North Dakota Heritage Center
Bismarck, North Dakota
(Jan. 30 - March 26, 1994)

Broward County Main Library
Ft. Lauderdale, Florida
(Feb. 13 - April 9, 1994)

Christensen Center, Augsburg College
Minneapolis, Minnesota
(April 17 - June 11, 1994)

Des Moines Main Public Library
Des Moines, Iowa
(May 1 - June 25, 1994)

Connecticut State Library
Hartford, Connecticut
(July 3 - Aug. 12, 1994)

Oklahoma Center for the Book
Oklahoma City, Oklahoma
(July 17 - Sept. 10, 1994)

Michigan Library & Historical Center
Lansing, Michigan
(Sept. 18 - Nov. 12, 1994)

Kentucky Department for Libraries
Frankfort, Kentucky
(Oct. 2 - Nov. 26, 1994)

Virginia State Library
Richmond, Virginia
(Dec. 4, 1994 - Jan. 28, 1995)

Oregon State Capitol
Salem, Oregon
(Dec. 18, 1994 - Feb. 11, 1995)

Kansas Museum of History
Topeka, Kansas
(Feb. 19 - April 15, 1995)

Indiana State Library
Indianapolis, Indiana
(March 5 - April 29, 1994)

Seattle Public Library
Seattle, Washington
(May 7 - July 11, 1995)

California Library and Courts Building II
Sacramento, California
(May 21 - July 15, 1995)

Using the metaphor of a journey, ***Language of the Land*** tours the literary landscape of the United States. The core of the exhibition begins with quotations that provide impressions of the United States by "roving authors" who toured the country, such as Walt Whitman, Mark Twain, John Steinbeck, and William Least Heat Moon. These quotes link four regional sections (Northeast, South, Midwest, and West), each of which is introduced or framed by images and other quotes that strongly evoke that region. Within each regional section, a map is used to highlight a famous literary journey associated with that region, such as Huckleberry Finn's travels down the Mississippi River with Jim and the Joad family's trek to California in Steinbeck's the *Grapes of Wrath*. Quotations from the authors who created works that are identified with a specific region are also included in the individual sections.

Microfiche of Maps from the National Archives of Canada

MicroColor International in cooperation with the National Archives of Canada has announced the release of a selection of maps on color microfiche. The maps represent some of the most historically significant maps in their collection. They include the 19th century bird's eye views of major cities from 1875 to 1903, land ownership maps, and a topographical survey of the Rocky Mountains. In addition to the Canadian maps, MicroColor also offers the Samuel Thornton Sea Atlas from the New York Public Library, and in cooperation with the British Ordnance Survey, more than 200 maps covering current street maps of major cities in the UK and the Landranger Series. For a complete catalog of available maps call 1-800-666-4054. ❑

cartographic events

THE MAP LIBRARY IN TRANSITION

On October 18 & 19, 1993 a special conference, The Map Library In Transition, took place in Washington D.C. The conference was jointly sponsored by the Congress of Cartographic Specialists Associations and the Geography and Map Division of the Library of Congress. The goal was to exchange ideas and information about the changes and challenges that digital cartographic technology was creating for libraries. Some members of NACIS attend the conference, however, many could not be present. We are, therefore, publishing in its entirety, the transcript report from the conference as a service to our members. The report was written by contributions from Edward H. Dahl [ED], Kathryn Womble [KW], Marsha Selmer [MS], Cathy Moulder [CMo], Trudy Bodak [TB], Carol Marley [CMa], and Alice Hudson [AH] compiled by Alberta Auringer Wood.

Report on The Map Library in Transition

The organizations participating in the Congress of Cartographic Specialists Associations are the American Congress on Surveying and Mapping, the Association of Canadian Map Libraries and Archives, the Committee of Southeast Map Librarians of the Association of American Geographers, the Geography and Map Division of the Special Libraries Association, the International Society of Curators of Early Maps, the Map and Geography Round Table of the American Library Association, the Map Online Users' Group, the North American Cartographic Information Society, the Northeast Map Organization,

and the Western Association of Map Libraries.

The meeting opened with long lines at a registration desk as over 100 attendees picked up their badges and final program. Fortunately, there were several people helping with this operation, and it was completed in time to start the meeting only a little bit off schedule.

Ralph Ehrenberg, Chief of the Geography and Map Division introduced Dr. Deanna Marcum, Director, Public Services, Collections Management 1 [Special Collections], Library of Congress, who welcomed the participants to the CCISA conference and thanked both the organizers and sponsors. Dr. Marcum mentioned the vigorous support of the Librarian of Congress, Dr. James Billington, for the concept of an "electronic library" which helps bring about "a library without walls." A major initiative to this end was the Library of Congress (LC) American memory project, launched in 1989. This is an ongoing project which places library materials in electronic form on optical disk. Dr. Marcum also described the LC's demonstration laboratory in which people can look at various technologies which have possible relevance to libraries. She also noted that the Geography and Map Division had in the past year created a GIS specialist position, now occupied by Gary Fitzpatrick.

Gary Fitzpatrick (co-chair of the organizing committee) followed with a few announcements and outlined the events to take place during the next two days.

Then Dr. Christopher Baruth, American Geographical Society Collection, University of Wisconsin, Milwaukee (co-chair of the organizing committee), who gave an overview of the conference goals and program. Chris noted that this conference was an outgrowth of a meeting that was held five years ago in Chicago of representatives from the sponsoring organizations. At this meeting two of the expressed goals were to encourage greater communication which was accomplished by the institution of MAPS-L by Johnnie Sutherland of the University of Georgia and to hold an international meeting which is occurring over these two days. What Baruth called "the digital revolution in cartography" challenges map librarianship. Information areas in libraries which are not well understood and have high space requirements are vulnerable. Digital cartography requires more advanced equipment, with higher associated costs and training. The aim of the conference was to provide map librarians with information on this revolution and to work towards an accord on needs and service delivery. [ED, CMo]

The first session entitled "Where Map Libraries are Today and Where They Are Headed" was moderated by Dr. Baruth with Colleen Beard of Brock University as the first speaker. A main challenge for map librarians is to create a reputation as experts about digital spatial data. After investigating options for her own library, she sees the functions of the map library as acquiring and providing digital data, electronic atlases, and custom maps or maps on demand, and providing some means for geographic information system (GIS) analysis. Map librarians must decide the types of data to collect for their users and the methods of access they will use, and they must gain the skills and knowledge to work with different digital formats, the off-loading of data files and some level of geographic data analysis using GIS.

Deborah Lords, University of Utah, asked whether there is a future for map librarians. She is concerned that library education is not keeping up with new technologies available, such as Gopher and Archie. She believes that the American Library Association should be setting standards for library education. Ms. Lords pointed out her concern about the "envelope of disenfranchisement" — those who do not have access to any of the new technologies. If librarians do not decide how to handle the challenges posed by new technologies, someone else will, and they will probably charge fees to their users. Librarians must actively move forward. "Stagnation is death."

Thornton P. (Patrick) McGlamery from the University of Connecticut spoke about map libraries as places. He asked the question, "Will anyone come to the map library anymore?" He encourages map librarians to begin thinking in terms of spatial data rather than maps. We can view maps as artifacts (form) or as carriers of spatial data (function). Mr. McGlamery found some useful ways of thinking about the transition from paper to electronic data in Michael Buckland's book Redesigning Library Services. System networking means the map library is not just in the basement anymore. A local area network (LAN) becomes a file server on another network. An analogy Mr. McGlamery uses in describing two computer hard drives in his collection is that they are like map cases. They store a lot of maps, they cost about the same as a map case and they're square like a map case!

People will come to the map library more for training than for data. Libraries will continue their role of providing cataloging and location devices for data and continue to provide reference service. Sophisticated data users will demand easy ways to get the data they need. Less sophisticated users will need training. How well we describe the data and point to it has been a traditional role for the

librarian and will continue to be in the future.

Gary North of the U.S. Geological Survey spoke next. Data is coming to map libraries on CD-ROM and this trend will continue. The Government Printing Office (GPO) must decide how to reproduce and distribute large quantities of this data to the library community. Data producers should work on ways to improve file structures for data and some government/private industry creative research and development agreements have begun in order to do this. New electronic metadata systems are emerging. Map librarians should think about plotting their collections graphically in addition to traditional descriptive cataloging. Standards must be set as more joint data production projects go forward. Map librarians must anticipate and plan for changes such as not receiving paper maps anymore, for changes at the GPO, and for people accessing information from their homes. Changes in the electronic information world have just begun. Librarians must define their role and not let it be defined for them by engineers and scientists.

Johnnie Sutherland at the University of Georgia envisions his map library installing a LAN hardwired to the campus mainframe with 4 workstations, CD-ROM drivers, 2 gigabytes of hard disk space and laser printers. As map librarians, we will use set ups like this to access hundreds of different sites for data. Mr. Sutherland will be a spatial data specialist, who will train users on GIS software and how to download data. He predicts that other specialists will continue to need help finding the data they need. He will employ a scanner system to make his large paper collection more useful for those working with digital data. Each library must determine and implement what level of service it can afford.

Linda Zellmer, University of Wyoming, is planning a new library and has developed a list of questions she is using to move forward in utilizing digital data in the map and earth science library. The choice of a library GIS should be based on the library's goals. A full GIS system would provide the information and technology needed to use and analyze all types of spatial data. A partial system would provide access to spatial data in all forms without analysis capabilities. Some criteria for selecting a library GIS are that it be user friendly, capable of being modified easily to accommodate new data sets, have a reasonable cost and be able to perform library-related functions. Research opportunities in this area include testing various systems against the criteria developed to select them, developing user friendly interfaces so that patrons can use the system with little assistance from library personnel and developing library-related applications. [KW]

After a short break, Diana Rivera of Michigan State University chaired the session on "Reports on Initiatives." This was begun by Alberta Wood who reported on the "GIS in Libraries Survey" that had been organized by the Congress of Cartographic Information Specialist Associations (CCISA) and co-funded by the Association of Canadian Map Libraries and Archives and the North American Cartographic Information Society. The survey was undertaken to see how well libraries were handling GIS and digital data and to provide a benchmark for future studies. Most respondents were from American academic libraries, and of the total responding, only 46 percent held digital data. The most frequently cited reason for the absence of digital data was the lack of funds. For additional information on this survey see the archives of Maps-L and the reports published in the journals of map librarianship.

Four initiatives currently underway at the Library of Congress, Geography and Map Division, were discussed by Ralph Ehrenberg, Division Chief. They are:

1) Establish a GIS reference capability through the creation of a GIS specialist position and the acquisition of GIS software and supporting hardware. This will allow the Division to create maps on demand for the U. S. Congress.

2) Use GIS technology to create graphic indexes for the over two million sheets in the Division's map series collection that lack sheet level control, and integrate the graphic and bibliographic control of the collections.

3) Assist in establishing and distributing standards for digital data and metadata by participating in the work of the federal interagency working group charged to deal with these data.

4) Establish a Center for GIS and move the Division from a paper to an electronic environment in its service to users beyond its Congressional constituency.

CCISA coordinator, Christopher Baruth, noted the associations and representatives currently participating in the CCISA. As a non-organization, and therefore, not funded, the CCISA must depend on its constituent groups for future direction. Recent initiatives included the GIS in Libraries Survey and the planning for this conference.

Larry Carver discussed the

goals of the "ARL Geographic Literacy Project," a joint initiative of the Association of Research Libraries (ARL) and the Environmental Systems Research Institute (ESRI), which is designed to educate and equip libraries in the provision of spatially referenced data in all formats. Sixty-seven American libraries were accepted in the first two phases of the program; negotiations for the third phase in Canada are underway. Participating libraries must own the hardware needed to support data sets from companies such as ESRI, GDT, WESSEX, DEC, and National Decision Systems. [MS]

After the lunch break, Dr. Deanna Marcum chaired the Keynote Speakers session. The first speaker was David Beddoe, Regional Manager, Washington Office, ESRI, Inc., who spoke on "Georeferencing and Mapping of Non-cartographic Information." Beddoe's topic was the implications of using GIS on data which formerly would not have been considered cartographic. Converging technologies, the combination of network computing and GIS, open new vistas and extend what information can be considered geographic. He emphasized that GIS is very multimedia now—data can be conventional maps, images or georeferenced data sets. Beddoe estimated that the U.S. federal government has approximately 12,000 databases. Forces influencing further GIS development are: privacy, free public access, cost recovery, copyright and commercial use. Marketing is an exciting growth area for GIS, as businesses use the technology to make better decisions and track user needs. Beddoe predicted that the map will become the index and GIS the front end to locating and using all spatial data. GIS users will geographically assemble data from all sources. His vision is that GIS belongs in every library, and eventually preschoolers will be accessing geographical information.

His talk was followed by "Paper Maps in an Electronic World" by Barbara Fine, President, The Map Store, Inc., Washington, DC. Fine spoke as the representative of international map vendors and addressed the future of the paper map. Basically, she felt the paper product will disappear by the beginning of the 21st century. Computer games have now replaced commercial maps as learning tools. Quality and resolution are not yet the same but will be soon. In the past five years, every commercial producer of road maps has gone for the ease, speed and economy of electronically generated versions. Ten years ago, the "clear type" line of products was dominant for business and reference use; today most lines have been discontinued and made obsolete by the microcomputer. Fine concluded that the commercial map business is in decline, and that many vendors are becoming antiquarian map dealers instead.

The third keynote address was on "Geographic Information in the Research Library of the 21st Century" by Larry Carver, Map and Imagery Laboratory, University of California, Santa Barbara. Carver called upon experiences in forming corporate partnerships to develop the Map and Imagery Laboratory, in order to formulate his vision of the role of GIS in the research library of the future. GIS hold the "seeds for the electronic library of the future." He predicted that within 10 years the speed of development in GIS will be vastly faster than in other technologies, and the present bottlenecks on the "national electronic information highway" to dense and huge datasets will be removed. Also in 10 years, data compression and exchange will be vastly improved by fibre optic distribution cables. Libraries must redefine their services to accommodate these developments. There will be no hours of service, as information will always be available. The information specialist will require new kinds of expertise, and teams will be necessary to provide an interface for users of digital data. Internet is at present very ad hoc; libraries can provide better defined access and standards. Permanent access is needed but not necessarily ownership, and libraries should take responsibility for unique data rather than duplicating holdings. Libraries fit into the "big business" of information delivery in terms of consistency and standards, and responsibility for information heritage. Research libraries must consider cost recovery as a method of providing service to non-primary clients. Adaptability is not prevalent in this community, but vision is essential now for survival. Carver advocates that we help each other, pool resources, and identify special collections for preservation and cost sharing. In the future it will not matter where data resides, and we must work with systems designers to develop flexible systems locally while also taking advantage of distant resources. Map librarians must create a technical support group to evaluate, test, produce and teach, but from the information and library perspective rather than from that of the vendor.

The last keynote was by Dr. Ron Abler, Executive Director, Association of American Geographers, who spoke on the "Essential Skills for GIS Competency in the Year 2000." Abler talked about GIS curriculum necessary to prepare students for entry into a $15 million rapid growth industry. His research indicates that emphasis should be on geography and general attributes. Most current curricula offer a single GIS course, one per year, with no prerequisites, emphasis on software training and digitizing. As re-

cently as 5 years ago, there were no journals and no courses. Abler expects gradual abandonment of the teaching of specific software, with curricula focus changing to manipulation, analysis, decision making and other managerial emphases. There will be more education, less training, more emphasis on analytical uses, map design, forecasting skills and ethical issues. Abler described this as GI "Science" rather than "Systems." He noted that training in network navigation will be essential for GIS in 10 years. [CMo]

On Tuesday morning, October 19th, the first session was chaired by Ralph Ehrenberg on "The Federal Geographic Data Committee and the Federal Depository Program: Prospects for the Map Library of the Future." The first speaker was Michael Domaratz, Executive Secretary, Federal Geographic Data Committee (FGDC), USGS, who opened this session by giving a review and status report of the activities of FGDC, such as establishing a national spatial data infrastructure. A copy of the FGDC newsletter issue 2, Summer 1993, was distributed at the conference, and it includes an outline of these activities. FGDC newsletters are available by email request to gdc@usgs.gov.

He was followed by Elizabeth Mangan, Head, Data Preparation and Files Maintenance Unit, Geography and Map Division, Library of Congress, who is on the FGDC Standards Working Group for developing the metadata standards. She described the work of the committee, such as the distribution to various librarians of the contents standards from which they received two feet thick worth of pages of comments. She felt that the description should be independent of the form or media. She noted that there were at least ten issues unresolved. The FGDC newsletter issue 2, Summer 1993 also provides more information about the Spatial Metadata Standard.

The next speaker, Sheila McGarr, Chief, Depository Program, Government Printing Office, addressed the GPO's role in the future with respect to map deposits and the difficult choices that have to be made in times of downsizing and economic constraints. There are 53 full deposit libraries in the U.S. and hundreds of partial depositories. All must make the deposit collection publicly available and provide user assistance; the program is based on the principle that the public has a right to information which the government has collected. McGarr indicated that GPO is a distributor rather than a publisher, and has no influence over format. At present, 60% of the information they distribute is microfiche and 1% is digital. CD ROM is becoming the medium of choice for spatial data. The system configuration being recommended for USGS data is: 486 PC, 4mb RAM, GIS software, plotter. Libraries may only be able to select the "Digital Ortho Photo Quad" for their state. Reinventing Support Services #2 recommends that GPO be an executive agency. GSA would then handle printing and the Superintendent of Documents would go to the Library of Congress. With this situation, it was difficult to tell what GPO's role would be.

Larry Carbaugh, Chief of Special Information Products, Data User Services Division, Bureau of the Census, followed up on Sheila's theme about the kinds of decisions and choices that must be made and future requirements for census data products. He emphasized that they need input from users. He pointed out that they had produced 10,000 block level maps in 1980 and none in 1990 as they developed digital files. All maps are now electronic and plotted on demand. There are now over 150 commercial softwares available to access TIGER files. Carbaugh speculated that libraries will have to charge the user for map production and data analysis. A 486 is not fast enough; there is 100mb of data for Los Angeles county alone. The Bureau of Census will produce block face statistics in CD ROM format rather than microfiche.

Lastly, Millington Lockwood, Deputy Director, Joint NOAA/USGS, Office for Mapping Research, outlined the work being done at NOAA, and he addressed some concerns about digital data distribution. He commented that four or five agencies produce maps showing the land/water boundary with the oceans, and that the shoreline is "rarely coincident" on USGS and NOS charts. They are trying to coordinate with USGS to eliminate this problem. He predicted that in less than ten years there will be no paper nautical charts! The Joint Office goal is a multipurpose GIS which supports many other applications, e.g. data visualization. Lockwood recommended Surfer software from Golden as useful for entry-level GIS, and commented that issues of data documentation were becoming more important than the data itself. CD ROM is the best distribution option at present, but the eventual goal is on-line real time update. Paper indexes to hydrographic charts are also gone, to be replaced by a prototype electronic bulletin board. Libraries should prepare to print on demand, as end users will still request paper copy. In principle, NOAA will maintain everything they produce, but how archival material will be treated in digital format is still unknown. [TB,AH,CMo]

After lunch there was a two hour block set aside for "Demonstrations of U.S. Federal Geo-

graphic Information Systems Applications." In one of the wrap-up sessions of the conference it was said that, "GIS is too important a topic to be left in the hands of the GIS industry." No more will it be, to judge by the informative GIS demonstrations for the map information community. Participating agencies included the Bureau of the Census, Department of Defense, Environmental Protection Agency and the Soil Conservation Service. We saw the capabilities of various systems including Grass, Intergraph, Arc Info and a related product, ArcView 1.

The most compelling demonstration was undoubtedly that of EPA, in the cause of environmental equity and/or justice. A population and characterization tool has been developed for the use of various EPA agencies. The application sifts through EPA data sets and census information, to estimate and characterize populations in circular areas around locations such as hazardous waste sites, toxic release facilities and monitoring sites. Information can be viewed using Arc View or other tools, such as E Map. We looked at a minority neighbourhood (over 85% Afro-American)) in Baltimore, Maryland, and what we saw was not healthy. In addition to environmental hazards, there was only one hospital in the area, and very few schools. We were able to find the congressional district lines and identify the congressman. We learned a lot about this neighbourhood in a short amount of time. It is clear that GIS technology is an incredibly powerful tool for assessing environmental quality.

The U.S. Army Corps of Engineers, in conjunction with its Construction Research Laboratory and the Cold Regions Research and Engineering Laboratory (CRREL), demonstrated a decision support system prototype for flood prediction and assessment. We looked at recent data from the Mississippi watershed. Another prototype application was a global commons decision support system for sensitive area route impacts. This particular study evaluated the environmental risks associated with different standard shipping routes, to transport a cargo of chemical weapons placed in West Germany during the Cold War. Proposed destination, a "safe" incinerator site on an island in the Pacific.

Resources Automated Management System (RAMS) currently maintains in its GIS approximately fifty data layers for the Patuxent River Naval Air Station in Maryland and the Chesapeake Bay region. It supports users with responsibilities for environmental protection, natural and cultural resources preservation, security, emergency response, disaster preparedness, range and aviation safety, and facilities management. Edward Air Force Base demonstrated a siting system for the base, which also includes environmental layers.

We finished off with the Mill Creek Project, Walla Walla District, Washington, the first water resources project in the U.S. Army Corps of Engineers to fully use a GIS. A complete information system has been constructed for Mill Creek, which can be used at different scales and in different combinations for synthesis, analysis, display and preservation by all agencies within the district. Data has been used, for example, by the Hydrology Branch, Real Estate Division, as well as by members of the public like the Camp Fire Girls.

If these demonstrations are typical of what is going on out in the "real" world, then GIS is going public, and quickly at that. The map information community is facing a real challenge in disseminating this information. I hope that we are in the right place at the right time to make a significant contribution in getting GIS technology to the people, and that things will not be left in the hands of the GIS industry! [CMa]

To conclude the business portion of the conference, Edward Dahl, National Archives of Canada, chaired the "Reports from Discussion Groups and Open Microphone." The first to report was Joan McKean of Education Affairs Division of NOAA who had chaired the group on "Toward Defining Training and Education Strategies for Map Librarians." There were 16 attendees. The areas of concern were: a) access, b) role of librarians, and c) budget considerations. Some of the highlights were: Librarians are the information brokers and advocates for the public interest. Librarians need to illuminate and make careers more relevant; do homework, learn the jargon and concepts, develop a knowledge base, read the literature, take a course. Offer to coordinate a GIS group on campus or in your community schools. Track library schools and get them to update the curriculum. The group summation was that "GIS is too important to society to leave it to the GIS industry."

Melissa Lamont of the University of Connecticut was the discussion leader for "Communicating with Library Directors about GIS, Remote Sensing and the Map Library." Diana Rivera, Michigan State University, reported for the group. There were 19 attendees. She reported five concerns: 1) lack of attention and funding for map collections, 2) downsizing of staff and space problems, 3) explaining GIS to Directors, 4) opposition to GIS in Library, and 5) defining level of library services. Solutions suggested included networking among ourselves, within the library and with academic departments on campus, and with state and local user groups; directors need to know wide use and

applications and how they benefit the library. Improve visibility by using products already in house, such as Streetatlas USA or PCGlobe, in reports, presentations and displays. Report statistics on use of GIS, time may be important as reference questions are more complicated and time consuming. Communicate with the director the level of service you need. Present the library as middle ground between academic needs and information producers, a neutral resource to share; learn politics and cultivate GIS advocates. Communicate with the director regarding level of service to ensure support; specify and be able to explain why equipment is requested/needed, equipment requests should support a specific service. Get outside persons to communicate the value of your collection to your director; impress visiting dignitaries; bring in neutral parties to assess the collection's strengths, worth, direction; use experiences of comparable and respected institutions.

Grace Welch of the University of Ottawa reported on "Toward Defining the Technical Requirements for a Map Library in the Year 2000" at which 12 were in attendance. This group arrived at no definitive answer. Technical changes come so fast that there is a constant need for new equipment which may be out of date in two years. Some libraries in this group did not have any equipment at all, while some were in the ARL GIS Literacy Project, and some were navigating the Internet. The group expected to see a lot fewer paper maps by the year 2001, and map libraries will require electronic equipment which will vary in quantity depending upon the funds available. One conclusion was that access is required to the Internet, or its successor, such as a data network using broadcast technology which requires large storage devices. One workstation is still one person access and can tie up the entire collections; multiple workstations and LANs are required. The CD- ROM is an interim and will disappear. The key to all our futures is metadata and making data easy to find. Improved Gopher systems are needed, as well as output devices, such as color printers and plotters. We will need a user foolproof interface. A basic workstation needs to be defined.

The last discussion group on "Inventories and Services: Looking at the Map Library of the Future" was reported by the discussion leader, Jim Minton, University of Tennessee. This was felt to include collection development and management and could only look ahead a maximum of five years. There should be a well defined mission statement to put in front of your administration which would include the digital aspect. Post your selection policies on the local Gopher. Develop ties with departments, regional and provincial/state agencies. Scan historical collections or provide special access tools for them. Develop policies on access and amount of time that can be spent using equipment. Paper map acquisition will not be a primary concern. The services of reference, teaching, interlibrary loans, on-demand mapping will take more time and more terminals. If there is only one terminal, the whole collection is tied up by one user. Develop training handouts, manuals, and computer tutorials. Use Internet for the transfer of data via ILL. Determine who are your users (primary, secondary and tertiary) and allocate your time carefully.

Following this presentation, Ed moderated a question and answer session. Jim Minton commented on terminology, advocating "cartographic information center" versus "map library." Will there be map libraries in the future? User friendly interfaces make for a lot of choices. New functions as a result of new technology, what is a librarian? Johnnie Sutherland noted that there is an intensive use of time and map files to know what is out there. How much time should be spent training people to use the equipment or should you do it for them? Colleen Beard felt that the main function should be to acquire and provide access to information. Can we develop recommendations or specifications for workstations? Reference was made to an "Administrative Notes" which recommended a 486, 8-16 meg RAM, 100-200 meg hd. The library of the future: archival collections, search center, service center for those who need products. A mission statement is required which gives the concept of operations and is being forced by government agencies and map stores. Do we categorize users by the amount of time spent on them? Someone noted that 1/3 of users are outside agencies, such as environmental consulting firms, who are money making, and we should be charging them. It was mentioned that for data outside the U.S. there are heavy licensing fees; such costs will require fees. Some problems with reliable data were noted. As a model for the future, it was noted that for a library that is a patent depository, when the library administration advertised this fact, they were overrun by users. People come to the library as a neutral locale, but it will have to recover costs. Models are needed for charges for time, services. Charging for services means limiting services to the groups that can pay. If you find yourself spending 10 hours per week working for some company, you will develop a fee for service very fast. There was discussion of tools or analysis; teaching how to use or finding the data. It was felt that all special

format libraries will face this soon. What are cartographic specialists to do? Redefine the profession? Create a new profession, philosophy and policies. Pat McGlamery noted that map collections are typically small units of much larger organizations, and we compete very poorly. For these issues we need the sanction of some national organizations to provide funds to study issues. For the first time, at this conference we had a variety of folk discussing in collegial fashion. We have been too splintered in individual professional organizations. Problems have been given form for the first time here. Someone noted that librarians would become vendors and creators.

The discussions were interrupted for a short while by a fire alarm requiring leaving the building from our sixth floor location (a sprinkler head broke in the parking garage). At the end of the discussions, Chris Baruth thanked the other members of the steering committee (Gary Fitzpatrick, Patrick McGlamery, Johnnie Sutherland, and Alberta Wood), and noted that the level of discussion all along has brought out the best in all of us. The steering committee met over lunch, and we hope to see a publication or proceedings come out of this meeting, in addition to this report. There was discussion regarding another conference with the suggestions of having one in 2, 3 or 4 years time and perhaps on another theme. [AH,CMo]

The conference ended with a reception in the Montpelier Room sponsored by the Geography and Map Division of the Library of Congress. It had been an interesting and invigorating meeting! ❑

EVENTS CALENDAR 1994-95

1994

February 18 - 19: ***International Map Trade Association European Conference and Trade Show.*** Bournemouth, England. Contact: Mike Cranidge, 5 Spinacre, Berton Lane, Barton on Sea, Hampshire BH25 7DF England.

March 29 - April 2: ***90th Annual Meeting of the Association of American Geographers***. San Francisco, Ca. Contact: Association of American Geographers, 1710 16th Street NW, Washington D.C. 20009-3198, (202) 234-1450.

March 31 - April 1: ***7th Annual GIS Conference (TSU/GIS '94)***. Towson State University, Towson, Maryland. Contact: John M. Morgan, Geography and Environmental Planning, Towson State University, Towson, MD 21204-7097; (410) 830-2964.

June 5-8: ***GIS in Business '94 Conference & Exposition***. San Francisco Hilton and Towers, San Francisco, California. Contact: GIS World (303) 223-4848.

August - 7-8: ***Symposium on Cartographic Design and Research***. Ottawa, Canada. Sponsored by the Canadian Institute of Geomatics. Contact Clifford Wood, Dept. of Geography, Memorial University, St. John's, Newfoundland A1B 3X9 Canada (709) 737-8988.

August 7- 11: ***URISA 94***. Milwaukee, Wisconsin. 32nd Annual conference of the Urban and Regional Information Systems Association. Contact: URISA Secretariat (202) 289-1685.

October 22 - 27: ***GIS/LIS'94***. Phoenix, AZ. Contact GIS/LIS'94, 5410 Grovemor Lane, Suite 100, Bethesda, MD 20814, (301) 493-0200.

1995

September 3-9: ***International Cartographic Association Conference*** - Barcelona, Spain. See call for papers on facing page. ❑

August 11-13

XIV Annual Meeting

North American Cartographic Information Society

Ottawa, Canada

The 1994 NACIS meeting will be held in conjunction with the Annual meeting of the Canadian Cartographic Association

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