INTRODUCTION

The Illinois Department of Energy and Natural Resources (ENR) and its divisions, the Illinois State Geological Survey, Illinois Natural History Survey, Illinois State Water Survey, Hazardous Waste Research and Information Center, Office of Research and Planning, and Illinois State Museum, have been actively involved in the use and application of GIS technology for over ten years. A significant result has been the development of one of the most comprehensive spatial digital databases, at the state level, anywhere in the country. In order to make this information more accessible, many of ENR’s statewide data sets were published on CD-ROM in April 1994.

This publication is the first of its kind in the country from a state perspective. It signifies technological advancement, but it also reflects the evolution of an institutional attitude toward data, specifically that data of this type are a resource to be shared and utilized by citizens and groups with an interest and concern for Illinois, its people, and its resources. This publication is intended to make this valuable and dynamic resource more accessible and available to other state agencies, libraries, schools, public interest groups, and the private sector. An anticipated effect will be to increase knowledge and consideration of geography relative to the state’s people, resources, and related issues. Virtually all aspects of the built and natural environments in which we live have spatial components. The data contained on this CD-ROM provide a basis for integrating these spatial components into research, education, and management.

DEVELOPMENT

Data sets contained on the CD-ROM were primarily constructed on a project by project basis in response to programmatic needs of the divisions of ENR. Others—particularly infrastructure, hydrography and census

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tracts—were derived from U.S. Geological Survey or U.S. Bureau of the Census data files. While some modifications were made specifically for this publication, none of the data were produced simply for inclusion on the CD-ROM. Rather, they have been used extensively for more than ten years by all of ENR’s divisions for basic research and in response to project needs. The data contained on the CD-ROM represent thousands of hours of time and effort when all aspects of data collection, validation, and translation are considered. Most of the information is at a scale of 1:100,000 although scale varies depending on the map layer. Data at a scale of 1:100,000 are suitable for regional and local, but not site specific analysis and use. National map accuracy standards equate to a positional error of 167 feet at this scale.

CONTENTS

The CD-ROM contains the following map layers:

- County
- Archaeologic probability
- Airports
- Census tracts
- Flood zones
- Hydrography
- Incorporated areas
- Natural areas inventory
- Nature preserves
- Railroads
- Roads
- Utilities
- Wells

*Statewide*
- County boundaries*
- Interstate, State, US Highways

*House Districts*

*Landfills*

*Public Water Supply Intakes*

*Quadrangle boundaries*
- 7.5 x 7.5 minute series
- 30 minute x 60 minute series
- 1 degree x 2 degree series

* These data are duplicated by county
Data sets of particular value and interest, all of which were developed entirely by one of ENR's divisions, are discussed in more detail below.

The archaeologic probability map (1:250,000) was developed by the Illinois State Museum. It depicts areas believed to possess a high archaeologic potential and is intended for coarse regional analysis. It has assisted agencies in responding to requirements of the Illinois State Agency Historic Preservation Act (P.A. 86-707) which mandates state government to preserve, restore, and maintain the historic resources of the state.

The wells coverage, developed and continuously updated by the Illinois State Geological Survey, is the most comprehensive database of its kind in the country. At the time of publication, it contained 335,695 individual well and boring locations throughout the state, their well type, and a unique identification number used to relate back to over sixty fields of attribute data recorded for each location. The accuracy of location for most features is considered to be +/- 100 feet.

The Illinois Natural History Survey created the map layer of Illinois Natural Areas (1:24,000) and Illinois Nature Preserves (1:24,000) as identified by the Illinois Department of Conservation. These areas represent some of the finest of Illinois' natural resources and include areas of unique biologic, geologic or natural value.

The Illinois State Water Survey developed the unincorporated flood zone boundaries (1:12,000, nominal) data set for all of Illinois. Federal Insurance Rate Maps (FIRM) and Federal Emergency Management Agency (FEMA) maps were the primary source for this map layer. The solid waste landfill sites active in 1993 represent a subset of a much larger database, the Inventory of Landbased Disposal Sites, maintained by the Hazardous Waste Research and Information Center.

The 1992 Census data provide a comprehensive assessment of basic demography and ethnicity at the census tract level for the entire state. The Office of Research and Planning also contributed the legislative boundaries for State Senate and House districts as of 1992.

The roads, railroads, hydrography, and utilities coverages were derived from USGS Digital Line Graph files. Significant value was added by recoding the attribute values to facilitate use. The roads and railroads coverages have both been updated. All major highways, as of 1993, were added to the roads coverage while railroads were updated as of 1991 and

* These data are duplicated by county
include active/abandoned status and ownership. Documentation, based on the Federal Geographic Data Committee Spatial Metadata Standard (draft of January 25, 1994) is included on the CD-ROM for each layer.

LICENSING AND LIABILITY

The data, with the exception of the wells coverage, are not explicitly copyrighted. However, the licensing agreement request states that data are not to be redistributed without prior knowledge of ENR. Liability concerns are addressed in the licensing agreement which states, in part, "the burden for determining fitness for use lies entirely with the user."

FORMAT AND AVAILABILITY

Data included on the CD-ROM were produced using ARC/INFO from ESRI, Inc., Redlands, California, and are all in ARC/INFO format. This does not indicate an endorsement of this product but simply reflects the primary software currently used by ENR and its divisions. ARC/INFO, ArcView, or ArcView2 software on a UNIX workstation with a CD-ROM drive are required to access the map information. The CD-ROM also works on Macintosh computers running ArcView2. While this does not address the needs of all potential users, it does provide a "plug-and-play" product that can be used immediately, assuming proper hardware and software environments. A copy of the CD-ROM is available, free of charge, to government agencies, schools, and libraries, and at a charge of $100 to the private sector and private individuals.

ENR is dedicated to the maintenance and improvement of these data and welcomes any comments about their content, format, or utility. People interested in additional information should contact Sheryl Oliver, GIS Manager, Office of Research and Planning, 325 West Adams Street, Springfield, Illinois 62704 (217) 785-7575.