

# WHPGN COORDINATES SET TO ARRIVE FROM NGS

As of our printing deadline, the National Geodetic Survey (NGS) was expected to be in the process of delivering final horizontal coordinates for the Wisconsin High Precision Geodetic Network (WHPGN). As part of an agreement entered into with the Wisconsin Department of Transportation (DOT) in 1988, NGS agreed to make final adjustment, furnish descriptions of the stations, and publish the entire network of 80 stations. DOT and its contractor for global positioning system (GPS) services completed its work last year and turned the results over to NGS.

When NGS does release the information for the basic network to the state, this will not include readjusted coordinates for the approximately 2200 1st and 2nd Order hori- zontal control points that have been in place for some years. These coordinates are scheduled to become available about 60 days after the primary WPHPGN coordinates are issued.

The new coordinates are expected to be fairly close to those issued several years ago as part of the redefinition of the horizontal control network over all of North America. That issuance was called NAD 83. This new set of coordinates will be called NAD 83 (1991), and the earlier version will be changed to the name NAD 83 (1986).

Numerous local governments and others in the state are extremely interested in using the new coordinate values which will represent major improvements in the horizontal control situation in many areas. In particular, various control surveys using GPS and tied to the new WHPGN points have been conducted at the local level over the last 2 years. These densification activities cannot provide final adjusted coordinates until the NGS announces the coordinates they have determined for the primary network.

The State Cartographer's Office is working with DOT and the NGS State Advisor to develop practical means to distribute information on the primary network and readjusted coordinates for the additional 2200 stations.



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# WLIB SETS GRANT CRITERIA

The Wisconsin Land Information Board has met three times since our last report: April 11, May 6, and June 10. The WLIB is scheduled to meet again on July 8, August 5, and September 9th.

The Board's major recent actions have been involved with designing the grants program, addressing proposals to change the state statutes relating to geodetic datums, considering plans submitted by counties, establishing a structure of standing committees, and evaluating the role of NAPP photography and its potential derivative of statewide digital orthophotography in the broader goals of the state Land Information Program.

### **Grant Evaluation Criteria**

After discussion at both of the last two meetings, the WLIB voted without dissent on May 6 to adopt a draft set of procedures, standards, and criteria by which to evaluate grant proposals submitted by or through county land information offices. The criteria adopted were modelled on the results of a "town meeting" held in February at the Annual Conference of the Wisconsin Land Information Association.

The following factors would be evaluated, giving rise to a score for each factor. The maximum total score is 100 points.

Integration and Cooperation	30
Foundational Element Focus	25
Consistency with Plan	15
Likelihood of Success	15
Completed Project	15

In addition to the above potential 100 points, an application for the first grant to be awarded to any entity in a particular county would receive an additional 15 points. This "bonus" score could be used only once per county, and would be exhausted upon the award of the first grant in each county.

The first grant application acceptance period would be scheduled for August 1-31 of this year, with subsequent application periods December 1-31 and June 1-30 each year.

At the June meeting, Executive Director Bill Holland reported that Department of Administration counsel had advised that the Board's policy on grants be formalized as Administrative Rules. The schedule for issuance of such rules is not completely clear at this time. There may be public hearings to receive comments as part of the rule-making process.

The policy document references several statutory prerequisites for grant applications: they must be submitted through the county land information office(s); the county must first have a plan approved by the WLIB; grants cannot exceed \$100,000 and a 25% local match must be pledged.

#### **Statutory Change for Datums**

At its April 8 meeting the WLIB voted to support revision of Section 236.18 of the Wisconsin Statutes, in order to allow use of horizontal State Plane coordinates based on NAD83 in addition to the currently specified NAD27. Specifically, this policy supports use of the North American Datum of 1983 as adjusted to the Wisconsin High Precision Geodetic Network. It is expected that a bill will be drafted soon for consideration by the legislature during its current session.



### **County Plans Considered for Approval**

The Board voted on May 6 to approve the Winnebago County Plan for Land Records Modernization. This Plan had been submitted in February, and modified somewhat prior to final Board approval. In his transmittal letter to the WLIB, County Executive Paul Stevenson characterized the Winnebago Geographic Information System (WINGS) project as "...the single most important project I have implemented in my eight years as Executive." The WINGS project includes major participation from the four cities in the county plus a large utility company.

On June 10th, the WLIB approved plans submitted by Oneida and Brown Counties. This brings the total number of approved countywide plans to 5. Others are expected to be considered at upcoming meetings.

### **NAPP** Flight

At both the May and June meetings, the Board discussed the value and potential alternatives to the federal NAPP opportunity. With a 50% matching contribution of \$180,000 Wisconsin could have statewide leaf-off (springtime) aerial photography in 1992. Numerous counties and other organizations have been sending letters of support for the NAPP flight. The Board asked the State Cartographer's Office to continue efforts to assemble commitments for funding from any possible source within the state. There is an August deadline to arranging such a funding package.



### URISA Chooses Milwaukee for 1994 Conference

The Urban and Regional Information Systems Association (URISA) has selected Milwaukee as the site of its summer 1994 Annual Conference. URISA has over 3,000 members in North America, and has been growing at a strong and steady rate. Wisconsin membership in URISA exceeds 75.

Many Wisconsin people have been active nationally in URISA, including Past Presidents Bill Huxhold (Milwaukee) and David Moyer (Madison), former Board member Ben Niemann (Madison), and former Workshop Coordinator Randy Gschwind (Milwaukee). The recently initiated URISA Journal is edited in Madison and published by the University of Wisconsin Press.

The record of service to URISA by Wisconsinites, plus GIS and LIS developments in the state were important factors in URISA's choice of Milwaukee. By the time of the 1994 event, the Wisconsin Land Information Program will be 5 years old, and implementation of countywide plans and modernization grants should be in full swing.

Recent URISA Annual Conferences have been held in Los Angeles, Fort Lauderdale, Boston, Edmonton, and San Francisco.

### BLM Plans Automation of Original Patent Records for Entire State's Lands

The Bureau of Land Management (BLM) in the U.S. Dept. of Interior has scheduled the automation of the original patent records for lands in Wisconsin. The project is planned to begin about October 1, and to take about 6 months.

The project involves scanning of documents and development of a database containing key information on each document. When completed, these automated records will be more easily accessed when needed to document the first link in the chain of title for parcels of land which are legally described with reference to the Public Land Survey System (PLSS).

Over one hundred years ago, the PLSS was established across virtually all of Wisconsin by surveyors' measurements and placement of physical monuments at key locations. The PLSS was designed to mark and index lands to be transferred from the federal government to individual property owners. It uses a grid-like pattern composed of townships, ranges, and sections. Many town and county boundaries follow PLSS lines.

The original transfer (or "patent") of each parcel of land laid out within the PLSS was documented in records maintained by the General Land Office (renamed the Bureau of Land Management in the 20th century). Various local outposts of the General Land Office existed during the most active years of land transfer. Typically a 1-square mile "section", or a "quarter-section" (approximately 160 acres) was the unit of land transferred. The BLM maintains original copies of the patents, but these copies have become fragile through handling and storage over time. There are approximately 160,000 individual patent records for Wisconsin lands.

To preserve the informational value of the patents, and to minimize further damage from handling, the BLM will be scanning these historical documents to record their electronic equivalents. These computerized images can be coded onto compact disks (CD-ROM) for storage, distribution, and access.

As part of the automation process, key information for each patent will be entered into a computerized database. This method of organization simplifies extracting the appropriate scanned image from the huge library of images. The key information includes PLSS reference (township, range, section), name of the person initially taking title to the land (the patentee), date, acreage, location of the General Land Office where the patent was issued, modern county name, and the patent authority (e.g., cash sale, military warrant, homestead)

When the system becomes fully operational, users will be able to dial-in via a desktop computer modem to access BLM's database in Alexandria, Virginia. This method will not provide a glimpse of the scanned image of the document, but once a particular patent of interest is identified through a customized database search process, a laser-printed copy of the scanned image will available from BLM by mail for a nominal fee. A fax service may also be established. The full range of services and associated fees has not yet been determined. Alternative access at the state or local level may be developed.

Similar automation is already done or in progress for the states of Arkasas, Minnesota, and Michigan.

For further information, contact Bill Fulcer of BLM's Milwaukee office at 414/297-4430.

Editor's Note: We will continue following this story as it develops.



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## PUBLICATIONS

#### **SCO County Catalog Developments**

The following is a brief update on County Cartographic Catalog production at the SCO:

MARATHON & PORTAGE (2nd edition): in production, scheduled for printing in June 1991 and distribution in July 1991.

GREEN LAKE, MARQUETTE & WAUSHARA: in production.

### **UW Cartographic Lab Publications**

<u>University of Wisconsin Aboretum Brochure</u>. A full-color two sided brochure consisting of three maps, color reflective art, photographs and text. The brochure displays the resources available to the general public and serves as a guide for those wishing to explore this valuable natural environment. Won several awards. Copies of the brochure can be obtained from the Arboretum Office or from the Trails Office, 700 Ray-O-Vac Drive, Madison, WI 53711.

North Country Trail Brochure. Produced for the National Park Service. A full-color, 2 sided brochure of the trail and the states it passes through. This brochure consists of two maps, 24 photographs and descriptive text on the trail and important features encountered along the way. The brochure can be obtained by writing the National Park Service, 1709 Jackson Street, Omaha, NE 68102-2571.

National Parks in the Midwest, Produced for the National Park Service (NPS). A full-color, 2 sided brochure of all the NPS parks in the midwest. This brochure consists of two maps, 20 photographs and descriptive text of all the parks in the Midwest Region. The brochure can be obtained by writing the National Park Service in Omaha (see above).

### Cartography and GIS Career Guide

The American Cartographic Association recently released its new Career Guide "Cartography and Geographic Information Systems". It discusses cartography, GIS, types of maps, making of maps, where cartographers work, etc. To obtain a copy write to the American Congress on Surveying and Mapping, Suite 100, 5410 Grosvenor Lane, Bethesda, MD 20814 or call 301/493-0200, fax 301/493-8245. Costs: 1-5 are free; 5 + are 75 cents each.

### **County Plat Books**

The following Wisconsin County Land Atlas and Plat Books are now available for 1991: Adams, Burnett, Clark, Dane, Eau Claire, Green, Jackson, Marathon, Marinette, St. Croix, and Sawyer Counties. They sell for \$25.00 plus tax and shipping. For ordering details contact: Rockford Map Publishers, Inc., P.O. Box 6126, Rockford, IL 61125, phone (orders only) 800/447-2222 or for customer service information call 815/399-4614.



### **Civil War Maps and Atlases**

The Library of Congress has recently issued its second edition of the <u>Civil War Maps: An Annotated list of</u> <u>Maps and Atlases in the Library of Congress</u>. It includes detailed descriptions of 2,240 maps and charts and 76 atlases and sketch books, chiefly in the custody of the Library's Geography and Map Division.

Accompanied by ten full-color plates and a number of black and white map reproductions, the handsome 8 1/2" x 11 1/4" clothbound book demonstrates how important maps and charts were to the forces of both the North and South during the conflict that threatened to rip the nation apart.

For ordering details contact the Superintendent of Documents, Government Printing Office, Washington, DC 20402. (Cite title of book and stock number 030-000-00209-1 when ordering.) The price is \$46, including postage and handling.

#### Congressional Land Information Report Becomes Final

As mandated by the Federal Land Exchange and Facilitation Act of 1988, the Dept. of Interior has forwarded *A Study of Land Information* to Congress.

The report, prepared over a 12-month period, was the work of geographic information systems/land information systems (GIS/LIS) professionals, representatives of state and local governments and federal land management agencies. It describes the importance of land information as a national asset and the need for federal leadership in the development of land information systems. It recognizes the fundamental role of local government in the collection and maintenance of basic land records.

The report also discusses the need for standards which will allow the necessary interaction among various levels of government and with the private sector. Describing specific actions which should be taken, it should serve as a basis for the development of the policy and organizational structures which are necessary for a common approach to land information in the United States. The report states clearly that if this is not done, the need for land information will drive its development regardless of common needs, cuasing unnecessary expense and time for thousands of organizations.

For further information contact: John Moeller, Director of Support Services, Bureau of Land Management, Dept. of Interior, Washington, DC 20240.

## PUBLICATIONS

# Photogrammetry, Remote Sensing, and GIS Publications

Listed below are new publications available from the American Society for Photogrammetry and Remote Sensing (ASPRS) that focus on photogrammetry, remote sensing, and GIS.

Protecting Natural Resources with Remote Sensing covers integration of remote sensing and GIS databases, remote sensing for fire monitoring, Soviet remote sensing, high-altitude aerial photography for monitoring and assessment, videography, digitizing standards, and global poisitioning system applications. \$95; Stock #4523.

Advances in Spatial Information Extraction and Analysis for <u>Remote Sensing</u> presents image processing in the spatial context of a topologically structured GIS; satellite and other raster data for constructing vector databases; expert systems for thematic mapping and monitoring resources; and cartographic information as a structuring principle for image segmentation. \$60; Stock #4522.

<u>Fundamentals of GIS: A Compendium</u> is a single-source reference for the basics of GIS. It's a collection of 19 of the best articles dealing with the funamental concepts of GIS. Chapters include an introductin to GIS; data capture, manipulation, and quality; trends; applicatinos and GIS literature and newsletters. \$60; Stock #4616.

Multipurpose Cadastre: Terms and Definitions presents a list of "core" terms and definitions that represent a good beginning to a common vocabulary for use in GIS/LIS. Includes terms used in automated mapping, facilities management, land records modernizatin, natural resource management systems, and multipurpose land information systems. \$5; Stock #4808.

Send all orders to ASPRS, P.O. Box 1269, Evans City, PA 16033 or call 412/772-0020; or FAX 412/772-5281.



# **USGS PUBLICATIONS**

The following miscellaneous field studies map is available from the U.S. Geological Survey, Map Distribution, Federal Center, Box 25286, Denver, CO 80225, phone 303/236-7477. When ordering use the reference number given for each map.

<u>MF-1229</u>. Seismicity map of the State of Wisconsin, by C.W. Stover, B.G. Reagor and S.T. Algermissen. 1980 (1990). Scale 1:1,000,000 (1 inch = about 16 miles). Sheet 40 by 25 inches. (reprint). \$1.50.

### **USGS/DMA Metric Topographic Maps**

The following 15-minutes quadrangle maps are newly available: Black River Falls, Hatfield, LaFarge, Viroqua. These maps are part of the metric series of topographic quadrangles produced by the U. S. Geological Survey and the Defense Mapping Agency (DMA). All are at a scale of 1:50,000, cover 15 minutes of latitude and longitude, and cost \$2.50 each. The information used to construct these maps was collected in 1986. The Black River Falls and Hatfield maps have contour intervals of 10 meters; the LaFarge and Viroqua maps have contour intervals of 20 meters. See address above for ordering.

Note: For all USGS orders, make checks payable to "Dept. of the Interior - USGS". For all <u>map</u> orders less than \$10, include an additional \$1 for postage &handling.

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## DIRECTORY OF STATE GIS COORDINATION ACTIVITIES

The Council of State Governments plans to publish a State Geographic Information Activities Compendium, describing geographic information system-related activities in the States. Designed as a resource guide for State officials and others, the Compendium will include an annotated database of state contacts; examples of state directives (executive and legislative( a directory of activities in the states; lists of existing policies, plans, reports, and standards; status of digital data development; and informal and formal state coordination groups. It will also contain resource commitments such as funding and staffing levels, and information on local government assistance programs.

The Compendium is being developed with assistance from the American Association of State Highway and Transportation Officials, Federal agencies, and the States.

The Compendium is scheduled for release in July, 1991. Cost \$79 with a 30% discount to state officials. To order contact: Order Dept., Council of State Governments, 1-800-800-1910.

(source: R. Steven Brown, Council of State Governments)

## **TOPO MAP SALES OUTLETS IN WISCONSIN**

There are many sales outlets for U.S.G.S. topographic maps throughout the state. Most outlets stock quadrangles for their immediate geographic area only. Some dealers may limit themselves to popular high-volume sales topo quads, while others have selections whose coverage ranges from local to multi-state, and may include special maps. Be sure to write or call to verify what is available, the price per quad, postage costs, and delivery times.

Please notify the State Cartographer's Office of any additions or corrections to this list. Information is current as of February 1990. We make no claims that the following list is complete. This list is in alphabetical order by city name.

#### Antigo Sport Sales 725 Superior Street Antigo, WI 54409 (715) 623-7666 Local Maps

American Digital Cartography, Inc. 715 West Parkway Boulevard Appleton, WI 54914 (414) 733-6678 United States Maps

#### Northward Bookstore 410 West Front Street Ashland, WI 54806 (715) 682-9772 Local Maps

Campus Bookstore Beloit College 700 College Street Beloit, WI 53511 (608) 365-1697 Local & State Maps

R.H. Batterman Co., Inc. 2857 Bartells Drive Beloit, WI 53511 (608) 365-4464 Local Southern WI & Northern IL & Upper WI Maps

Forest Republican Publishers, Inc. 108 W. Madison Street P.O. Box 367 Crandon, WI 54520 (715) 478-3315 Forest County Maps

Vilas County Clerk Courthouse N. Main Street, Box 369 Eagle River, WI 54521 (715) 479-3600 Vilas County Maps

Northland Map Company 711 South Fisk Green Bay, WI 54304 (414) 494-4904 Statewide Maps

Risberg Recreational Real Estate, Inc. P.O. Box 551 Hayward, WI 54843 (715) 634-2656 Local Maps Real Estate Description Dept. Jefferson County Courthouse 320 South Main St. Rm. 109 Jefferson, WI 53549 (414) 674-2500 Jefferson County Maps

Clarkson Map Company 1225 Delanglade Street P.O. Box 218 Kaukauna, WI 54130 (414) 766-3000 State-wide Maps & Oneida Co. Maps

Rusk County Land Conservation Courthouse, 311 E. Miner Ave. Ladysmith, WI 54848 (715) 532-5272 Rusk County Maps

Wisconsin Geological & Natural History Survey 3817 Mineral Point Road Madison, WI 53705 (608) 263-7389 Statewide Maps

Laub Specialty Maps 8630 Hwy 51 North Minocqua, WI 54548 (715) 356-6851 Northern WI & U.P. Maps Specialization in Laminating

B.J.'s Sport Shop 917 Highway 51 North Minocqua, WI 54548 (715) 356-3900 Local & Northern Part of WI Maps

U.S./Canadian Map Co., Inc. 1919 American Court, Box 249 Neenah, WI 54957 (414) 731-0101 Statewide & U.P. Maps

Mr. Duck Canoes P.O. Box 56 Ontario, WI 54651 (608) 337-4711 Local Maps

Birchland Realty Highway 13 South, P.O. Box 388 Park Falls, WI 54552 (715) 762-3276 Local Maps Birchland Reality, Inc. 198 S. Lake Avenue, Box 25 Phillips, WI 54555 (715) 339-2181 Local Maps Racine Blueprint 1015 Washington Avenue Racine, WI 53403 (800) 686-6160 Local & Southern WI Maps

Oncida County Forestry Dept. Courthouse P.O. Box 400 Rhinelander, WI 54501 (715) 369-6140 Oneida County Maps

Doerre Hardware, Inc. 116 West Jefferson Street Spring Green, WI 53588 (608) 588-2166 Local Maps

Northwest Outlet 1814 Belknap Street Superior, WI 54880 (715) 392-1122 Northern 1/3 of WI Maps

J & J Sports 24 West Wisconsin Avenue Tomahawk, WI 54487 (715) 453-3144 Local Maps

Marathon County Clerk Courthouse 500 Forest Street Wausau, WI 54401 (715) 847-5500 North Central WI Maps

The Quiet Hut P.O. Box 53 Whitewater, WI 53190 (414) 473-2950 Selected areas of State Maps

Kiedrowski Engineering, Inc. 4340 80th Street South Wisconsin Rapids, WI 54494 (715) 421-0444 Local Maps

Lampert, Lee & Associates 10968 Highway 54 East Wisconsin Rapids, WI 54494 (715) 344-0068 Local Maps

# SCO NEWS AND UPDATES

#### **General Requests**

Editor's Note: Brenda Hemstead of the SCO staff handles the great majority of general requests. In this article she describes the process required to answer these types of inquires.

Just today, a person called to request information on the geographic center of the state. A similar request two weeks ago was about the exact geographical center of the northern half of the western hemisphere. A couple of months ago was a call for a map of the state showing locations of cheese plants.

Our office receives a wide variety of "General Requests" ranging from the size of an area, height of a particular feature, to location of a named feature. We are also asked to explain contours, digital methods, software, hardware, etc.

Many calls received about statistics such as highest points or size of a county can usually be answered by referencing the Wisconsin "Blue Book". This document is available in libraries and many government offices.

During the girls and boys state basketball tournament, the office received a call from a small town wondering why they weren't on the state highway map and what "qualifies" a town, village, etc. to be on it. They were especially concerned because their town/community had won their division and wanted people to be aware of their location in the state.

Requests for geographic names is another frequently asked question. Usually these are requested by attorneys, realtors, home buyers, and out-of-state tourists for the official spelling, location, and existence of the name in question.

In late October and early November, nearing the deer hunting season, we receive calls for maps showing public hunting grounds and/or explanations on reading the contours on the topographic quadrangles.

With automation and digital methods becoming more accessible in price, users are continually asking for guidance and/or consultation in hardware/software purchases.

#### **Bulletin is 16 Years Old**

Our last issue marked the beginning of the seventeenth volume of the <u>Wisconsin Mapping Bulletin</u>. To date we have published 602 pages of the <u>Bulletin</u> in 69 issues. Beginning with the January 1989 issue, we changed the distribution of the <u>Bulletin</u> from quarterly to bimonthly. Although costs have risen in printing and mailing, we hope to continue to publish the <u>Bulletin</u> bimonthly. The <u>Bulletin</u> reaches over 2,400 readers statewide. We continue to appreciate receiving your comments and/or critisisms.

Please check your address label and send us any corrections you may have since the <u>Bulletin</u> is mailed at "Bulk Rate" and forwarding doesn't apply.

#### New State Cartographer

The UW-Madison College of Letters and Science on the recommendation of a Search and Screen Committee has appointed Ted Koch as the new Wisconsin State Cartographer. He follows Art Ziegler who retired at the end of last year.

Koch (pronounced "Cook") is a native of Wisconsin, and received both his Bachelor's degree in Geography and Master's degree in Cartography from the UW-Madison. For the past 17 years he was a cartographer with the New York State Department of Transportation in Albany, where he had extensive experience in both conventional and automated mapping production and management. While there, he had a variety of responsibilities ranging from heading the Department's Map Information Unit to most recently managing the digital production efforts for several different statewide base map series.

In addition to heading the State Cartographer's Office in Science Hall, Ted will also be Art's replacement as a voting member of the Wisconsin Land Information Board.

Ted began his duties in Science Hall on May 20th. His telephone number is 608/262-6852.



#### **Other Staff News**

Tom Ruzycki, a graduate student in cartography is leaving us at the end of June after two years as the Assistant Editor for catalogs. Tom had previously been on the production staff for the SCO as an undergraduate, working on the county catalog series.

Brian Goudreau, also a graduate student in cartography, is also leaving us at the end of June. Brian has worked for the SCO since July 1990 as Production Manager for our county catalog series program amongst other duties

Lee Samson, another graduate student in cartography, will remain with us for another year. Lee works primarily on automated systems support and development.

Several new graduate students will be joining the SCO staff between July and September.

Our undergraduate production staff has decreased in size over the past few years from six undergraduates to four. Of the four, Helen Yde works as clerical assistant for Brenda.

Currently, our production staff consists of William Kynesburye, Barbara Strassheim, and Laura Michael.

### Status Report on Current Topographic Mapping in Wisconsin

Quad	Scale	Fund	Fund*Status	
Dancy (I)	1:24,000	JFA	In Cartography	
Hebron, IL	1:24,000	SIR	Photogrammetry Completed	
Richmond, IL (R)	1:24,000	SIR	In Photogrammetry	
Rocky Run (I)	1:24,000	JFA	In Cartography	
Stevens Point (I)	1:24,000	JFA	In Cartography	
Grantsburg	1:100,000	JFA	In Cartography	
Hastings	1:100,000	JFA	In Cartography	
Iron Mountain	1:100,000	SIR	Photogrammetry Completed	
La Crosse	1:100,000	SIR	In Reproduction	
Madison	1:100,000	SIR	In Reproduction	
Manitowoc	1:100,000	SIR	In Reproduction	
Oconomowoc	1:100,000	SIR	In Reproduction	
Outer Island	1:100,000	SIR	In Reproduction	
Stillwater	1:100,000	SIR	In Reproduction	
Wabeno	1:100,000	SIR	In Reproduction	

\* SIR-Surveys, Investigations, and Research

JFA-Joint Funding Agreement (formerly State Cooperative Project)

(R)-Revision

(I)-Photorevision (formerly interim revision)

[this listing is current as of March 31, 1991]

(source: U.S. Geological Survey)

### "Handbook" Printing Delayed

In the last issue of the Bulletin, we announced that the handbook "Introduction to Local Land Information Systems in Wisconsin" would be available in April.

Due to unforeseen budget and timing constraints, we have had to push back the printing date to July. It is one of our highest priorities at the start of the new fiscal year.

Many of you have already called our office for details on ordering the Handbook. We expect to mail out order forms early in July. As an information item, each current member of the Wisconsin Land Information Association (WLIA) will be receiving a "free" copy. The WLIA's Board of Directors has decided to fund this distribution to its entire membership.





### Update on the History of Cartography Project

Volume 1 of this six-volume comprehensive world history of maps and mapping appeared in 1987. Since then editors J. B. Harley (Univ. of Wis.-Milwaukee) and David Woodward (Univ. of Wis.-Madison) and a team of international specialists have been assembling the second volume, which deals with the neglected cartographies of Islamic and Asian civilizations.

The two books of Volume 2 contain much entirely new research and many previously unpublished maps. Book 1, *Cartography in the Traditional Islamic and South Asian Societies-*-to appear late this year – analyzes geographical, astronomical, and cosmographical mapping within the diverse societies of southwestern Asia and the Indian subcontinent. Native Arab mapping assimilated Greek, Indian, and Persian influences to create a distinctive Islamic cartography--one of the historical forces that shaped the present map of the Middle East. At the same time, South Asia's diverse cultures and religions produced remarkable cosmological images as well as the more familiar practical forms of maps. Parallel sections of the book treat each of these regional traditions.

Book 2, *Cartography in the Traditional East and Southeast Asian Societies*, views the distinct mapping traditions of East, Central, and Southeast Asia through the interaction between these societies and the ways they made and used maps. Research on Book 2 is in its final phases.

The third volumes, *Cartography in the Age of Renaissance* and Discovery and the fourth volume, *Cartography in the Age of Science, Enlightenment, and Expansion* will deal with the cartography of centralizing, expanding European powers, their exploratory and colonial efforts, and the maps of the non-literate indigenous cultures they encountered. Research and writing for these volumes is in progress.

The Project receives major funding from the National Endowment for the Humanities and the National Science Foundation, but it depends upon private sources for a significant portion of its operating costs. Tax-deductible contributions are acknowledged in the next forthcoming volume, and are matched by an equal amount from the National Endowment for the Humanities. Contributions should be made payable to The University of Wisconsin Foundation, and should be sent to The History of Cartography Project, 470 Science Hall, Madison, WI 53706.

### Make Comments on SDTS Now

The National Institute of Standards and Technology will close its 90-day period for receiving comments on the proposed Spatial Data Transfer Standard (SDTS) on July 10. The document out for review is almost 1" thick, and describes a standard way to interchange data used in GIS and automated mapping systems.

SDTS addresses three primary objectives: a neutral exchange format; a standard set of spatial objects (e.g., types of roads, towers, waterbodies); and a means to preserve and communicate spatial data that is non-standard (user-defined).

The current review step will be followed by analysis and possible modifications performed by the NIST along with the U.S. Geological Survey (which would become the custodian of the final standard). Then both the Department of Commerce (home of NIST) and the Office of Management and Budget (OMB) would review the proposal prior to the Secretary of Commerce assigning SDTS a FIPS (Federal Information Processing Standard) number.

SDTS has a ten year history, being the merged efforts of standards groups in both the federal mapping agencies and the professional mapping community. At various steps along the way, the emerging standard has evolved to reflect some of the expanding capabilities of automated mapping and GIS technology. However, further evolution of the technology beyond primarily map-based information systems will strain SDTS in its present form.

A number of software vendors have pledged to build modules based on SDTS so that data in one system can be transferred intact to another system. As the software technology has evolved, some characteristics of data organization are presently difficult or impossible to transfer because existing transfer standards are too limited in their capabilities. Some vendors have developed special translators that allow transfers between selected systems. Because SDTS is designed to accommodate any vector, raster, and grid, as well as non-spatial and ancillary data, transfers may be somewhat slow and bulky. It may require as long as 2 years for vendors to fully implement SDTS capabilities into their software products.

One concept that has maintained its identity through the evolution of SDTS is that of data quality. There is a definition of 5 categories of quality: lineage, positional accuracy, attribute accuracy, logical consistency, and completeness. As a result, a receiver of spatial data would analyze the quality information attached to the data in order to determine whether the data is fit for a particular planned use.

SDTS represents the collective effort and wisdom of a large group of people who have addressed the critical issue of sharing spatial data. Without effective sharing, a large amount of duplication in data collection will continue to occur.

There are several criticisms of SDTS, particularly for state and local users. First, it is primarily based on transfer of maplike data, and may not serve well for transfer of data that has deeper or more complex internally coded geographic relationships. Second, it is best used for infrequent exchanges of large quantities of data, and may be very clumsy to implement in a transactionally driven system. Third, because the vendors' software products are so diverse in their design, interpretation of SDTS implementation may lead to variation in functionality.

Copies of SDTS can be requested from:

SDTS Coordinator U.S. Geological Survey 510 National Center Reston, VA 22092

Comments on SDTS should be directed to:

Director National Computer Systems Laboratory Attn: Proposed FIPS for SDTS Technology Building, Room B-154 National Institute of Standards and Technology Gaithersburg, MD 20899

Editor's Note: This article is based primarily on a presentation made to the Wisconsin Land Information Board by David Fletcher of the Wisconsin Department of Transportation.

### International Geography Quiz

The following story was provided by Prof. Jim Clapp of the UW-Madison Civil and Environmental Engineering Department. The first person to send us a fully correct "translation" will win their choice of either of Jim's best-selling tapes: "Surveyor's favorite Banjo Tunes" or "Secrets of Successful Committee Meetings Based on the Threat of Bad Jokes". This offer expires April 1, 1991.

Waitress: Hawaii, Mister? Your must be Hungary!

*Gentleman:* Yes Siam. And I can't Romania long, either. Venice lunch ready?

Waitress: I'll Russia table. What'll you Havre? Aix?

Gentleman: Whatever's ready, but can't Jamaica cook hurry up?

Waitress: Odessa laugh, but I'll Alaska.

Gentleman: Don't do me favors. Just put a cuba sugar in my Java.

*Waitress:* Don't you be Sicily, big Boy, Sweden it yourself. I'm only here to Serbia.

Gentleman: Denmark my check and call the Bosporus. I hope he'll Kenya. I don't Bolivia know who I am.

Waitress: Canada noise! I don't caribbean. You sure Ararat!

*Gentleman:* Samoa your wisecracks? What's got India? Dijon think this arguing Alps business? Be NICE! Matter of fact, I gotta Smolensk for ya!

Waitress: Don't Kiev me that Boulogne! Alamein do. Spain in the neck, pay your check and scram. Abyssinia!

## CONFERENCES AND TECHNICAL MEETINGS

June 10-July 3 and July 8-August 2, 1991 Summer Institute in the Cartographic Sciences, Eight-week program leading to a Certificate in Cartographic Sciences. Salem State College, Salem, MA. Call: 508/741-6331.

June 10-14, Satellite Remote Sensing in the 1990s, George Washington University Continuing Engineering Education Program, Washington, DC. Call: 202/994-6104 or 800/424-9773.

June 17, Fundamentals of GPS for Engineers, Surveyors, and Managers, Seminar, will be held at the Chicago O'Hare Hilton, Chicago, IL. Contact: Navtech Seminars, 2775 South Quincy Street, Suite 610, Arlington, VA 22206-2204, 800/628-0885.

June 24-26, Understanding the Integration of Remote Sensing and GIS: A Computer Workshop, Milwaukee, WI. Contact: Stephen J. Scott at 414/227-3115.

July 9-11, ESRI Certified Training for PC ARC/INFO, Redding, CA. Contact: David R. Volkmann, VESTRA Resources, INc., 962 Maraglia Street, Redding, CA, 916/223-2585.

July 9-12, GISDex '91: Geographic Information and Spatial Data Exposition will be held at the Hyatt Regency in Crystal City, VA. Contact: U.S. Professional Development Institute, 1734 Elton Rd., Suite 221, Silver Spring, MD 20903, 301/445-4400.

July 15-16, Geographic Information Systems: Technology & Applications, will be held at the University of California-Santa Barbara. Call: 805/893-4143 or fax to 805/893-4943.

July 15-19, U.S. Army Corps of Engineers Triennial Surveying and Mapping Conference, Louisville, KY. Contact: Stephen DeLoach, U.S. Army Engineer Topographic Lab, Fort Belvoir, VA, 22060, 202/355-3026.

July 17-19, ArcInfo: A Hands-On Workshop will be held at the University of California-Santa Barbara. Call: 805/893-4143 or fax 805/893-4943.

July 22-26, Synthetic Aperture Radar Technology and Applications, will be held at the University of Michigan in Ann Arbor, MI. Call for further information: 313/764-8490.

July 28-August 2, SIGGRAPH '91 will be held in Las Vegas. Contact: SIGGRAPH '91 Conference Management, 401 N. Michigan Ave., Chicago, IL 60601 or call 312/644-6610.

July 29-31, International GPS/GIS Conference, Yellowstone Conference Center, Yellowstone Park, Big Sky, MT. Contact: Keith Wallace, GeoResearch, 2815 Montana Avenue, Billings, MT 59101, 406/248-6771.

Augusut 3-9, AM/FM International Executive Management Symposium will be held in Keystone CO. Contact: Paula Delie, AM/FM International, 14456 East Evans Ave., Aurora, CO 80014. Call: 303/337-0513.

August 5-9, Effective CADD Production Management, Purgatory/Durango, CO. Call: 608/262-1299 for program enrollment; 608/263-4705 for program information.

August 9-16, **27th International Geographical Congress** will be held in Washington, D.C. Contact: Dr. Anthony deSousa, 27th IGC, 17th and M Streets NW, Washington, D.C. 20036.

August 11-15, URISA '91 Annual Conference will be held in San Francisco, CA. Contact: Urban & Regional Information Systems Association, 900 2nd St. NE, Suite 302, Washington, D.C. 20002. Call: 202/289-1685.

August 17-20, Spatial Data 2000, cosponsored by the Photogrammetric Society, The Remote Sensing Society, and ASPRS, will be held at the Christ Church, Oxford University, England. Contact: ASPRS at 301/493-0290. August 12-16, Advanced CADD Production Management Workshop, Purgatory/Durango, CO. Call: 608/262-1299 for program enrollment; 608/263-4705 for program information.

August 28-30, Second Symposium on Large Spatial Databases - SSD '91, will be held in Zurich Switzerland. Contact: Dr. Hinterberger, Institut fur Wissenschaftliches Rechnen, ETH-Zentrum, CH-8092 Zurich, Switzerland.

September 4-6, **Digital Geographic Information Systems** will be held on The George Washington University campus. Contact: Continuing Engineering Education Program, The George Washington University, Washington, DC 20052 or call toll free 800/932-CEEP.

September 11-12, Managing the Risks and Recovering the Costs of Geographic and Facilities Management Systems, will be held at The Wisconsin Center, 702 Langdon Street, Madison, WI 53706. Contact: Patrick Eagan or Cindy Simon at 608/263-7429 or 608/262-6782.

September 15-18, First International Conference/Workshop on Integrating GIS and Environmental Modeling, will be held in Boulder, CO. Contact: GIS/Modeling Secretariat, NCGIA, Univ. of California, Santa Barbara, CA 93106, 805/893-8224.

September 16-17, International Society for Photogrammetry and Remote Sensing/European Organization for Experimental Photogrammetric Research Workshop: Updating Digital Data by Photogrammetric Methods. Oxford, England. Contact: Paul Newby at 0703792788.

September 18-21, GPS '91, Hyatt Regency, Sacramento, CA. Topic to include: Transportation applications of GPS positioning technology. Contact: Robert Burtch. Ferris State Univ., Surveying and Mapping, Swan 312, 901 South State Street, Big Rapids, MI 49307-2295, 616/592-2360.

September 23-October 1, "Mapping the Nations" - 15th Conference of the International Cartographic Association will be held in Bournemourth, England. Contact: Conference Services Limited, Congress House, 55 New Cavendish St., London W1M 7RE, England.

October 14-16, Effective Application of Advanced Surveying Technology. Call toll free 800/462-0876 for further information.

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October 19-23, North American Cartographic Information Society 11th Annual Meeting. Milwaukee, WI. Contact: Jack L. Dodd, NACIS XI Program Chair, Tennessee Valley Authority, Maps and Surveys, HB1A, 1101 Market St., Chattanooga, TN 37402-2801. Call: 615/741-6277.

October 20-24, American Society of Civil Engineers Annual Convention. Orlando, FL. Contact: Maureen Rafferty, ASCE, 345 E. 475th St., New York, NY 10017. Call: 212/705-7543.

October 23-25, Fifth Annual Midwest/Great Lakes ARC/INFO User Conference, Hilton on the Circle, Indianapolis, IN. Call: 317/635-2000.

October 27-30, GIS/LIS '91 will be held in Atlanta, GA. Contact: Urban & Regional Information Systems Association, 9000 2nd St. NE, Suite 302, Washington, D.C. 20002. Call: 202/289-1685.

December 1-4, GIS in Public Utilities, Orlando, FL. Contact: Joe Myers, GIS Conference Chairman, EMA Inc., 1970 Oakcrest Avenue, St. Paul, MN 55113, 612/639-5600.

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February 26-28, Wisconsin Land Information Association Annual Conference will be held in Madison, WI at the Holiday Inn (West), 1313 John Q. Hammon Drive, Middleton, WI. Contact: Bob Gurda, WLIA Secretary at 608/262-6850.

March 22-28, ACSM/ASPRS Annual Convention, Albuquerque, MN. Contact: ACSM, 5410 Grosvenor Lane, Bethesda, MD 20814, 301/493-0200.

## THREE FIRMS BOOST LAND INFORMATION SYSTEMS RESEARCH AT UW-MADISON

Three corporations have contributed more than \$2 million worth of computer equipment and software to the University of Wisconsin-Madison to support the development and application of computerized land and geographic information systems (LIS/GIS).

Their contributions will give the university and the state of Wisconsin, already national leaders in LIS/GIS research and development, an even higher profile in the expanding hightech field, according to a UW-Madison professor.

"The potential long-term impact across our campus and elsewhere in the state's public and private sectors is considerable," says Thomas M. Lillesand, a professor of environmental studies, forestry, and civil and environmental engineering. "Already, LIS/GIS is estimated to be a multibillion-dollar-peryear activity, and its growth is accelerating."

Representatives of the university and the three firms -- International Business Machines Corporation (IBM), Environmental Systems Research Institute (ESRI),Inc., of Redlands, Calif., and ERDAS,Inc., of Atlanta -- will complete the installation of the equipment and software with a ribbon-cutting ceremony June 26 at UW-Madison.



Under an extended-loan agreement, IBM supplied an AS/400 mid-range relational database computer, five RISC System/6000 advanced work stations, five Personal System/2 and five RT personal computers, and related software. ESRI donated a widely used LIS/GIS software package called ARC/INFO. ERDAS provided additional LIS/GIS software plus image processing software that will enable researchers to feed data from satellites directly into LIS/GIS systems.

A multitude of government agencies and businesses in the United States create and use land records. Such records are necessary for infrastructure management (construction and maintenance of highways, water and sewer lines, electric power grids, etc.), real estate tax assessment, agricultural and forest management, property conveyance, environmental protection, urban and regional planning, natural resources management, demographic analysis, and many other activities. Because so many organizations collect so many types of information, land records take a variety of forms and are frequently incompatible with one another. Also, because records are so widely scattered, they are often inaccessible to anyone outside the organizations that house them.

Computerized LIS/GIS systems help solve these problems by storing many kinds of land records simultaneously in a single, electronic repository. They make it possible to retrieve, display, analyze, and even compare different types of map and textual information with relative ease.

The newly arrived computers and work stations at UW-Madison are being installed at four separate locations connected by the high-speed campus data communications network.

Faculty members from eight departments and programs have formed the core of a new group called the Spatial Information and Analysis Consortium (SIAC) to spearhead the corresponding LIS/GIS initiative at UW-Madison.

The consortium includes professors from the departments of civil and environmental engineering, computer sciences, engineering professional development, geography, landscape architecture, and soil science as well as from the Land Information and Computer Graphics Facility in the School of Natural Resources and the Environmental Remote Sensing Center in the Institute for Environmental Studies.

SIAC's first project will attempt to help municipal and county governments modernize their land records, according to Bernard J. Niemann, Jr., a professor of landscape architecture and environmental studies who is directing the effort. The project has been dubbed "LOCALIS"-- the Latin word for "place" -- to emphasize the focus on local government as the seat of land-related information.

"This project will help local agencies evaluate and implement sophisticated land records management systems," explains Niemann. "In Wisconsin alone, more than 3,000 local governments can benefit from this program, and nationwide, 80,000 units of government will eventually adopt this technology."

An advisory group of state and local representatives will help guide LOCALIS.

Lillesand, who chairs SIAC, says the consortium's longterm goal is to develop and apply LIS/GIS technology in endeavors ranging from natural resources management to global-change research.

"What makes this initiative so unique is the diversity of university disciplines involved and the multiple private-sector participants, all working cooperatively," he explains.

"Over time we hope to involve many more faculty members and other private-sector partners. Continuing to tackle the land records modernization issue will be the first of what we envision as several major projects to be undertaken by SIAC."

Contact: Thomas M. Lillesand (608) 263-3251 or Bernard J. Niemann, Jr. (608) 263-5534

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### ABOUT THE SCO....

The State Cartographer's Office (SCO), established in 1974, is a unit of the University of Wisconsin-Madison. The SCO is located on the 1st Floor of Science Hall.

Our staff presently consists of two full-time academic staff – the State Cartographer, and an Outreach Program Manager – and one full-time classified staff, plus several graduate student employees and several part-time undergraduate hourly employees.

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 a series of catalogs which document and guide users of mapping resources.
- inventories mapping practices, methods, accomplishments, experience, and expertise.
- develops experimental and prototype products.
- publishes the <u>Wisconsin Mapping Bulletin</u> and other documents to inform the mapping community.
- participates on committees, task forces, boards, etc.
- serves as the state's affiliate for cartographic information in the U.S. Geological Survey's Earth Science Information Center (ESIC) network.
- provides information and advice in support of sound mapping practices and map use.

The Office answers a wide variety of inquiries ranging from simple to complex, in the following general categories:

- 1. Geodetic Control-Requests for surveying information which has been established by some office or agency, and upon which the requestor wishes to base a survey or map.
- 2. Aerial Photographic Coverage—These are requests for information about existing or planned aerial photographic coverage which can be utilized for a variety of projects. These requests, in many instances, are motivated by the desire to avoid the exceedingly more costly route of acquiring specifically flown photography.
- 3. General Map Coverage—The requestor is seeking map coverage to fulfill a specific need, from utilization as a base map upon which other information can be compiled, to determination of location or extent of a resource such as wetlands, to use as a recreation guide.
- Specific Unique Data--These types of requests change as various programs are implemented. Examples include Magnetic Declination (for land surveying), and Latitude/ Longitude (federal requirement for placement of sending satellite dishes or radio towers).
- 5. General Requests-Such as size of an area, height of a particular feature, location of a named feature, explaining contours, digital methods, software, hardware etc.
- 6. Activities Of Others--This provides access to publications, news, anecdotal information, and referrals to appropriate agencies, programs, organizations, or individuals who may be able to provide the information being sought.

In each issue of the <u>Bulletin</u>, we will discuss an area of SCO activity in more detail. By this means we will help you better understand and more effectively utilize the SCO's services. If you

## Wisconsin Mapping Bulletin

Published bimonthly by the 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, conferences/workshops. Local and regional information is especially welcomed. The Editor makes all decisions on content. Deadline for the next issue is July 15, 1991.

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

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