



S Y S T E M S   A N D   P R O C E D U R E S   E X C H A N G E   C E N T E R

# Flyer 219

## Geographic Information Systems Transforming Libraries 2: February 1997

### Introduction

THIS SECOND issue of the new publication series, *Transforming Libraries*, launched by the OMS Systems and Procedures Exchange Center, focuses on Geographic Information Systems (GIS), one of the most exciting new technologies being used by libraries today in their information services programs.

Geographic Information Systems (GIS) represent, for many, an entirely new way of looking at information. Such systems integrate computer hardware, software, data, and the human mind to bring new perspectives to creative problem solving. To solve problems using GIS, you must have "geo-referenced" or spatial data that can be layered with other data. To invoke an example from one of the reports in this issue: if you have, for the same urban region, the locations of public health clinics, city bus lines, and concentrations of below poverty line residents, GIS will help you draw inferences about the availability of public health care in the region by combining and layering the data on a map. You might use the resulting information to petition the city to open more clinics or to support your request that the bus routing be changed. The power of GIS is in adding a graphic, spatial dimension to problem solving. On the simplest level, it can make an undergraduate's term paper more persuasive. On a larger scale, it has been used to make key decisions in environmental planning, as well as in designing multi-million dollar national marketing campaigns.

Though GIS has been around for a while, it was not until the 1990s that it became a "popular" technology. Until

then, it was largely the province of professional geographers, who used GIS in their research and instruction or in their work as commercial analysts and mapmakers. Two events changed that for libraries. First was the decision of the U.S. Government Printing Office to distribute most data in machine readable form; with the distribution of 1990 census data on CD-ROMs, libraries were forced to consider computerized ways of dealing with digital data. The second was the emergence of relatively inexpensive GIS software; this development led to the programs such as the ARL GIS Literacy Project, which, through a partnership with ESRI and other public and private partners, introduced GIS technology into many ARL libraries.

One theme emerged in conversations with the information professionals who contributed to this issue: GIS is but a hook on which to hang a very large garment. GIS itself is nothing (except to the GIS software technician, perhaps) without the data that bring it to life. Insufficient or inaccurate data inevitably make for poor quality information, despite the most sophisticated GIS. GIS requires "spatial literacy," a term that you are likely to hear more and more in coming years; this does not mean full acquaintance with the science of geography, but it does mean an ability to interpret problems and their solutions in spatial terms. Since data has, for most of us, usually been presented in tabular form, spatial thinking takes a bit of time to master.



### **Critical Choices: Key Questions for Planners**

Several questions are put forth in this issue for those planning GIS services.

- What Kind of Service Should We Provide?
- How Will Collections Be Built?
- Who Will Staff the GIS-based Services?
- How Will We Learn-and Educate Others-About GIS?
- With Whom Will We Collaborate?
- How and Where Will We Store Data?
- What Will It Cost?

### **Reports From the Field**

Twenty-six information professional were interviewed for this issue, mostly during January 1997.

- Pennsylvania State University
- University of Connecticut - MAGIC
- Harvard College
- Cornell University
- University of Virginia
- University of Georgia
- University of Minnesota
- University of Washington
- University of California - Berkeley
- North Carolina State University
- McMaster University - ECOWISE
- University of Toronto - TRAIL

- University of Waterloo
- Montana State Library
- New York State Library
- St. Louis Public Library
- University of Southern California
- University of California - San Diego
- Environmental Systems Research Institute
- University of California - Santa Barbara

Though they are using GIS, libraries rarely focus on the technology itself. Sometimes there is a brief infatuation with the technology, but soon a realization sets in: though the technology is new, traditional skills of librarianship are required to use it effectively. User needs must be evaluated; data must be selected, cataloged and prepared for users; public services must be designed, offered, and managed.

*The SPEC Kit was written by George Soete, Transforming Libraries Editor, with editorial advice from Prudence Adler, ARL Assistant Executive Director, Federal Relations and Information Policy.*

*The electronic component of this issue can be found at*  
<<http://arl.cni.org/transform/gis/index.html>>