

URBANBASE: KEY TO URBAN FORESTRY INFORMATION

by Arthur W. Magill

Abstract: To accomplish effective communication and technology transfer in urban forestry planning and management, an urban forestry data base needs to be developed. URBANBASE is a proposed information retrieval and exchange system, computerized and interdisciplinary. If operational, URBANBASE would provide relevant references and digests of documents, in simple language to urban forestry practitioners, consultants, city and other local governments. It would service cities throughout the United States and parts of Canada, providing technical guidance and solutions to everyday problems in urban forestry.

The interdisciplinary composition of urban forestry poses for practitioners a complex communication and technology transfer problem. Each discipline uses specialized literature sources and technical terminology. Yet, practitioners need rapid and easy access to current and new information to answer day-to-day management questions and to guide the establishment and maintenance of urban forests.

Existing technical data bases (bibliographic collections) are oriented, by subject, to the needs of specific professions and few of them include "gray literature" — training materials, environmental analyses and impact statements, new legislation, speeches, and policy guidelines or procedural papers. For urban forestry practitioners to receive the kind of technical information they need, therefore, an urban forestry data base needs to be developed.

URBANBASE, as proposed, is an information retrieval and exchange system, computerized and interdisciplinary, for urban forestry practitioners. Conceived in 1979 at the Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture, the system was designed to provide relevant and useful references and documents and to omit complex methodological discussions and all scientific jargon, unless clearly defined. The system would also allow digests of documents, written in simple language, to be retrieved by using a series of keywords (language cues) identified and

described by urban forestry practitioners — arborists, horticulturists, wildlife biologists, and foresters. A sample of topical categories and keywords that may be used to identify documents already digested and for URBANBASE use are listed (Figure 1). URBANBASE would not focus on any one region, but would serve cities throughout the United States and parts of Canada. Its services could be provided to cities and towns from regional centers, each of which might offer expanded information bases specific to the geographical region served.

Unfortunately, URBANBASE is not operational because funds have not been available to support its development and maintenance. If financed, however, URBANBASE could be made operational within 18 to 24 months. The necessary technical mechanisms have already been developed for FIREBASE, a system concerned with wildland fire management, and for PLANBASE, a similar system being prepared to serve wildland planning needs. Building on the strengths and correcting for the weaknesses of these two systems, URBANBASE would be of great value to practitioners as a tool for urban forestry planning and management.

What Can URBANBASE Do?

URBANBASE is expected to provide city and other local governments as well as urban forestry consultants with a common set of technical references and gray literature that taps the many disciplines contributing to urban forestry. For each selected reference, URBANBASE would provide a *comprehensive technical digest* that could be used to guide management actions. Although "digests" go beyond the more commonly used "abstracts" and provide the core elements of each document, the complete document could be requested, when necessary. Some sample document digests are arranged by keywords and keyword categories (Figure 2).

URBANBASE would make forestry technology available in these forms: (a) As *summary printouts* for selected topics delivered by portable terminals that use telephone access to a central computer; (B) as *hardcopy* of the URBANBASE file issued periodically for desk reference; and, (c) as *bimonthly listings* of significant new literature addressing urban forestry needs and offering the option of obtaining computer-accessible digests or loan of entire works through university, city, or county libraries.

Making It Operational

URBANBASE would serve cities throughout the country, and its development and administration, therefore, would exceed the authority of State or local organizations. It could be operated successfully by a Federal agency, such as the Forest Service. Overall development responsibility, contractor supervision, interagency and user coordination, user training, and operation and maintenance could be assigned to a program manager.

Because urban forestry is a concern at National, State, and local levels, development of URBANBASE needs to be guided by the people from these levels who will ultimately use it. Two committees are proposed to serve this need: one is strictly advisory, and the other is a working committee. The *URBANBASE Policy Committee* would advise on the program's overall budget and policy matters and have, as its special concern, to ensure that URBANBASE addresses and adequately serves its multiple audiences. The Committee would include administrators representing Federal and State resource agencies, universities, urban planning organizations, the National Association of State Foresters, the International Society of Arboriculture, the Urban Forestry Working Group of the Society of American Foresters, and similar organizations.

To develop a computerized literature reference system requires that the potential users, their needs, and the language cues which are meaningful to them are identified. In urban forestry, the users are assumed to be public and private ar-

Figure 1. A Sample of URBANBASE Categories and Keywords

ARBORICULTURE/HORTICULTURE	Landscape architecture	Swimming
Cabling	Scenic analysis	Other
Fertilization	Urban design	SILVICULTURE
Irrigation systems	Urban-wildland interface	Inventories
Plant selection	Other	Plantings
Pruning	PLANNING/ECONOMICS/REGULATION	Regeneration
Thinning	Employment influences	Seeding
Other	Land use controls	Stand composition
ECOLOGICAL ASPECTS	Open space	Stand improvement
Ecotypes	Ordinances	Other
Geosere	Property values	SITE FACTORS AND HYDROLOGY
Plant communities	Urban Planning	Climatology/meteorology
Population dynamics	Other	Soils
Succession	PROTECTION	Soil compaction
Wildling	Chemical injuries	Waste water and sludge
Other	Diseases	Water quality
ENERGY AND UTILIZATION	Fire	Watershed management
Energy conservation	Hazard Control	Other
Energy plantations	Insects	SOCIOLOGY/PSYCHOLOGY
Forest products	Pollutants	Human behavior
Fuels	Other	Physical and mental health
Marketing	RECREATION	Public involvement
Waste wood	Demand	Social conflict
Other	Environmental education	Social well-being
LANDSCAPE MANAGEMENT	Fishing	Vandalism
Environmental design	Leisure	Other
Forest amenities	Park management	

borists, foresters, horticulturists, landscape architects, nurserymen, park managers, planners, and professionals with extension responsibilities from urbanized areas across the Nation. On the basis of this assumption, an *URBANBASE Technical Steering Committee* should be formed which would include knowledgeable urban foresters representing a broad cross section of users and organizations. This working committee would develop lists of information needs, define source serials normally used, and suggest keywords that users find meaningful for searching literature citations. The Committee would meet at regular intervals or times of significant program achievement to provide continuing review and technical guidance. The *URBANBASE* program manager might serve as the Executive Secretary for the Policy and Technical Steering Committees.

The first task in developing *URBANBASE* would be to prepare a *keyword list* and coordinate it with a standard library referencing format as a founda-

tion for digest searches. Because of the multiple disciplines involved in urban forestry and the technical language of each, the keyword search format would, most likely, be quite complex and extensive. An important purpose of the program, however, is to avoid complex scientific jargon. It is expected that some jargon will be necessary, but it must be clearly defined. An *urban forestry glossary*, therefore, will be an essential product of the research. As the keyword list is being completed, the program manager should work with a university or consultant contractor to develop a glossary of technical terms. Next, the contractor should begin developing an *URBANBASE reference file* to include document identification, document screening and selection, and citation and digest preparation. When sufficient documents have been processed to provide an adequate sample, first the Technical Steering Committee, and then a cross-section of users should evaluate system search procedures and

Figure 2. *URBANBASE* Digest Prototypes

PROTECTION

DISEASE

UB-0003

Dutch Elm Disease and Its Control in Virginia
R.J. Stipes (Virginia Polytechnic Institute and State University, Cooperative Extension Service, Blacksburg, VA), J.A. Weidhaas, Jr.

1Virginia Polytechnic Institute and State University, Cooperative Extension Service. Plant Disease Control Notes. Control Series 103 (Revised), Jan. 1971. 6 p., illus.

Dutch elm disease destroys many valuable trees in Virginia each year. All native species of elms which include the American (*Ulmus americana*), winged (*Ulmus alata*), and slippery (*Ulmus fulva*) elms are susceptible to Dutch elm disease. The American species is the most extensively devastated. Disease incidence can be reduced to a low level through community-wide preventative control measures.

FIRE

UB-0004

The Urban/Wildland Fire Interface.
Butler, C.P. (Stanford Research Institute, Menlo Park, CA).
Combustion Institute, Spokane, WA.
May 1974. 18 p., 19 ref.

An urban/wildland fire interface exists between the forest and structures built near the forest. Fires originating in the forest can cross this interface and burn dwellings. Much study has been done on both wildland fire and structural fire. Little

study, however, has been done on fires in the urban/wildland interface. The current popularity of living in natural surroundings makes the urban/wildland interface even more important to fire suppression authorities. Persons living in areas adjacent to wildlands should contact their local fire department to learn how to make their homes safe from fire.

ECOLOGICAL ASPECTS

WILDLIFE

UB-0007

Wildlife Management with Trees and Shrubs.
Kennedy, G. (Div. of Fish & Wildlife, Indiana Dept. of Natural Resources, Indianapolis, IN).
Indiana Dept. of Natural Resources, Management Series No. 5, 12 p., illus.
1976.

Many wildlife species are dependent on trees and shrubs in Indiana. Although it is generally believed that the largest number and greatest variety of wildlife species can be maintained by using exotic shrubs and trees, the best course is to use both exotic and natives. Planting designs and management methods for new and established stands are discussed that benefit wildlife while providing for conservation, recreation, and income. Situations discussed include: (1) fence row and field edge plantings, (2) Christmas tree plantations, (3) woods edge management, and (4) odd areas. Also, a procedure is described for planting seedlings, and a tree planting guide gives soil, drainage, light, and spacing requirements for numerous tree and shrub species.

digests. Procedures and digests should be revised, as necessary, to correct any difficulties observed during the pretest. Development may be expected to be complete in about 18 months when user training could be started and some user services begun. With sufficient funding, the entire system could be made operational in about 24 months.

What Will It Cost?

Experiences with building FIREBASE, PLANBASE, and other specialized data bases suggest that the development cost of URBANBASE is expected to exceed \$300,000, depending upon the ultimate size of the data base and the amount of information provided. Costs could be reduced substantially if only bibliographic citations and keywords were provided. Experiences have shown, however, that practitioners do not want to obtain original documents and spend valuable time searching for information. They prefer to receive information digests that pinpoint answers to their questions. Costs for maintaining URBANBASE are estimated to be in the range of \$80,000 to \$100,000 per year. The costs depend upon the system's interdisciplinary structure, the annual volume of material added to and deleted from the data base, and whether the system is maintained by in-service personnel or outside contractors.

Experiences with FIREBASE and WESTFORNET — a library-based technical information network — provide insight into the expected costs to users. During its operational test, FIREBASE was provided free to users. People were allowed to use the system, without consideration of costs, to learn whether it satisfied

their needs. Also, the operators of FIREBASE needed to try out the system to estimate average typical costs. Later, costs were expected to be defrayed by assessment or direct charges. Another approach, yet to be investigated but with precedent from other data bases, would be to offer URBANBASE to a commercial vendor who would charge for its use. The vendor would then pay a royalty to the agency responsible for administering the system to defray the costs of maintaining the data base. If costs of URBANBASE are similar to those of WESTFORNET, charges to users for the data base might approximate \$5 to \$6 per search, or about 25 to 30 cents for each relevant citation and digest retrieved.

Conclusions

Essentially a computerized information system designed for the user by the user, URBANBASE, as proposed, could be an invaluable tool for practitioners in urban forestry planning and management. It would provide current and new information for technical guidance and solutions to day-by-day problems in simple language digests of documents. It would furnish city and other local governments, consultants, and practitioners with a common set of technical references from the many disciplines related to urban forestry. URBANBASE is the key that can unlock a multitude of resources and make them available at a cost outweighed by the advantages of the system.

*Principal Resource Analyst
Pacific SW Forest & Range Exp. Sta.
Forest Service, USDA
Berkeley, California*