be viewed on the NSGIC Website at www.nsgic.org/hot_topics/news.cfm.

For seamless access and delivery: gisdata.usgs.net

USGS' GISDATA Map Studio

by AJ Wortley

Recently our featured-website column has focused on Wisconsin webmapping efforts, particularly at the state level. With local activities moving forward on prototyping a Wisconsin Land Information System infrastructure, our focus has turned to efforts to integrate and make accessible what initially start out as "islands" of webmapping sites and services. The United States Geological Survey (USGS) GISDATA Map Studio site provides an excellent example of what is possible in the near term with an eye toward a sustainable future.

The USGS has been working hard on new ways of doing business - spatially. They have lots of data, applications, and customers. At their website, gisdata.usgs.net, you'll see pieces of a web service and application infrastructure that will eventually support current federal initiatives like the USGS' own National Map, the multi-agency Geospatial One-Stop, and overall, the completion of the National Spatial Data Infrastructure (NSDI). But pending full implementation, the GISDATA site acts as an interim portal of sorts to on-line seamless data delivery, services, and applications built on spatial databases hosted by EROS Data Center. In fact, the site itself explains that its intention is to eventually "work its way out of a job" once custodianship of the data is taken over by more "place-based" partnerships providing access through integrated and interoperable paths.

Data services, delivery, on-line applications

From spatial web services (background map services) to seamless custom-data delivery to application interfaces, this site does a great job of separating and explaining various webmapping components. EROS originally created the site to manage project databases supporting GIS applications and later for research efforts for access and delivery of seamless geospatial data, including both national-extent data series and more regional data that has been processed for particular projects or applications. Interoperable standards and protocols (those of the Open GIS Consortium) and well-designed interfaces for specific tasks are all part of this research.

One of the most impressive aspects of this site is the clear distinction between the seamless data-service infrastructure being built and USGS' ability to re-use these services in a variety of applications and interfaces linked from the site. This early demonstration of efficiencies realized through web enablement and re-use of data provides examples for the future.

WLIS parallels

In a recent meeting, I heard, "What does WLIS look like?" GISDATA Map Studio gives us one example of what a developing system of services "looks like" in the interim, understanding that a system doesn't look like anything until it has been utilized in application interfaces built on top of the "system". In other words, what WLIS looks like today through one lens may not be what it looks like tomorrow, but the quality and integrity of the spatial data and services utilized should remain constant, standards-based, and interoperable throughout this developing process.

Agency needs and budgets steer direction

Federal imagery acquisition changing

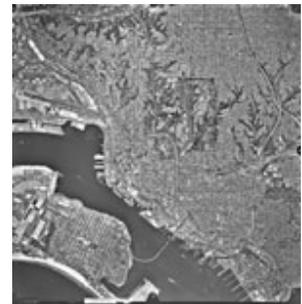
by Ted Koch

Federally funded programs to acquire aerial imagery, and to convert this imagery to digital orthophotos, continue to undergo significant changes. Flux is occurring in product types, when they are acquired, and the technologies utilized.

The latest news comes from a recent meeting of the National Digital Orthophoto Program Steering Committee which I attended. The committee includes representatives from eight federal agencies plus the National States Geographic Information Council. I attend as the Council's representative.

NAPP condenses even more

The prime federally coordinated imagery program of recent years, the National Aerial Photography Program (NAPP), is shrinking dramatically, both in funding and amount of imagery collected. For the past dozen or so years, NAPP has sought to plan and carry out systematic aerial photo coverage over the entire country. At one time NAPP operated on a five-year national cycle, more recently stretched to seven.



NAPP photo (San Diego, CA)

This year NAPP will obtain photos for only four states. The federal agricultural agencies have reduced NAPP support dramatically, U.S. Geological funds have been diverted to imagery collection of high priority urban areas for homeland security purposes, and states have shifted their interest toward larger scale (more detailed) imagery for producing digital orthophotos. NAPP coverage over Wisconsin was acquired in 1992 and again in 1998. No future coverage is planned.

Imagery and orthophotos going fully digital

The diminishing role for NAPP photography also means that fewer traditional digital orthophoto quarter-quads (DOQQs) are being produced. Due to the changing imagery and orthophoto product needs of the federal agricultural agencies (primarily the Farm Services Agency), the highest percentage of federal money now goes into the National Agricultural Imagery Program (NAIP). For more on NAIP, see Fall, 2002 issue of the *Bulletin*.

The NAIP program acquires summer, leaf-on imagery for crop-compliance programs with digital ortho processing happening on a very short timetable. NAIP is also pushing technological development by beginning to contract for digital photography rather than the traditional film-based product. This year alone, NAIP is acquiring digital images over all of Kansas and one-third of Iowa.

To meet these requirements, private-sector aerial imaging firms are beginning to install very sophisticated, multi-function digital cameras. One camera recently acquired by several U.S. firms, and a Canadian firm doing business in the U.S., can simultaneously record black-and-white panchromatic, natural-color, and color-infrared images.

2003

July 7-11, **ESRI International User Conference** will be held in San Diego, CA. Visit www.esri.com/events/index.html.

July 24, **Wisconsin Land Information Association** will sponsor an all-day workshop on *Remote Sensing: Basics and Applications* that will be held at the Hotel Mead & Conference Center, Wisconsin Rapids, WI. Contact WLIA at 800/344-0421 or visit www.wlia.org.

August 10-16, **International Cartographic Conference** and 12th General Assembly of the International Cartographic Association will be held in Durban, South Africa. Visit www.icc2003.gov.za/

September 14-17, **Wisconsin Counties Association 65th Annual Convention** will be held in LaCrosse, WI. Contact: 866/404-2700 or visit www.wicounties.org.

September 15-18, **NSGIC 2003 Annual Conference** will be held at the Nashville Marriott Hotel, Nashville, TN. Contact: 615/889-9300 or visit www.nsgic.org.

September 17-19, **51st Annual State Meeting of the Wisconsin Real Property Listers Association** will be held at The Lodge at Crooked Lake, Siren, WI. Visit www.co.ozaukee.wi.us/wrpla.

October 8-10, **Minnesota GIS/LIS Consortium Annual Conference** will be held at RiverCentre's Touchstone Energy Place in St. Paul, MN. Contact: 651/203-7242 or visit www.mngislis.org.

October 11-16, **URISA 2003 Annual Conference** will be held in Atlanta, GA. Contact 847/824-6300 or visit www.urisa.org.

October 16-17, **Wisconsin Land Information Association** membership meeting will be held at the House on the Rock Resort in Spring Green, WI. Contact WLIA at 800/344-0421 or visit www.wlia.org.

October 28-30, **Digital Terrain Data and 3D Visualization**, sponsored by ASPRS and MAPPS will be held in the Charleston Convention Center, Charleston, SC. Visit www.asprs.org or www.mapps.org.

November 19, **GIS Day**. Visit www.gisday.com for registration and information.

To see a more extensive calendar of regional events, and to use hot links to other calendars, visit the SCO website.

The Wisconsin Land Information Association presents . . .

Remote Sensing: Basics and Applications Workshop
Wisconsin Rapids/Hotel Mead & Conference Center

July 24, 2003 from 8:30 am - 4:00 pm

Remote sensing, which is the collection of earth data, usually by sensors riding on aircraft and satellites, encompasses many technologies. In this workshop, you'll have the opportunity to learn the basics, hear about the newest developments, participate in presentations on remote sensing applications related to agriculture, forestry, land conservation and water, and view an exhibit featuring interactive satellite data.

Workshop presentations include several nationally known remote sensing experts:

- Thomas Lillesand, *UW-Madison Professor & Director, Environmental Remote Sensing Center*
- Mike Renslow, *an expert in the field of LIDAR and Vice-President of Spencer Gross, Inc. a photogrammetric mapping and imaging company located in Portland, Oregon.*
- Plus, other remote sensing data users from within the state.

To register for this informative workshop, contact the WLIA at 800/344-0421 or visit www.wlia.org. Workshop fee is \$40 for WLIA members or \$50 for non-members.

Program Agenda

8:30 - 9:00 Registration & Cont'l Breakfast
9:00 - 9:15 Introduction

General Session

9:15 - 10:30 Overview of Remote Sensing: Basic Principles and Aerial Systems
10:30 - 10:45 Break*
10:45 - 11:45 Emerging Remote Sensing Technologies and Satellite Systems: IFSAR; LIDAR; digital aerial cameras; satellite imagery (governmental and commercial); applications.
11:45 - 1:00 Lunch (*incl. in registration*)*

Two Concurrent Sessions

Session 1: 1:00-3:45
Acquisition & Applications of LIDAR for GIS Applications

Covers fundamentals of airborne LIDAR including: system specifications, role of airborne GPS and inertial measurement systems, calibration and validation, etc. The second part focuses on applications including: terrain models, forestry,

hydrographic analysis, riparian vegetation identification, steep-slope and flat-terrain surface analysis, and utility-corridor mapping.

Session 2: 1:00-3:45

Imagery Applications: Satellites & Orthos
1-1:30pm Wis. Land Cover from Satellite Images
1:30-2pm Lake Water Quality Assessment - Satellites & Citizens
2-2:15pm Break*
2:15-3:15pm Use of Landsat Data for Agricultural Planning in Wis.
3:15-3:45pm County Land Conservation Dept. Uses of Digital Orthos
3:45-4pm Conclusion & Evaluation

** Interactive exhibit of satellite remote sensing data available during break and lunch, staffed by the UW-Madison Environmental Remote Sensing Center*

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), A.J. Wortley, Outreach Specialist (608/265-8106), Brenda Hemstead, IS Resource Support Technician (608/263-4371), and Ana Rumm, Financial Specialist (608/265-9368). We also employ several part-time graduate and undergraduate students.

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

publishes the Wisconsin Mapping Bulletin, catalogs, guides, brochures, and other documents and maintains a web site to inform the mapping community.

inventories mapping practices, methods, accomplishments, experience, and expertise, and further acts as a clearinghouse by providing information and advice in support of sound mapping practices and map use.

participates on committees, task forces, boards, etc. The State Cartographer is one of the 13 voting members of the Wisconsin Land Information Board and one of 16 voting members on the Wisconsin Land Council.

develops experimental and prototype products.

serves as the state's affiliate for cartographic information in the U.S. Geological Survey's Earth Science Information Center (ESIC) network.

About our Web site...

Here you will find links mentioned in *Bulletin* articles, information on a wide range of mapping topics, news items, functions and activities of the SCO, our on-line aerial photography catalog, a calendar of events, and links to related web sites.

www.geography.wisc.edu/sco

About WISCLINC Web site...

On the Wisconsin Land Information Clearinghouse (WISCLINC) site, you can search and read metadata files, download certain data files, learn about our continuing work in this area, and link to other state clearinghouses.

www.wisclinc.state.wi.us

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 August 6, 2003.

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