

WISCONSIN MAPPING BULLETIN

Vol. 16 No. 1 January 1990



REPORTING ON LAND INFORMATION AND MAPPING
SCIENCES IN THE STATE OF WISCONSIN

FUNDING FOR LOCAL LAND RECORDS MODERNIZATION PROPOSED BY STATE LAND INFORMATION BOARD

As we go to print, a bill recommended by the new Wisconsin Land Information Board (WLIB) is scheduled for immediate introduction in the current legislative session. In outline form, the bill would initiate on July 1, 1990 a "user fee" generated from an increase in the per page fee collected upon filing of documents at county Register of Deeds offices. The current legislative session is scheduled to conclude prior to April, so funding could be in place shortly.

The proposed fee, collected on approximately 1 million transactions each year, would raise approximately \$6 million statewide per year. These funds would be used for improvements in local land records and information systems, including compatibility for multiple uses which would reduce duplication. Additional funding for administration of the WLIB and its coordinating office are being sought from general purpose revenue (GPR).

The sponsors of the bill will be State Representatives Robert Welch (R-Redgranite) and Joseph Wineke (D-Verona). Supporters of the bill are expecting to gather significant bipartisan support from legislative co-sponsors. Welch and Wineke will discuss the bill at the Annual Conference of the Wisconsin Land Information Association (WLIA), February 19 in Stevens Point. WLIA will have copies of the bill available for distribution at the Conference (see page 8 for details on the Conference).

The WLIB's bill is based on a proposal that emanated from the WLIA, and which received significant input from the Wisconsin Register of Deeds Association. Last spring, Wineke and Welch sponsored the

legislation that created the WLIB. That bill contained a funding mechanism based on an increase in the real estate transfer fee, and this feature of the bill was eliminated after objections from some parties who felt that they would be bearing a disproportionate amount of the fiscal load. With the current proposal, many more types of transactions would be subject to the fee, and institutions such as utilities and state agencies would share more of the cost; homeowners would pay smaller direct fees, which further would be spread over various infrequent filings such as deeds, satisfaction of mortgage, etc.

In more detail, the proposal would increase the fee for the first page of applicable documents from the current \$4 to \$8, and for subsequent pages from \$2 to \$4. The new rates would be comparable to those in neighboring states. The increased fees would all be directed toward modernization of land records, but with a three-way split. The \$4 from the first page would be divided equally, with \$2 being retained in the county to develop, implement, and maintain a countywide modernization plan; this plan would be subject to approval by the WLIB. The county would also have to have established a land information "office" within 2 years. The other half of the first page fee increase would be used by the WLIB to fund grants-in-aid to local governments. The \$2 increase for subsequent pages would stay in the county to be used for similar modernization purposes. These rules and those relating to the first page funds are under consideration by the WLIB.

For more detailed or more current information, contact Bill Holland at (608) 267-2707.

DON'T MISS THE THIRD ANNUAL WLIA CONFERENCE IN STEVENS POINT

Monday & Tuesday, February 19-20, 1990
For registration information, call 608/262-3065.

LAND INFORMATION BOARD MEETINGS AND ACTIVITIES

The Wisconsin Land Information Board (WLIB) has moved rapidly in its initial meetings, to address an array of issues. The WLIB was established through the biennial budget bill signed by Governor Thompson last August. The Governor made his eight appointments to the 13-member board in October, and three meetings were held between December 7 and January 22.

The following are highlights of the WLIB to date:

Action

A recommendation for funding the state program and the WLIB's activities has been formulated. See the front page story for details.

Agenda

All voting members have agreed to participate in a session at the upcoming Annual Conference of the Wisconsin Land Information Association (WLIA), where each will speak to the WLIB's role. The conference is scheduled for Feb. 19-20 in Stevens Point.

A recommendation on requirements for content of state agency and local government modernization plans is under consideration. The board will solicit input and comments upon formation of an initial recommendation, which could be as early as the WLIA Conference.

Organization

As its first action, the board elected officers: Ben Niemann, Chair; Arden Sandsnes, Vice Chair; John Laub, Secretary. Several committees have been established to address specific agenda items.

Membership

The Wisconsin Department of Agriculture, Trade, and Consumer Protection designated James Johnson to hold its voting seat; Johnson heads DATCP's Land and Water Resources Bureau. Michael Hasslinger, the Waukesha County Register of Deeds, has been appointed by the Governor to replace Lois Ketterhagen, who resigned. The remaining eleven voting members of the board were announced in the last issue of this Bulletin.

The board is working on the selection of individuals to fill several advisory positions: "a county employe active in land information management", "a representative of a regional planning commission", and representatives of federal agencies as well as state agencies not already included as voting members.

Meetings

The WLIB has scheduled meetings for Feb. 12 & 23, and March 14. To date, the meetings have been held in Madison. For details on upcoming meetings, contact Bill Holland at (608) 267-2707.

CITY OF MILWAUKEE APPOINTS GIS MANAGER

William Shaw has been named GIS Manager for the City of Milwaukee. Bill has been with the City since 1988 as senior GIS analyst. He holds a degree in Computer Science and Design from Southern Illinois University, and has extensive experience as Manager of GIS Development at the Wis. Dept. of Natural Resources.

Bill has made significant contributions to the City's geographic information system. Not only has he pioneered the importation of the City's Master Property File from ADABAS to the graphic system's data base management system, DMRS, and its linkage to the digital base map, but he also developed the DIME File linkage and maintenance system which is a critical component for the two Computer Aided Dispatch Systems being implemented in the Police and Fire Departments.

In his new position, Bill will lead a team of 13 GIS analysts and programmers in the Information Systems Division of the City's Department of Administration. In 1990, the GIS Team will add 17 workstations to its network; begin a two and one-half year conversion project for water system records; implement TIGER, ORACLE, and ARC/INFO; implement a computer assisted mass appraisal system; and design new application systems for Tax, Planning and Building Inspection departments.

(source: City of Milwaukee)



COUNTY CARTOGRAPHIC CATALOG DEVELOPMENTS

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

CHIPPEWA: Published in December; copies available for sale from Map Sales, Wisconsin Geological and Natural History Survey. (price: \$7.00 at the Map Sales counter or \$8.00 by mail)

GREEN, CLARK: in process, scheduled for printing early 1990.

WINNEBAGO (2nd edition): in process, scheduled for printing mid 1990.

MARATHON: in initial phases.

WOOD, PORTAGE (2nd edition): in planning stage.

15 YEARS OF CARTOGRAPHY IN WISCONSIN

Editor's Note: As announced in our last issue, the current State Cartographer, Art Ziegler, will be retiring at the end of this year. The article below is the first of several commentaries by which Art will offer his retrospective view of mapping in Wisconsin.

In the late summer of 1974, upon taking up the task as the State Cartographer for Wisconsin, there were the rumblings of great events forthcoming in the state of cartography in Wisconsin.

LANDSAT 1 was in orbit, sending back the first MSS images, and the U.S. was preparing to send up LANDSAT 2. The state's 7.5 minute topographic quad mapping program was less than 50% complete, but the state had a high level commitment to completing the program. The first total state aerial photographic acquisition of 1966-67 was 8 years old and discussions were underway to repeat at even a larger scale. The UW Cartographic Lab was experimenting with its first automated mapping program called WISMAP using a PDP 1134 mini-computer with an amazing 128k RAM and mag tape storage. And some of us were meeting at the WARF building at UW-Madison, discussing, a soon to be common topic, land records. Among those involved in this topic during the summers of 1975 and 76 were some now familiar names in land records in the state: Jim Clapp, Al Miller and Ben Niemann.

Since those days the U.S. has sent up 3 more LANDSAT vehicles, 2 with Thematic Mapper scanners on board, the French have their SPOT, and we are building LANDSAT 6. Remotely sensed data is becoming a more common resource, especially in the classification field. My office was involved in two graphic portrayals, the Sturgeon Bay and Madison Satellite Images maps.

By persistence of the Wisconsin Topographic Mapping Committee led by Buzz Ostrom the State Geologist, the state accomplished complete coverage of 7.5 minute quads in the summer of 1985. There were various attempts during those 10 years to deviate from the goal of "complete state coverage first", but these were all successfully resisted. Now the program of maintaining this series faces the state.

In 1978-79 the state in a cooperative agency endeavor conducted a total aerial photographic acquisition at 5 times larger scale than the previous program. This was a highly successful acquisition as the volume of sales has proved. One of the beneficial side effects was the opportunity it provided for local government officials to learn first hand the valuable resource of such imagery in their activities.



One of the most far reaching changes in cartography has been the advent of computers in all the various operations, from digitizing line maps, enhancing imagery, to improving the final printed process, and all with improved efficiency. But there are some who say in the process we have lost the ability to apply some level of an art form to the science of cartography. This may be true. But CAD systems and GIS/LIS are here to stay. To illustrate the distance we have come, the UW-Cartographic Lab was experimenting with an automated system in 1974, and it now teaches cartography in a 100% computer environment. Manual methods have disappeared.

And finally through the investigations of 1975 and '76, there was published in January of 1978 the document "LAND RECORDS: The Cost To The Citizen To Maintain The Present Land Information Base". This study is still quoted today for certain of its costs aspects. Since that time we have had numerous other conferences and studies performed nationwide, and here in Wisconsin, the Town of Westport study, the 2 year Wisconsin Land Records Committee appointed by Governor Earl, the Dane County CONSOIL Project, and last summer the establishment of the Wisconsin Land Information Board by state statute.

While involved in the day to day operations the progress seems at a glacial creep, but when you step back and look at the longer time frame, major movement has been accomplished.

One personal observation: over the last 15 years, I would estimate the level of interest in land records in state, regional and local government has increased by at least 5 fold. And as I leave the field I am also pleased to note an increasing number of sharp, young (I can call almost everyone that), energetic professionals involved in the mapping, in both the public and private sectors.

The next 15 years should be a challenge.

Editor's note: With this issue we begin a series of articles on microcomputer programs for mapping. This project is being conducted by Susan Goral, a graduate student employee of the SCO.

MICRO MAPPING SOFTWARE

The 1980's have been a fruitful decade for microcomputer mapping software. A myriad of new products have been introduced in the last 10 years, many of which have progressed in form and functionality since their debut. Most products run on either an IBM-compatible (PC) or on an Apple Macintosh (Mac); a few are available in both versions.

In recent months, advertisements in the general media have pushed mapping as an application for the increasingly speedy and sophisticated machines we call microcomputers. This level of visibility is likely to lead to many more people doing some sort of mapping or geographic analysis on microcomputer.

This issue will provide a brief introduction, aimed primarily at the new or uninitiated mapping software user, to some of the different mapping software products and product-types in the PC and Macintosh market. More detailed product and product-type descriptions begin later in this article, and will continue in upcoming issues. References for more thorough software reviews and comparisons will be given in the detailed descriptions where applicable.

The continual introduction of new products, evolution of existing software, and reorganization of the mapping software industry (vis-a-vis mergers and acquisitions) make the compilation of a complete and current mapping software listing and categorization most difficult. Therefore, this series cannot represent all of the products which are currently available. The more detailed product and product-type descriptions beginning later in this article and continuing in upcoming issues, combined with the referenced software reviews and comparisons, will hopefully provide a more exhaustive representation of the microcomputer mapping software market.

We have not tested most of these products, but we have collected literature and have utilized a number of product listings and reviews. Local software dealers may carry some of these products, and may have some familiarity with them.

Today's PC and Macintosh mapping software products can generally be grouped into five product-types, differentiated by their mapping functions and capabilities. These groups include: Atlas and Information Programs; Map Creation / Presentation Graphics; Customized

Map Creation; Computer Aided Design (CAD) Systems; and Geographic Information Systems (GIS).

Atlas and Information Programs

These products are primarily designed as reference tools. They provide maps of the world or of specific regions, along with interesting facts and statistics on geography, population, economy, government, etc. Maps and statistics can sometimes be exported and used with other software programs. Products in this software category include:

Electromap World Atlas (PC)
Hyper Atlas (Mac)
PC Globe 3.0 (PC)
PC USA (PC)

Map Creation / Presentation Graphics

These products are most often used for creating maps for presentations and reports. Map creation is often limited to the boundary files provided with the software. Most of these products also have simple choropleth mapping capabilities (areas categorized by some ratio statistic). Products in this software category include:

Clip Art Maps (PC/Mac)
Electronic Map Cabinet (Mac)
Harvard Graphics Mapping (PC)
MacAtlas (Mac)
QuickMap (Mac)

Customized Map Creation

These products are primarily used for customized map creation. Maps are produced either with boundary files provided with the software or with boundary files imported from other programs. Some products also provide the capability of creating new, customized boundary files. Choropleth mapping functions are a standard feature. Statistical data may also be included with the boundary files. These products are often used as a market analysis tool. Products in this software category include:

MapMaker (Mac)
Atlas * Graphics (PC)
Multi-Map (PC)
MapMaster (PC)
Fastmap (PC)
MapInfo (PC)

Computer Aided Design (CAD) Systems

Computer Aided Design (CAD) systems are commonly used as a map production tool for their precision drafting capabilities. With the inclusion of coordinate geometry (COGO) capabilities, survey measurements can be incorporated directly. CAD systems are especially useful for large scale-map creation, including

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CAD Systems...

construction plans, land parcels and utility networks. CAD systems may also provide basic analytical functions. CAD software products include:

AutoCad (PC)
Cadserv (PC)
FastCAD (PC)
Generic Cadd (PC)
LANDCADD (PC)
Landesign (Mac)
Strings (PC)

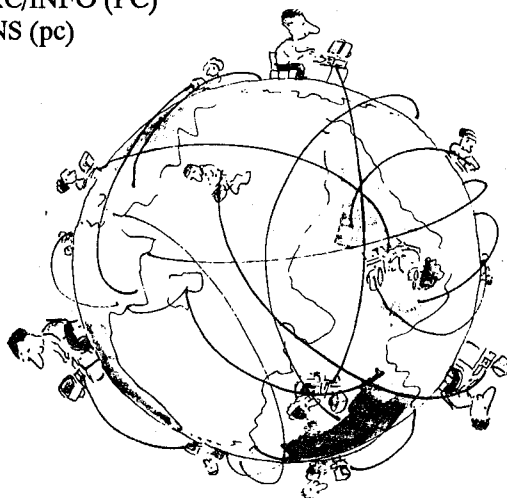
Third-party software can transform CAD systems into sophisticated analytical Geographic Information Systems. Third-party software products for CAD systems include:

FMS/AC (PC)
Geo/SQL (PC)
GIS Master (PC)

Geographic Information Systems

GIS software products provide the capability to assemble, manage and analyze geographically referenced data. Analysis functions may include; map and/or polygon overlay, buffering, distance measurement, geographic query and boolean operations (and; or; not). GIS software is also commonly used for complex cartographic production. Maps can be created using the GIS software or from imported boundary files. GIS software products include:

Accumap (PC)
ATLAS * GIS (PC)
DeltaMap (PC)
Fastmap (Mac)
MapGrafix (Mac)
Micro Station (PC/MAC)
pcARC/INFO (PC)
SPANS (pc)



Atlas and Information Programs

Atlas and Information Programs are primarily designed as electronic reference tools and are used most commonly by educators, librarians, and business people. They combine the attributes of an atlas, almanac, and world or regional fact book into one program. Maps of the entire world or of specific regions are provided along with a wealth of vital facts and statistics on political organization, physical features, climate, natural resources, population, urbanization, balance of trade, etc. Thematic maps and charts based on comparative statistical data can be displayed (often in vivid color) in the program and can sometimes be imported into other programs.

Hardware requirements for Atlas and Information Programs are relatively minimal. RAM requirements range from 384K to 640K. EGA or VGA card and color monitor are required for the PC products. A hard disk may also be required, with 5 MB of available disk space. Prices for this software product-type generally range from \$69 to \$159. For more information on these products contact the software publisher directly.

Electromap World Atlas (PC)

Electromap, Inc.
P.O. Box 1153
Fayetteville, AR 72702-1153
(800) 336-6644

PC Globe 3.0 (PC)

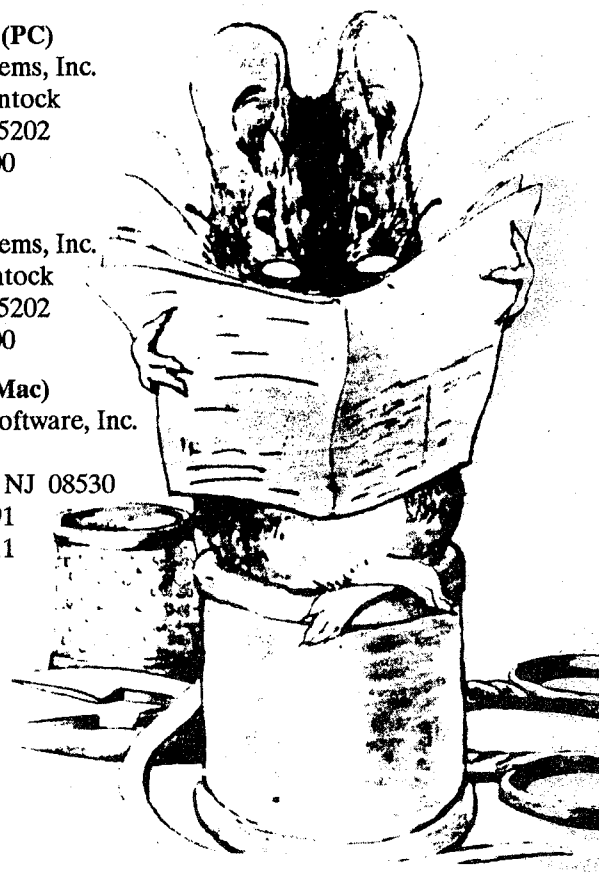
Comwell Systems, Inc.
4700 S McClintock
Tempe, AZ 85202
(602) 730-9000

PC USA (PC)

Comwell Systems, Inc.
4700 S McClintock
Tempe, AZ 85202
(602) 730-9000

HyperAtlas (Mac)

MicroMaps Software, Inc.
P.O. Box 757
Lambertville, NJ 08530
(800) 334-4291
(609) 397-1611



PUBLICATIONS

MULTIPURPOSE LAND INFORMATION SYSTEM GUIDEBOOK AVAILABLE

The Federal Geodetic Control Committee is preparing a guidebook for developing multipurpose land information systems (Multipurpose LIS or MPLIS). The guidebook builds on the National Research Council's publications on the multipurpose cadastre and focuses on local government's role in developing the multipurpose cadastre. It will provide technical and policy guidance to states, counties, cities, and regional planning bodies, and presents the best, most current theoretical and empirical information available on how to improve land information systems.

The guidebook will be sold by subscription. Organized in five sections and bound in a looseleaf notebook, the guidebook's first four sections will be released between October 1989 and September 1990. The looseleaf format will accommodate the additions, revisions, and updates inherent in this rapidly evolving field. Section 5 is reserved for technical bulletins, issue papers, updates, additions, and other revisions. The first several chapters are being printed at this time.

The guidebook is intended for those who evaluate, plan, and implement land information systems. The guidebook is specific, particularly for local applications. If the audience will have to make a decision, it provides background information and implications. The guidebook also covers the planning process, institutional context, organizational models, operating procedures, standards, pitfalls, and other issues.

The guidebook will also be useful to federal, state, and regional governments and to those in private sector as they participate in implementing a MPLIS. The guidebook provides an introduction to land information systems while emphasizing the multipurpose aspects. It discusses the roles of various levels of government and how the actions of regional, state, and federal governments can affect local government's ability to utilize MPLIS. For an application form, contact National Geodetic Information Center, N/CG174, Rockwall Bldg., Room 24, NGS-NOAA, Rockville, MD 20852, phone 301/443-8631.

(source: *C&GS Update*, September 1989)

DEVELOPMENTS IN LAND INFORMATION MANAGEMENT

Developments in Land Information Management was recently published by the Institute for Land Information (ILI). This 184-page, softcover volume contains recent papers on land information management including the conceptual framework of land information systems, discussions of major issues facing the land information management communities, various perspectives on the scope and definition of land information systems, and a historical overview of the multipurpose cadastre. Papers on land information system applications cover municipal and state governmental topics, the Topologically Integrated Geographic Encoded and Referenced (TIGER) data base to support the 1990 U.S. Census, and parcel-based land information systems.

The book was edited by Richard E. Dahlberg, a professor at Northern Illinois University and editor of *The American Cartographer*, and professors John D. McLaughlin, University of New Brunswick, and Benjamin J. Niemann Jr., University of Wisconsin-Madison. Contact: ILI, 440 First St., NW., Eighth Floor, Washington, DC 20001.

(source: *ACSM Bulletin*, December 1989)

FIRST EEZ BATHYMETRIC MAP PRODUCED

The first high precision bathymetric map of the Exclusive Economic Zone (EEZ) has been printed for the Monterey Canyon area off the coast of California. The map, at a scale of 1:100,000, is compiled from multi-beam sounding data that were collected in the area to cover 100 percent of the seafloor. Also, for the first time, a 3-dimensional isometric depiction of the mapped area is printed on the map. A digital data set of the Monterey Canyon area is available. The National Ocean Service is continuing a multi-year program of data collection in the EEZ, and plans to print nearly 2,100 maps covering the entire area, which extends from the shore out to 200 nautical miles. The price of \$10.00 each includes tax, shipping and handling. For ordering information contact Carl Fessi at 301/443-8855.

(source: *C&GS Update*, Vol. 2, no. 1)

PUBLICATIONS



NEW NGS PUBLICATIONS

The following new publications have been added to the catalog of geodetic and charting publications available from the National Geodetic Survey (NGS).

NOAA Manual NOS NGS 5. *State Plane Coordinate System of 1983*, by Stem, James E., January 1989, 119 pp., \$10. Provides information and equations necessary to perform survey computations on the State Plane Coordinate System of 1983, a projection system based on NAD 83.

Input Formats and Specifications of the National Geodetic Survey Data Base: Volume I - Horizontal Control Data (Includes GPS), by National Geodetic Survey, January 1989, 250 pp., \$12. Describes the requirements for submitting field survey data to NGS for inclusion into the National Geodetic Reference System.

NOAA Technical Report NOS 130 NGS 43. *The National Geodetic Survey Absolute Gravity Program*, by Peter, George; Moose, Robert E.; and Wessels, Claude W., March 1989, 17 pp., \$1.25. Describes the program of gravity measurements NGS conducts jointly with the Defense Mapping Agency's Hydrographic/Topographic Center to investigate local and regional crustal motions and temporal variations of gravity.

Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques, by Federal Geodetic Control Committee, Version 5.0 (May 88), August 1989, 48 pp., \$2.75. Provides Specifications covering network geometry, instrumentation, calibration procedures, field data collection procedures, and data reduction procedures for GPS relative positioning surveys.

For more information contact Ms. Vicki Davis, 301/443-8631.

(source: *C&GS Update*, September 1989)

EARTHSHAKING DECADE MAP

The U.S. Geological Survey and the Smithsonian Institution have jointly published a world map of volcanoes, earthquakes, and plate tectonics as a contribution to the International Decade for Natural Disaster Reduction. This computer-generated map shows the topography of the land surface and the sea floor, with color and shaded relief to help distinguish important features. Volcanoes that have been active during the past 10,000 years are plotted from the Volcano Reference File of the Smithsonian Institution, along with epicenters of selected large earthquakes from 1897 onward and from instrumentally recorded quakes from 1960 to the present. Copies of this map may be purchased for \$3, plus \$1 handling, from the U.S. Geological Survey, Map Distribution, Federal Center, box 25286, Denver, CO 80225, 303/236-7477.

(source: *Natural Hazards Observer*, Vol. XIV, No. 3, Jan. 1990)



IBM ACQUIRES STOCK IN WISCONSIN GIS FIRM

IBM Corporation has agreed to acquire an equity interest in Geography Systems Corporation, a provider of GIS solutions, based in Green Bay, Wisconsin. IBM and Geographic Systems Corporation intend to work closely with each other to enhance existing IBM-based GIS solutions and develop new ones.

Geographic Systems Corporation is a newly-created company formed to acquire substantially all of the assets of WPS Development, Inc. of Green Bay and Integrated Information Systems of San Diego. The new company's principal owners are IBM and the Wisconsin Public Service Corporation.

Geographic System Corporation will allocate significant resources to research and development to deliver improved GIS application products to the geoprocessing marketplace. The company, which will be designated an IBM Business Partner, will concentrate on application software, project services and support, and data translation and integration.

Geographic Systems Corporation regional offices will be located in San Diego, Houston and New York.

(source: *GIS World*, Nov./Dec. 1989)

CONFERENCES AND TECHNICAL MEETINGS

February 14-17, **Minn. Soc. of Professional Surveyors 38th Annual Meeting**, Bloomington. Contact: Sharon Harris, Admin. Coordinator, 1700 N. Skyline Dr., Burnsville, MN 55337. Call: 612/890-6991.

February 19-20, **Third Annual Conference of the Wisconsin Land Information Association**, Stevens Point, WI. Contact: State Cartographer's Office, 155 Science Hall, University of Wisconsin-Madison, Madison, WI 53706-1404, 608/262-3065.

March 5-7, **Introduction to Global Positioning Systems (GPS)** will be held at the University of Wisconsin-Madison, Union South, 227 N. Randall Street., Madison, WI 53706. For more information contact Engineering Information 608/263-3160, Robert T. Fey, Program Dir.

March 5-8, **GIS for the 90's: 2nd Nat'l GIS Conference** will be held in Ottawa, Ontario, by CISM, Inter-Agency Committee on Geomatics, SM&RS Sector, EMR. Contact John Gauthier 613/820-2291.

March 8, Wisconsin Chapter of AM/FM, "Focus on Scanning", 7:30 pm in the Waukesha area. Non-members welcome. Optional dinner at 6:30 pm. Contact: Jerry Laatsch at 414/291-6927.

March 9, ASPRS Western Great Lakes Chapter meeting, 1:30 pm at the Golda Meier Library at UW-Milwaukee. Non-members welcome. Contact John Jacobson at 312/438-4300.

March 13-16, **GIS '90**, Vancouver, British Columbia, Canada. Contact: Symposium Office, 134 Abbott Street, Suite 303, Vancouver, B.C., Canada V6B 2K4, 604/688-0188.

March 14-16, **GIS In Natural Resource Management: A Short Course for Managers**, will be held at the Stapleton Plaza Hotel and Fitness Center located at the Denver Airport, Denver, CO. For more information contact Wilma Holsinger, 303/484-1973.

March 14-16, **GIS For Transportation Symposium** will be held at the St. Anthony Hotel, 300 E. Travis St., P.O. Box 2411, San Antonio, TX 78298, 512/227-4392. For more information contact Scott D. Burford, Manager, Administrative Services, 512/465-7540.

March 18-23, **ACSM/ASPRS Annual Convention**, Denver, CO. Contact: Ronald Walbach, 10420 Glennon Dr., Lakewood, CO 80226. Call: 303/236-5825.

April 1-5, **Joint Meeting: American and Canadian Water Resources Associations**, will be held in Toronto, Canada. For more information contact Mr. Craig Mather, AWRA/CWRA Symposium, Metropolitan Toronto and Region Conservation Authority, 5 Shoreham Drive, Downsview, ON M3N 1S4. Call: 416/661-6600.

April 4-6, **GIS In Natural Resource Management: A Short Course for Managers**, see March 14-16 listing for details.

April 9-11, **Digital Geographic Information Systems**, will be held at The George Washington University, Continuing Engineering Education Program, School of Engineering and Applied Science, Washington, D.C. 20052. Call: 202/994-8519.

April 9-12, **1990 AIIM (Association for Information and Image Management) Show and Conference** will be held at the McCormick Place East, 23rd and Lake Shore Drive, Chicago, IL 60616. For more information contact: AIIM Conference "Hotline" 301/587-8202.

April 10-12, **Managing the Risks and Recovering the Costs of Geographic and Facilities Management Systems**, will be held at the University of Wisconsin-Madison, The Wisconsin Center, 702 Langdon Street, Madison, WI 53706. For more information contact Patrick Eagan, Program Director, 608/263-7429.

April 16-20, **Thermosense XII: An International Conference on Thermal Sensing and Imaging Diagnostics Applications**, SPIE, Orlando, Florida. Contact SPIE, P.O. Box 10, Bellingham, WA 98227-0010. Call: 206/676-3290.

April 19-22, **Assoc. of American Geographers Annual Meeting** will be held at the Sheridan Centre in Toronto. Contact: Sally Meyers, AAG, 1710 16th St. NW, Washington, DC 20009-3198. Call: 202/234-1450.

April 22-26, **AM/FM International Conference**, will be held at Stouffer Harborplace Hotel, Baltimore, MD. Call Bob Samborski, 303/779-8320.

April 30-May 3, **Mid-America GIS Symposium**, sponsored by the Six State GIS Consortium, at the Marriott Hotel in Overland Park, Kansas. Contact: Vicky Varner, Symposium Publicity Committee, Kansas Applied Remote Sensing, Kansas University, 2291 Irving Hill Road, Lawrence, KS. Call: 913/864-7721.

May 14-17, **Introduction to Remote Sensing Using ERDAS** will be held in the Natural Resources Bldg. on the Cook College Campus of Rutgers University. For more information contact the Registration Desk, Office of Continuing Professional Education, Cook College, P.O. Box 231, New Brunswick, NJ 08903, 201/932-9271.

May 16-18, **GIS In Natural Resource Management: A Short Course for Managers**, see March 14-16 listing for details.

May 16-18, **The Status of Remote Sensing Research and Applications For Use in Agriculture**, will be held at NASA in Greenbelt, Maryland. For more information contact Mrs. M. Blackwell, BARC XV Symposium, Building 1, BARC-West, Beltsville, MD 20705.

May 17, Wisconsin Chapter of AM/FM, "AM/FM for Public Works", 7:30 pm in the Milwaukee area. Non-members welcome. Optional dinner at 6:30 pm. Contact: Jerry Laatsch at 414/291-6927.

May 20-24, **1990 International Geoscience and Remote Sensing Symposium (IGARSS '90): Remote Sensing Science for the Nineties** will be held at the University of Maryland, College Park, Maryland. For more information contact Dr. James A. Smith, Technical Program Chairman, 301/286-7282.

May 30-June 1, **Geographic Information Systems for City and County Operations and Resource Management**, see April 9-11 for details.

June 10-13, **Canadian Cartographic Association Annual Meeting**, Victoria, British Columbia. Contact: Peter Keller, Geography Department, University of Victoria, Box 1700, Victoria, British Columbia, Canada V8W 2Y2. Call: 604/721-7333.

July 8-11, **AM/FM/GIS Executive Management Symposium: Impacts on Decisions in the 1990's**, will be held in Keystone, Colorado. Contact Bob Samborski, AM/FM International, 8775 East Orchard Road, Suite 820, Englewood, CO 80111. Call: 303/779-8320.

July 22, **ALA Preconference Workshop on Satellite Imagery and Aerial Photography**, will be held in Chicago, IL. For more information contact: Ellen Caplan, 614/764-6000, or Nancy Vick, 217/333-0827.

August 12-16, **URISA's 28th Annual Conference**, Edmonton, Alberta, Canada. Contact: URISA, 900 Second St. NE, Washington, DC 20002. Call: 202/289-1685.

September 17-21, **ISPRS Commission VII, Global and Environmental Monitoring**, at the Victoria Conference Centre, Victoria, B.C. Contact: Frank Hegyi, President, Commission VII, 1450 Govt. St., Victoria, B.C., Canada V8W 3E7. Call: 604/387-6722.

ADVANCED PHOTO IMAGE CORRELATION TECHNOLOGY

The Nautical Charting Research Development Laboratory (NCRDL) is in the final stages of the development of a technique that will allow the position of ground points in aerial photographs to be determined with double the accuracy of present methods, and in less than one-third the time.

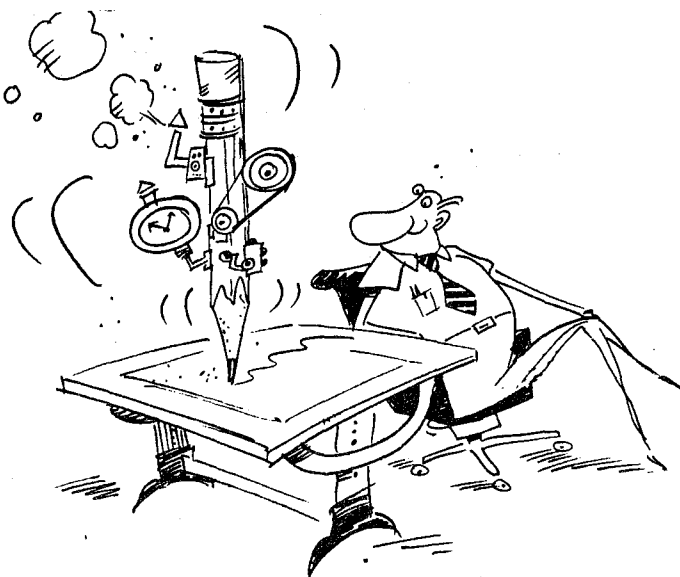
Determining the precise location of certain ground control points (or more specifically, their images on three or more photographs) is one of the first steps in making a map or chart from aerial photography. Since only two photos can be viewed stereoscopically at one time, it is difficult to measure to exactly the same point on three, four, or more photographs.

The two techniques currently in use to minimize the errors in this position determination process have serious drawbacks. Premarking ground points before photography is flown is expensive and time-consuming. Marking images by drilling microscopic holes in the emulsions of stereo photo pairs introduces errors that are difficult to detect.

C&GS has contracted with Helava Associates Inc. (HAI) to equip one of the world's most accurate measuring instruments, the Mann Automatic Stellar Comparator and laser interferometer, with a digital camera to capture and store small patches of aerial photographs on disk. A computer can then match, or correlate, the images of an object on several photos yielding measurements to better than one micrometer.

For more information, contact: Mr. James Lucas, 301/443-8874.

(source: *C&GS Update*, September 1989)



COAST GUARD ESTABLISHES NEW GPS CENTER

The U.S. Coast Guard, an agency of the U.S. Department of Transportation (DOT), is establishing a civil global positioning system (GPS) information center that will operate out of the OMEGA Navigation System Center in Alexandria, VA. The center is expected to begin operating late this year or early next year.

The Department of Defense (DOD) had been responsible for relaying information about GPS satellites to the defense and civilian communities; however, DOD requested that DOT begin handling civilian inquiries. As a result, the DOT Research and Special Programs Administration organized a Civil GPS Service (CGS), committee with an executive branch of representatives from government agencies, and a general branch with representatives from both government and the user community.

The new GPS center will provide two ways to access information about satellite shutdowns: a telephone recording and a computer bulletin. The recording will be updated daily with information about future satellite outages, scheduled outages of satellites by number, and any current information about the satellites. The computer bulletin board will provide text and data on GPS information. Information from the service will allow planning from one month to six months in advance.

Lieutenant Commander Doug Alsip noted that surveyors are currently running into problems because only nine satellites are in orbit. However, beginning next year, one satellite is expected to be launched every two months for three years. By the second quarter of fiscal year 1993, 24 satellites will be maintained on a permanent basis.

Until the GPS service information center is operational, information about the shutdown of satellites can be obtained from a telephone recording provided by the Air Force. The recording gives the current status of satellites and information on future outages. The phone number is 303/550-2115. In addition, the Air Force maintains a computer bulletin that can be accessed by dialing 602/328-3162. The computer provides information on any problems with satellites and predicts coverage at any particular time or place. The Air Force will shut down its GPS information activities as soon as the civil GPS service begins operating.

(source: *ACSM Bulletin*, Dec. 1989)

DISCUSSIONS ON HORIZONTAL GEODETIC CONTROL ISSUES HELD AROUND STATE

Over the course of 4 consecutive evenings in mid-December, a series of presentations and discussions on horizontal geodetic control were attended by over 100 persons. The meetings, sponsored by the Technical Research Committee of the Wisconsin Land Information Association (WLIA), were held in Madison, Milwaukee, Green Bay, and Eau Claire.

Four panelists presented a variety of information on the technical and institutional aspects of conditions and opportunities in Wisconsin relative to the datums and coordinate systems. The panelists were James Stem of the National Geodetic Survey, Alan Vonderohe of the University of Wisconsin-Madison, John Haverberg of the Wisconsin Department of Transportation, and Tom Patterson of the Southeast Wisconsin Regional Planning Commission.

A number of issues and points of information were raised at these meetings:

- The North American Datum of 1983 (NAD 83) has been implemented and adopted by the federal government.
- Two factors led the National Geodetic Survey (NGS) to develop NAD 83: a need to redefine the mathematical reference surface so that it would be earth-centered, and would better approximate the overall true size and shape of the earth; and the large number of geodetic measurements and new control stations that had accumulated since NAD 27 was established.
- There are shifts in the latitude and longitude of control stations, between NAD 27 and NAD 83, due to both the change of the mathematical reference surface and the inclusions of the new stations and measurements. In Wisconsin, the combined changes in latitude and longitude from one edge of the state to the other are about 35 feet. However, the change is not smooth; within a county or region, changes vary from very little to 10-20 feet.
- Shifts between the two datums are important to all LIS users because many local control networks, existing hardcopy maps, digital maps and data bases, and other records are referenced to NAD 27.
- Current Wisconsin statutes refer to NAD 27, but not to NAD 83.
- 26 other states, including all 4 contiguous to Wisconsin, have officially adopted NAD 83.
- Computer software developed by NGS, for conversion from NAD 27 to NAD 83, will be available soon.
- There are costs in converting from NAD 27 to NAD 83; these costs are greatest for those agencies that

have made the most progress in developing digital land information systems (LISs).

- NAD 83, which is more accurate than NAD 27 in general, and substantially more accurate in some of the less populated parts of the state, should be used in the development of new LISs.
- Agencies that have made substantial investments in LIS, using NAD 27 as the geodetic foundation, should not be required to convert data bases to NAD 83 all at once.
- In the 7 southeastern counties, costs of conversion are estimated to be between several thousand and 2 million dollars per county.
- Costs and benefits of converting, as well of not converting, are not well defined or documented.
- Funds for conversion efforts will be difficult to obtain.
- The Wisconsin Department of Transportation is establishing a separate horizontal control network, based on the same reference surface as NAD 83. This new network, which will include but will not be constrained by several existing control points, will be more accurate than NAD 83 due to the use of new global positioning system (GPS) technology.

A full report by the WLIA Research Committee is scheduled for presentation at the WLIA Annual Conference in February. Myron Bacon is Chair of the committee; he can be reached at (608) 266-2392. There are a number of recommendations that the committee might make, given the various fiscal and organizational considerations which arise from different perspectives.

EOSAT SUSPENDS BLACK AND WHITE LANDSAT TM PRODUCTS

Until further notice, EOSAT has suspended production of some black & white photographic products created from Landsat Thematic Mapper (TM) data. EOSAT will, however, continue to offer black & white imagery of any Landsat archive data stored at EROS Data Center, which includes processed TM data and all Multi-Spectral Scanner (MSS) data collected to date.

EOSAT is evaluating new techniques to provide an improved black & white, single-band photo product. Customers will be notified immediately when production of the new photo products is initiated.

There will be no disruption in the production of color TM and MSS imagery. EOSAT will continue to offer its full line of color imagery products.

If you have any questions or require any searches for data availability in the EROS processed data archive, contact EOSAT Customer Services: EOSAT Customer Services, 4300 Forbes Blvd., Lanham, MD 20706 USA, phone (800) 344-9933.

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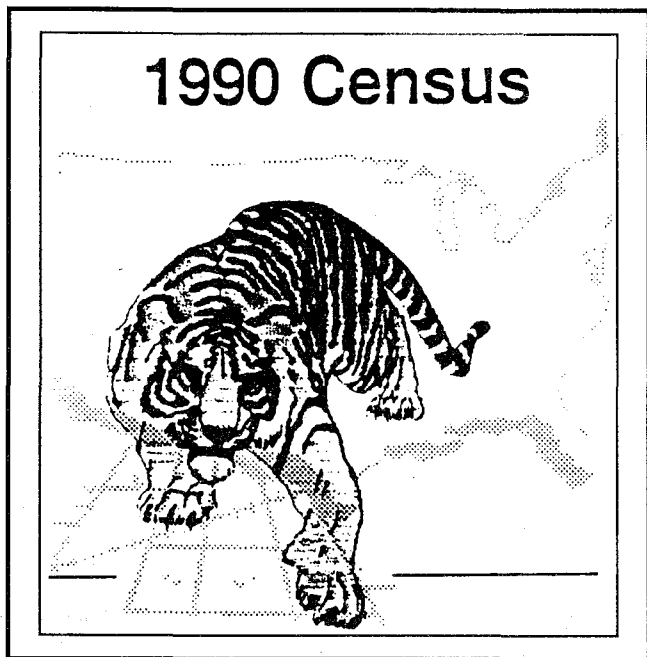
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Correction

In our last issue (Nov. 1989) we indicated on page 4 (col. 2, top) that the University was being considered as a potential manager for statewide satellite land cover mapping. The word "not" was left out; in fact, the University's interest is limited to research and development, and definitely does not extend to long term program management or administration.

ACADEMIC DEPARTMENTS MAILING LIST AVAILABLE

As part of this effort to conduct GIS education surveys in 1986 and 1989, Dr. John Morgan (Dept. of Geography and Environmental Planning, Towson State University) has developed a computerized mailing list of academic departments of geography, landscape architecture, urban and regional planning, agronomy, forestry, civil engineering, and surveying. The mailing list, which consists of over 1,400 entries for academic departments in the United States and Canada, has been thoroughly verified. Work is currently underway to expand the mailing list to other academic departments who are likely users of GIS, as well as academic departments outside of North America.

The mailing list is being made available on a commercial basis in the form of zip code sorted mailing labels for all or part of the mailing list. Use of the mailing list will be limited to universities, governmental agencies, and businesses who wish to send information on GIS hardware, software, services, meetings and publications to the academic community. For information on how to purchase mailing labels from the academic department mailing list, contact: Dr. John M. Morgan, III, The Morgan Group, Inc., P.O. Box 10645, Baltimore, MD 21285, 301/665-6333.

(source: *URISA News*, Nov./Dec. 1989)

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 March 9, 1990.

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