

U.S.G.S., MID-CONTINENT CARTOGRAPHIC CONFERENCE

Dr. Meredith (Buzz) Ostrom, State Geologist and Art Ziegler, State Cartographer, attended the U.S. Geological Survey Mid-Continent Mapping Center's Regional Mapping Workshop in Rolla, MO on November 14 and 15, 1985. Attendees included representatives from 14 Midwestern states, the National Mapping Center headquarters, various regional offices of the U.S.G.S. and other federal agencies.

The workshop consisted of briefings by the Geological Survey staff and other federal agencies, reports by all state representatives and a caucus of states which documented their "requirements of" and "problems with" the mapping programs.

Highlights of the workshop in relationship to Wisconsin were:

1. Approximately half of the states in the 14-state region including Wisconsin had completed or were nearing completion of the 7.5-minute topographic quad program and all expressed the need for an increased maintenance program to continually update this map series;

2. Five of the fourteen states had published their own single "sheet" style topographic index and recommended to the National Mapping Division of U.S.G.S. that they return to this distribution vehicle;

3. Approximately half the states expressed an interest in pursuing a county format topographic mapping program similar to Wisconsin's (see WMB, page 1, October 1985);

4. At the completion of the briefing on automated cartography, the states expressed concern that the Survey's digital capability was, for the next several years, dedicated to servicing other federal agencies and not state needs.

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U.S.G.S. - MC, continued

Mr. Rupe Southard, Chief of the National Mapping Division of the Geological Survey, attended the entire conference. He informed the state representatives of future programs including metrication, digital products and cooperative efforts with the Bureau of Census.

This was the first such conference in 6 years. The state participants considered the workshop extremely informative and recommended that the Mid-Continent Mapping Center host similar workshops on a 2-year cycle, alternating with the National Cartographic Information Center workshops.



S.C.O. ON THE ROAD

On October 15, 1985 the State Cartographer exhibited the Office's cartographic display at the Wisconsin Towns Association in Oconomowoc. He also gave a cartographic briefing to the Geography Department, UW-Milwaukee on October 16. On November 20, he gave a briefing on automated cartographic applications and mapping resources to the Burnett County Board and staff in Siren, WI.

Oconto County has scheduled a visit/briefing on January 30-31, 1986.

The plans for Regional Cartographic Conferences are being finalized. An East Central Conference is tentatively scheduled for April and a Central Conference for June.

Notices on dates and places of conferences will be sent to representatives in the respective county areas. If your agency, organization or district is interested in a cartographic briefing, contact Art Ziegler, State Cartographer, 608/262-6852.

COMMITTEE ON STATE CARTOGRAPHY

The Committee decided to hold 3 meetings per year instead of 2 during Fiscal Year '86. This will reduce the length of each meeting and give members the opportunity to review the operations of the State Cartographer's Office more frequently.

The winter meeting was held January 15, 1986 at the new Wisconsin Geological and Natural History Survey facility, 3817 Mineral Point Road, which has ample parking space.

The 7-member Committee discussed:
1. Current state of the Office's budget, and expenditure plan for the remainder of the year;
2. Potential prototype/development projects to be considered; and
3. University procedures and policies on Academic Staff personnel.

The spring meeting will review a proposed budget for FY-87 and recommend policy direction for the Office.



Several 1:100,000-scale county topographic maps are expected imminently. They are: CHIPPEWA, DUNN, PEPIN, POLK, EAU CLAIRE, PIERCE and WOOD. However, as of January 20, 1986 we have not received any notification of availability.

A final date for a commemorization ceremony for the completion of the 7.5minute topo map program has not been set. We are awaiting the final date which is being negotiated between the Governor's Office and the U.S. Geological Survey.

IT'S A BOY

Brenda, our secretary of six years, gave birth to an 8 lb. 5 oz. boy, Brandon, on December 2nd. She, the baby and Brent, the father, are doing fine. Brenda will be back at her desk on February 3rd.

PIERCE COUNTY IS MISSING

Oops, on our October mailing cover graphic, we inadvertently left out Pierce County. Jim Clements, Pierce County Zoning Administrator, pointed out our error. We regret the oversight. It's nice to know someone read the whole thing.

GEODETIC COORDINATOR

The National Geodetic Survey has 14 regional geodetic coordinators who protect and assess the conditions of control marks. They also provide liaison, training, and assistance to local, state and federal agencies. Wisconsin is part of Region 7. The coordinator is Ronald L. Ramsey, Lansing P.O. and Federal Bldg., Room ,215A, 315 West Allegan Street, Lansing, MI 48933; phone 517/377-1510.

MAP DRY CLEANING

Do you have a dirty, torn map you'd like restored? The Wisconsin State Historical Society's Conservation Service Center can help you preserve that fragile map. The map's condition, age and material will determine the cost of the treatment. Contact Joanne Hohler, WCSC Archivist, State Historical Society of Wisconsin, 816 State Street, Madison, WI 53706; phone 608/262-8975 for a brochure and fee schedule.

AN ACRE IS AN ACRE

An acre originally totaled as much land as a yoke of oxen could plow in a day. But in the 13th century, an acre's measure--still official today-was set by law at 4840 square yards. The word comes from Old English aecer; akin to Old High German ackar field, Old Norse akr arable land, Latin ager, Greek agros and Sanskrit ajra, all meaning field, especially arable or pasture land.

KEEP THOSE MAPS DRY

You can protect your valuable maps from bad weather by slipping them into a plastic POLY-PAK bag. There are two sizes to choose from with no minimum order required. A 50-bag roll of 36" long, 1.5 mil plastic is \$7.00. A 36bag roll of 48" long, 2.0 mil plastic is also \$7.00. Include \$2.00 for shipping and handling. Mail to Peep Squirrel Poly-Pack, 4886 Candlewood Lane, Stone Mountain, GA 30088, phone 404/469-0876

SCIENCE HALL

Science Hall has been sitting at the bottom of Bascom Hill (a glacial drumlin) for 99 years. (The original building burned in 1884.) The building once housed all of the University science departments. It is now primarily the home of the Geography (Cartography) Department, the Cartographic Lab, the Arthur Robinson Map Library, the Geography Library and the State Cartographer's Office.



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WISCONSIN MAP COLLECTIONS

The Arthur H. Robinson Map Library, University of Wisconsin-Madison, and the Wisconsin State Cartographer's Office sponsored a Mini-Conference for Wisconsin Map Librarians on November 16, 1985, at the Robinson Map Library in Madison. Fifteen librarians who work with maps attended.

The program included the following presentations:

- "Acquisition and De-Acquisition" Mary Galneder, UW-Madison Map Librarian
- "Cataloging and Classification" Charley Seavey, Instructor, School of Library and Information Studies, UW-Madison
- "Topographic Mapping of Wisconsin" Christopher Baruth, Map and Imagery Librarian, American Geographical Society Collection, Golda Meir Library, UW-Milwaukee "The State Cartographer's Office" Christine Reinhard, Assistant State Cartographer.

In addition, Michael Edmonds, Map Curator, hosted a tour of the Map Room of the State Historical Society of Wisconsin. Following that, attendees watched a demonstration of map preservation methods by Robin Carlson of the Historical Society's Wisconsin Conservation Service Center. After returning to Science Hall, the group visited the office of the History of Cartography Project for a briefing by Professor David Woodward, Director.

The day provided an opportunity for Wisconsin librarians with map collections to meet and exchange ideas. It may become a regular event.

A <u>Directory of Map Collections in</u> <u>Wisconsin, 1985</u> was prepared for the conference. Copies of the <u>Directory</u> are available, free-of-charge, from the State Cartographer's Office, 144 Science Hall, University of Wisconsin, 550 N. Park St., Madison, WI 53706-1404, phone 608/262-3065.



SOIL MAPPING LEGISLATION

In March 1985, twenty-five State Representatives along with six cosponsoring State Senators introduced Assembly Bill 202 to increase soil mapping activity in the state. The bill directs the Wisconsin Geological and Natural History Survey (WGNHS), under the direction of the State Geologist, to supervise a soil survey program providing assistance in the interpretation and use of soil survey information and completing and updating county soil surveys, in cooperation with the federal government. The bill also directs the WGNHS to administer a program of financial assistance for soil survey activities. An appropriation would be created.

The soil survey program would be an interagency effort, and would consist of two components: basic soil surveyrelated services, and completion and mapping of county soil surveys. The mapping component would require an estimated one and one-half years of program development, followed by six years of peak personnel committment to complete and update county soil surveys and mapping. At the end of that time, the mapping component will be phased out to a level needed to keep surveys current; the soil survey will continue at a level of basic services which will include research, education, laboratory support, and computer assistance.

The Committee on Tourism, Recreation and Forest Productivity recommended passage of the bill in August and referred it to the Joint Committee on Finance.



DELL ON THE MAP

The village of Dell in eastern VERNON County will be put on the map in January 1987, according to State Senator Brian Rude (R-Coon Valley).

Dell, located on County Trunk P east of Westby, has a 120-year history as a trading center for the agricultural areas around the village. But, the village has never received recognition on the official state highway map.

Mrs. Vergie Snustead, who represents the Dell area on the Vernon County Board, contacted Senator Rude this summer and asked him to work with the Department of Transportation to put Dell on the map. An initial request to the Department was turned down because of strict constraints limiting placement of unincorporated villages on the map.

Rude personally appealed to Secretary Lowell Jackson, who has agreed to make an exception to the general policies regarding placement of unincorporated municipalities, citing the historic interests in Dell and available space on the map. Jackson promised Dell will go on the revised version of the map, scheduled for printing in January 1987.

"Since the first general store went up in 1866, Dell has served commercial and social needs of the people of that area. Many people would love to visit and explore communities like Dell, but the lack of information on the map may prevent it. So Dell will now get some attention when visitors travel to Vernon County, and the pride of the people of the area should be enhanced," Rude said.

source: <u>The County Line Connection</u>, Hillsboro, WI, November 27, 1985





P.L.S.S. QUIZ

To cap off the 200th anniversary of the Public Land Survey System (PLSS), here's a quiz on some unusual aspects of the PLSS in Wisconsin.

- Question 1: We are all aware of the French Long Lots and Indian Lands not surveyed in the PLSS in Brown, Calumet and Crawford Counties. There is another little known lot not in the PLSS in another county. Name the location and county.
- Question 2: We all know that the 4th Principal Meridian forms the boundary between Grant, Lafayette and Iowa Counties at its junction with the base line. At only one other place, as it heads north, does it become a county boundary again. Name the counties and township north.

Question 3: Township and Range lines, rivers and lakes form the majority of county boundaries. However, in more instances than you realize, section lines form county boundaries. Can you guess the number of counties which have section lines as part of their boundaries?

Answer 3: 16 Kenosha/Racine, Lafayete/Iowa, Crawford/Vernon, Marquette/Green Lake, Fond du Lac/but not Calumet (it's a Government Lot), Pepin/Pierce, Langlade/Oconto/Marinette, Vilas/Oneida, (not the Brown-Pulaski Vilas/Oneida, (not the Brown-Pulaski extension because it's not an even extension section).

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Answer 1: Between the Wisconsin and Fox Rivers at Portage in Columbia County.



NEW MAPS



RECENT WGS MAPS

Pleistocene Geology of Vilas County, Wisconsin. This full color map (1:100,000 scale) accompanies WGS Information Circular 50, by J.W. Attig, 1985. It is available separately for \$3.00 or with the publication for \$5.00. (Ordering information below.)

A Subsurface Study of the St. Peter Sandstone in Southern and Eastern Wisconsin, Information Circular 47, 1985. Two black-and-white foldout plates (three maps) by H. Mai (1:50,000 scale) detail the structure contour and the paleogeology of the pre-St. Peter Sandstone surface and the thickness of the St. Peter Sandstone. The price is \$5.00. (Ordering information below.)

Ice Age Deposits of Wisconsin. Reprint of the 1960 (Glacial Deposits of Wisconsin) page-size map. Scale is 1:2,730,000; price is 10¢ each or 8 for \$1.00.

The above maps can be ordered from Map Sales, Wisconsin Geological Survey, 3817 Mineral Point Road, Madison, WI 53705, phone 608/263-7389. Postage and handling charges are extra.

SPOONER GEOLOGIC MAP

Preliminary Quaternary Geologic Map of the Spooner Quadrangle, NW Wisconsin, at 1:62,500 scale (black-and-white) with an 8-page report by J.L. Drinkwater. This is an open-file report (OF) publication which can be obtained by sending a check or money order, payable to the U.S. Geological Survey and specifying number OF 85-0235 WISCONSIN to: Open-File Services Section, Western Distribution Branch, U.S.G.S., Box 25425, Federal Center, Denver, CO 80225. Paper copies cost \$3.50 each; microfiche is \$4.75. FORTHCOMING FROM THE WGS

Bedrock maps for WOOD and PORTAGE Counties at a scale of 1:100,000 will be ready for the upcoming Lake Superior Institute meeting in April.

Glacial mapping: 1:100,000 Pleistocene maps (with texts) for PORTAGE, FLORENCE and LANGLADE Counties will be ready in the near future.

WGS is compiling a series of maps (and reports) on groundwater studies for BARRON and CHIPPEWA Counties.

Bedrock geology of Wisconsin, regional map series: sheets for east central, northwest and west central are expected in early fall. The maps are in full color, at a scale of 1:250,000 and measure 28" x 38".

For up-to-date information, contact Mike Czechanski at the Wisconsin Geological Survey, 3817 Mineral Point Road, Madison, WI 53705, phone 608/263-7393.

PHOTOREVISED 7-1/2' QUADS

Name	Date	Contour
Arkdale	' <u>67,</u> PR85	10-foot
Arkdale NW	'69,PR85	5-foot
City Point	'70,PR85	5-foot
City Point NW	'70,PR85	10-foot

AG CENSUS MAPS

Graphic Summary, 1982 Census of Agriculture, Vol. 2, Part 1. The summary comprises over 300 computerdrawn maps, dot and multi-colored, with county level data on farm production and characteristics of the nation's 2.2 million farms. Copies of the publication (GPO Stock No. 003-024-06362-0) can be purchased for \$9.50 (prepaid) from the Superintendent of Documents, Government Printing Office, Washington, DC 20402; phone 202/783-3238.

NEW MAPS, continued

LAND USE/LAND COVER

The following land use, land cover and associated maps are available as openfile (OF) publications from the USGS, Mid-Continent Mapping Center, 1400 Independence Road, Rolla, MO 65401:

GREEN BAY, WI; Lat 44° to 45°, Long 88° to 90°; OF #80-0497 WISCONSIN.

DULUTH, MN, WI; Lat 46° to 47°, Long 92° to 94°; OF #80-0630 MINNESOTA & WISCONSIN.

IRON MOUNTAIN, MI, WI; Lat 45° to 46°, Long 88° to 90°; OF #82-0243 MICHIGAN & WISCONSIN.

RICE LAKE, WI; Lat 45° to 46°, Long 90° to 92°; OF #82-0245 WISCONSIN.

LA CROSSE, WI, IA, MN; Lat 43° to 44°, Long 90° to 92°; OF #84-0033 WISCONSIN, IOWA & MINNESOTA.

IRON RIVER, MI, WI; Lat 46° to 47°, Long 88° to 90°; OF #84-0178 MICHIGAN & WISCONSIN.

Each data set for the above quadrangles consists of four maps keyed to the appropriate U.S.G.S. topographic map at 1:250,000. The maps are coded for statistical development and include (1) land use and land cover, (2) political unit, (3) hydrological units, and (4) census county subdivision maps, each costing \$4.00. A film positive of the appropriate cultural base (1:250,000) may be purchased for \$45.00. The open-file number and title given above and prepayment are required to order.

TOPOGRAPHIC AND OTHER MAP INDEXES

The Index to National High-Altitude Photography (July 1, 1985), the Index to Intermediate-Scale Mapping (April 1, 1985), and the Index to Orthophotoquad Mapping (April 1, 1985) are available free by writing the Eastern Distribution Branch, U.S.G.S., 1200 South Eads Street, Arlington, VA 22202.

ICE AGE TRAIL MAP

A new National Park Service brochure describing the Ice Age National Scenic Trail has been published. The fourcolor brochure was prepared with the help of the Ice Age Park and Trail Foundation, the Wisconsin Geological Survey, the U.W. Cartographic Lab and the Wisconsin Department of Natural Resources. To obtain the brochure send a self-addressed stamped (39¢) envelope to: ICE AGE TRAIL COUNCIL, 2302 Lakeland Avenue, Madison, WI 53704.

WAUSHARA COUNTY SOIL SURVEY MAPS

Field sheets are now available at a scale of 1:20,000 using a 1977 aerial photo base. A final published version will be available in 1988. Field sheets can be ordered by contacting Daniel E. Chelmo, Waushara County District Conservationist, 118 No. St. Marie Street, P.O. Box 458, Wautoma, WI 54982-0458; phone 414/787-3828. Copies are free to Waushara County land owners and government offices, or \$1.00 per copy for others.

ATLAS SOFTWARE

<u>Atlas</u> puts a full-color, 3D globe on your computer screen; centers and magnifies states, provinces and countries up to 5 times; and gives information on 2500 cities. Requirements are an IBM PC, PCjr or 100% compatible; 128K of memory; a color graphics, color monitor or Hercules monochromatic board. The price is \$69.95. Write to Software Concepts, P.O. Box 3323, Wallingford, CT 06494.

U.S. Atlas locates 32,000 cities, federal and state parks on a precoded disk. Color graphics and monochrome. Great-Circle distance to any point. Ten by forty mile strip map display. Locates all towns within a given circle. Nine options. Uses IBM PC, 192K, 1 disk drive, PC DOS 2.00 or later. Price is \$39.95. Write to Illston PC-Programs, 1930 Hayselton Drive, Jefferson City, M0 65101; phone 314/635-3417.

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PAST AND COMING EVENTS

ANNUAL SURVEYORS' INSTITUTE

January 22-24, Stevens Point, WI. The Wisconsin Society of Land Surveyors held its 36th Annual Surveyors' Institute for three days in January. A variety of speakers were scheduled with topics ranging from "Husband and Wife --- A Team in Business" to "Megatrends --- A Base for the North American Adjustment."

INSTITUTE FOR ENVIRONMENTAL STUDIES SEMINAR

January 24-May 9, University of Wisconsin, Madison. This weekly seminar, available for credit, will meet from 1:20-3:30 p.m. Fridays at the Commerce Building on the Madison campus. The topic is "Multipurpose Land Information Systems: Modernizing Land Information in North America," and is being offered by the Institute for Environmental Studies. For more information contact Professor Ben Niemann, 25 Ag Hall, Madison, WI 53706, phone 608/263-6506.

WGS OPEN HOUSE

January 30, Madison, WI. The Wisconsin Geological and Natural History Survey celebrated its move into new quarters with an Open House at the new location on Mineral Point Road.

COLUMBUS AND EARLY VOYAGERS TO AMERICA February 5, Milwaukee, WI. Professor Clinton Edwards of UW-Milwaukee presented a slide lecture of the early European discoveries in the New World entitled "Columbus and Early Voyagers to America." An exhibition of selected maps and illustrations from the period were also on display, including the famous Giovanni Leardo world map of 1452 and the facsimile Behaim globe of 1492. (See related story on page 10.)

MICROCOMPUTER MAPPING WORKSHOP

February 22, Madison, WI. A one-day workshop at the Wisconsin Center in Madison is being sponsored by the Southern Lake Michigan Section of the American Congress on Surveying and Mapping (ACSM). Offering hands-on experience, the workshop will be team taught by Frank Beatty (USGS National Space Technology Labs) and Bill Tolar (Computer Sciences Corporation). It should appeal to state and county mapping personnel, cartography students and computer-oriented instructors in the mapping sciences. Fees are \$49 for SLM Section members and students, \$59 for others. Enrollment is limited, so send your name, address & phone number along with a check payable to Southern Lake Michigan Section to: Dick Corbett, Treasurer, 334 W. Crystall Street, Mundelein, IL 60060.

IOAA MAPPING SEMINAR

March 13-14, Houston, TX. "Property Ownership Mapping: Approaches for Assessors" is the topic of the International Association of Assessing Officers' mapping seminar. Seminars will be held at two locations on different dates: March 13-14, 1986 in Houston, Texas and October 30-31, 1986 in Orlando, Florida. For registration information contact IAAO Mapping Seminar, P.O. Box 94573, Chicago, IL 60690-4573.

URISA MILWAUKEE

April 17, Milwaukee. A local Urban and Regional Information Systems Association conference will focus on geographic information systems, particularly in Wisconsin. A descriptive brochure and registration form are attached to this issue of the Wisconsin Mapping Bulletin.

INTERNATIONAL FEDERATION OF SURVEYORS June 1-11, Toronto, Canada. The 18th Congress of the International Federation of Surveyors (F.I.G.) convenes in Toronto, for the first time in Canada. It will undoubtedly

be many years before the Congress will be held again on the North American Continent. Members of the American Congress on Surveying and Mapping (ACSM) are also members of F.I.G. and can exchange ideas with surveyors from almost every country in the world. For more information, contact FIG CONGRESS '86, P.O. Box 186, Station Q, Toronto, Ontario, Canada M4T 2M1, phone 416/963-0030.

NATIVE AMERICANS AND THE CENSUS

August 5, Wausau, WI. The Bureau of the Census will hold a regional meeting with Native American organizations in Illinois, Michigan, Minnesota and Wisconsin to discuss 1990 census plans. For more information, contact the Decennial Planning Division, Bureau of the Census, Washington, DC 20233, phone 301/763-4358.

URISA ANNUAL CONFERENCE

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August 10-14, Denver, CO. The Urban and Regional Information Systems Association will hold its 24th annual conference at the Marriot Hotel in Denver. The conference theme, "What's The Difference?", stresses evaluation of information systems technology. For more information, write to URISA 86, 319 C Street SE, Washington, DC 20003.

BURNETT COUNTY

PROPERTY NUMBERING SYSTEM

Burnett County, working with the County Fire Association and its townships, recently secured funding for a uniform property numbering system which will make central dispatching of government services and emergency equipment more efficient. The County and the Wisconsin Department of Natural Resources funded the project.

The Northwest Regional Planning Commission (NWRPC) began fieldwork in September aimed at creating a uniform numbering system. The Commission prepared a base map for each town showing housing units and businesses. Α distance measuring device is being used to plot precise address locations. NWRPC staff is working with the towns to review the maps as they are finished. When the addressing is complete, Burnett County will receive a set of base maps. Commission staff will also work with emergency and county personnel in the use of the system. The target completion date is April of 1986. For more information contact the NWRPC at 302 Walnut Street, Spooner, WI 54801; phone 715/635-2197.

AMERICA'S HEARTLAND

The exciting discovery of America's heartland will be examined in a pilot program being planned by the Milwaukee Public Library and the University of Wisconsin-Milwaukee's Golda Meir Library. The library system has been awarded a planning grant of \$14,982 from the National Endowment for the Humanities to develop with the UW-Milwaukee library "The Many Discoveries of America: The Impact in America's Heartland." In this pilot program, Professor Clinton Edwards of UW-Milwaukee's Geography Department will introduce the concept that the continent continued to be "discovered" by explorers, settlers and immigrants as they ventured into America's heartland.

Included will be a display of historic maps showing the first results of explorations made after Columbus' voyages. Howard Deller, Literature Analyst with the UW-Milwaukee Golda Meir Library's American Geographical Society Collection, will assist in providing globes, maps and other materials for this program. Items to be put on display include the 1452 manuscript map of the world by Giovanni Leardo and a facsimile of Martin Behaim's globe of 1492. After the program, a mounted display of maps and related materials will circulate to the Milwaukee neighborhood libraries during the month of February.



Congressional Districts Atlas (1985) A new edition is now available, with updated state and county maps and geographic reference tables for districts of the 99th Congress. The atlas is identical to the one for the 98th Congress with the addition of two features: new maps and lists for the states that underwent redistricting for the 99th Congress; and tables listing functioning minor civil divisions (MCD's) for 17 states and showing the county and congressional districts in which each MCD is located. Order "The Congressional District Atlas, Districts of the 99th Congress," from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (GPO S/N 003-024-06132-5). The price is \$15.

Exemplary Systems in Government 1985-86, The State of the Art (1986) describes the 29 federal, state, provincial and local systems submitted for the 1985-86 ESIG Award competition. The report contains six major groups of systems: Land Records and Geoprocessing; Integrated, Multi-purpose Systems; Statistical and Interactive Systems; Planning and Location Analysis; Automation of Existing Procedures; and Financial Administration. The report is available for \$32.00 (prepaid) from URISA, 319 C St. S.E., Washington, DC 20003.

State and Local Government Systems, The State of the Art (1985), is also available from URISA at the address above for \$32.00. The document describes twenty-two public information systems submitted to URISA by state, federal and local governments for the 1984 Exemplary Systems in Government Award. These systems vary widely in terms of specific applications, computer support and community setting.

G.P.S. AND D.O.T.



The Wisconsin Department of Transportation (DOT) recently obtained the services of Geophysical Service, Inc., a subsidiary of Texas Instruments in establishing precise horizontal and vertical control on 74 control points around the state. The method of measurement is referred to as the Global Positioning System (GPS) and utilizes seven satellites now orbiting the earth. The DOT contracted to have measurements made at seven separate sites around the state. Work began in Eau Claire on December 5th and ended in Madison on December 18th. (Editor: As you may recall, this was a very cold and snowy period.) The total cost for the GPS work was \$96,000. Similar work using conventional surveying techniques would have cost \$152,000.

GSI used the TI 4100 GPS Navigator which is very productive, portable and provides on-site results. In less than 30 minutes, data collected from two systems tracking the same satellites can be produced to attain accuracies exceeding 1 part in 100,000. The system produces both horizontal and vertical control. By the end of the decade the number of orbiting satellites is expected to increase to 18, thus decreasing the time spent at each station and at the same time increasing the accuracy. The potential and use of this system has far-reaching implications for the surveying profession and for land information systems. For more information contact Bob Holdridge, D.O.T. Special Services, phone 608/267-9639.

source: <u>Wisconsin Professional Surveyor</u>, December 1985, and personal correspondence

WISCONSIN'S BOUNDARIES

The following history and description of Wisconsin's boundaries are taken from Boundaries of the United States and the Several States by F. K. Van Zandt, U.S.G.S. Professional Paper 909 (1976).

Wisconsin was organized as a Territory July 3, 1836, and admitted as a State May 29, 1848.

When the Territory of Wisconsin was organized, it was supposed that there was an almost continuous water-boundary line between Michigan and Wisconsin from Green Bay to Lake Superior. Congress in 1838 ordered the running and marking of this boundary (5 Stat. L. 244), but it was soon discovered that the line could not be run as described, for the head of the Montreal River is more than 50 miles from the Lake of the Desert (now called Lac Vieux Desert), which was supposed to be its source. It was therefore recommended that the boundary location be changed to the position later described in the Wisconsin enabling act of 1846 (9 Stat. L. 56-57), and in greater detail in the Michigan constitution of 1850, which reads as follows:

... through Lake Superior to the mouth of the Montreal river; thence through the middle of the main channel of the said river Montreal to the head waters thereof; thence in a direct line to the center of the channel between Middle and South islands in the Lake of the Desert; thence in a direct line to the southern shore of Lake Brule; thence along said southern shore and down the river Brule to the main channel of the Menominee river; thence down the center of the main channel of the Menominee river; thence down the center of the main channel of the same to the center of the most usual ship channel of the Green Bay of Lake Michigan.

As originally constituted its area comprised all that part of the former Territory of Michigan which lay west of the present limits of the State of Michigan. The limits are defined in the act for its organization as follows (5 Stat. L. 11):

of Illinois, through the middle of Lake Michigan, to a point in the middle of said lake, and opposite the main channel of Green Bay; and through said channel and Green Bay to the mouth of the Menomonie river; thence through the middle of the main channel of said river, to that head of said river nearest to the Lake of the Desert; thence in a direct line to the middle of said lake; thence through the middle of the main channel of the Montreal river, to its mouth; thence with a direct line across Lake Superior to where the territorial line of the United States last touches said lake northwest; thence on the north with the said territorial line to the White-earth river; on the west, by a line from the said boundary line following down the middle of the main channel of White-earth river to the Missouri river, and down the middle of the main channel of the Missouri river to a point due west from the northwest corner of the State of Missouri; and on the south, from said point, due east to the northwest corner of the State of Missouri; and thence with the boundaries

from the northeast corner of the State

of the States of Missouri and Illinois, as already fixed by acts of Congress.

In 1838, all that part of the territory lying west of the Mississippi and of a line drawn due north from its source to the international boundary-that is, all that part which was originally comprised in the Louisiana Purchase and the Red River drainage basin south of the 49th parallel-was organized as the Territory of Iowa.

The enabling act dated August 6, 1846, provided for the admission of Wisconsin as a State. The boundaries were described as follows:

Beginning at the northeast corner of the State of Illinois, that is to say, at a (point in the center of Lake Michigan where the line of forty two degrees and thirty minutes of north latitude crosses the same, thence running with the

Bounded on the east, by a line drawn

(continued)

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BOUNDARIES, continued

boundary line of the State of Michigan, through Lake Michigan, Green Bay, to the mouth of the Menominee River; thence up the channel of said river to the Brule River, thence up said last mentioned river to Lake Brule; thence along the southern shore of Lake Brule in a direct line to the channel between middle and south islands in the Lake of the Desert; thence in a direct line to the headwaters of the Montreal River, as marked upon the survey made by Captain Cramm; thence down the main channel of the Montreal River to the middle of Lake Superior; thence through the center of Lake Superior to the mouth of the St. Louis River; thence up the main channel of said river to the first rapids in the same, above the Indian village, according to Nicollet's map; thence due south to the main branch of the River St. Croix; thence down the main channel of said river to the Mississippi; thence down the main channel of that river to the northwest corner of the State of Illinois; thence due east with the northern boundary of the State of Illinois to the place of beginning...

The straight parts of the boundary were surveyed and marked, in 1847, from a point where the Balsam River and the Pine River unite to form the Montreal, S. 74° 27' E. to the Lake of the Desert, a distance of 50 miles 67 chains 6 links. The southern part of the line begins at the lower end of Lake Brule and runs N. 59° 38' W. for 13 miles 37 chains 66 links to an intersection with the former line in the Lake of the Desert. The notes pertaining to this line can be found in the General Land Office files.

Suit was commenced by Michigan in the U.S. Supreme Court in October 1923 for a redetermination of the Michigan-Wisconsin boundary, the claim being made that the surveys of 1840-47 were not in accord with the descriptions. The change from the previously accepted boundary to that proposed by Michigan would have resulted in a loss to Wisconsin of about 255,000 acres of land, but the Court by decree dated March 1, 1926 (270 U.S. 295; 272 U.S. 398), confirmed Wisconsin's title to the disputed area, principally because The rule, long settled and never doubted by this court, is that long acquiescence by one State in the possession of territory by another and in the exercise of sovereignty and dominion over it is conclusive of the latter's title and rightful authority.

A resurvey of the Michigan-Wisconsin line was completed in 1929 by commissioners representing the two States. There are now 160 concrete monuments on this 65-mile line. This work was executed in accordance with the Supreme Court decree of November 22, 1926.

The boundary from the Lake Brule to the mouth of the Menominee is practically that described in the enabling act and

follows the channels of the Brule and Menominee wherever they are free from islands; ... wherever islands are encountered above Quinnesec Falls the line follows the channel nearest the Wisconsin main land, so as to throw all such islands into Michigan; and ... wherever islands are encountered below Quinnesec Falls the line follows the channel nearest the Michigan main land, so as to throw all such islands into Wisconsin.

Through Green Bay the line was fixed as claimed by Wisconsin and includes in that State Washington, Detroit, Plum, Rock, and some smaller islands.

A further decree of the Supreme Court, handed down in 1936 (297 U.S. 547), confirmed the earlier decree and defined the boundary through Green Bay to the middle of Lake Michigan by bearings and distances. Following this, the States of Michigan, Wisconsin, and Minnesota entered into a compact to define angle points along their common boundaries that fall in the Great Lakes or bays adjoining them, and to reference these points by suitable marks along the shore, the geodetic positions of which were to be determined.

To define the boundary between Michigan and Wisconsin in the middle of Lake Michigan, as required by the enabling

BOUNDARIES, continued

acts admitting these States, seven points were selected and named A to G, and their geodetic positions were published. Point A is on an eastward continuation of the Illinois-Wisconsin boundary. Point G is at the centerline of the lake where the boundary through Green Bay intersects it.

The geodetic coordinates of the seven points are:

Point	Latitude (N.)	Longitude	(W.)
A	42°29'37"	87°01'15"	
В	43°22'50"	87°08'50"	
С	43°42'00"	87°07'20"	
D	44°07'55"	87°00'45"	
Е	44°52'50"	86°41'00"	
F	45°05'20"	86°29'30"	
G	45°14'10"	86°14'55"	

Two points were selected to define the boundary for Michigan, Wisconsin, and Minnesota in Lake Superior. This line extends from the international boundary at the point where it enters Pigeon Bay to the point where the Michigan-Wisconsin boundary enters the Montreal River. These points were labeled N and M. Their coordinates are:

Point	Latitude (N.)	Longitude	(W.)
М	46°34'05"	90°25'05"	
N	48°00'50"	89°29'00"	

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The line between Wisconsin and Minnesota, being described in the enabling act admitting Wisconsin as passing "through the center of Lake Superior to the mouth of the St. Louis River" is defined by four points, A to D. Point A is at the mid point of line M-N. Point D is referenced to the ends of the breakwaters at the entrance to the Duluth Superior Harbor. The geodetic coordinates of these points are:

Latitude (N.)	Longitude (W.)
47°17'30"	89°57'00"
47°18'35"	90°39'15"
46°54'10"	91°31'25"
46°42'39.875"	92°00'24.571"
	Latitude (N.) 47°17'30" 47°18'35" 46°54'10" 46°42'39.875"

All these points representing the centerline of Lake Michigan or Lake Superior are defined as equidistant from two points on the opposite shorelines, except point G, which had been fixed by a U.S. Supreme Court decree of March 12, 1936. The true azimuths and distances, in statute miles between successive points, are given in the compact.

This agreement on the boundaries of the three States was approved by Congress in 1948 (62 Stat. 1152).

On March 3, 1847, a supplementary act for the admission of Wisconsin was passed by Congress, in which the western boundary of the proposed States was described as follows:

That the assent of Congress is hereby given to the change of boundary proposed in the first article of said constitution, to wit: leaving the boundary line prescribed in the act of Congress entitled "An Act to enable the People of Wisconsin Territory to form a Constitution and State Government, and for the Admission of such State into the Union," at the first rapids in the river St. Louis; thence in a direct line southwardly to a point fifteen miles east of the most easterly point of Lake St. Croix; thence due south to the main channel of the Mississippi River or Lake Pepin; thence down the said main channel, as prescribed in said act.

Had this act been accepted, it would have given the State an area considerably less than it now has. The first constitution, completed December 16, 1846 accepted the boundaries as described in the enabling act of August 6, 1846, but proposed that Congress consent to the change as described in the later act above referred to. This constitution was rejected by popular vote April 5, 1847 (14,119 ayes, 20,231 noes)-not, however, because of unsatisfactory boundaries.

A second constitution dated February 1, 1848, with the boundaries also as described in the act of August 6, 1846,

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BOUNDARIES, continued

was accepted by the people but with the proviso (art. 2, sec.1) that, if Congress approved, the boundary line should run southwesterly from the foot of the rapids of the St. Louis River to the mouth of the Rum River, thence down the Mississippi River as previously described. This boundary would have added materially to the area of the State had it been accepted by Congress.

Congress accepted the constitution dated February 1, 1848, without action on the proviso and by act approved May 29, 1848 (9 Stat. L. 233), admitted Wisconsin as a State.

The admission of Wisconsin to statehood left an area of more than 30,000 square miles west of the St. Croix River, east and north of the Mississippi River, practically without a government. The settlers organized a temporary government and elected a Delegate to Congress who was admitted as the representative of the "Territory of Wisconsin." This area became a part of the Territory of Minnesota by congressional act of March 3, 1849.

The State of Minnesota in 1916 instituted a suit against Wisconsin in the U.S. Supreme Court to have that part of the State boundary line from St. Louis Bay up the St. Louis River to the falls near Fond du Lac finally determined. The Court handed down an opinion March 8, 1920 (252 U.S. 273), and on October 11, 1920 (254 U.S. 14), appointed commissioners to survey and mark the line. The survey was made on ice during the winter of 1920-21, and the commissioners' report was confirmed by the Court February 7, 1922. The line surveyed (258 U.S. 149) was 18.4 miles in length and was almost entirely over water. Rectangular coordinates were computed for each angle, and suitable reference marks were established on shore.

In 1917, Wisconsin and Minnesota agreed to change their boundary in the Mississippi River by the exchange of two islands. Wisconsin ceded Island No. 72 opposite the City of Winona to Minnesota (Wisconsin Laws, 1917). Minnesota, in return, ceded Baron's Island (now Pettibone Park) opposite the City of La Crosse, to Wisconsin (Minnesota Laws, 1917). Congress approved the exchange (40 Stat 959).

The meridian boundary between Wisconsin and Minnesota from the St. Louis River to the St. Croix River was surveyed and marked in 1852 under the General Land Office, by George R. Stuntz, deputy surveyor. (General Land Office, Wisconsin field notes, v. 37,133.)

MAP CURIOSITY FEATURE

IF YOU KNEW OULU.....

We figure this 1984 quadrangle is so difficult to locate, that we'll actually give you its name: OULU. Where the heck is Oulu? Unincorporated Oulu is not far from Waino, which is at the conjunction of Koski and Tuura Roads. Oulu is south of Erkkila Road and on Reefer Road. Give up?

Answer: Oulu is on the Douglas-Bayfield county line. It's the first quadrangle covering the Lake Superior shore, T48/49N, R9/10W.



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