

THE URBAN MANAGEMENT DATA SYSTEM

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The Urban Management Data System, developed by the Advanced Information Systems Department of Informatics, serves the operating, planning, and reporting needs of today's dynamic urban societies. It consists of custom tailored generalized computer programs supported by specialized procedures for data handling. The System provides ready accessibility to the myriad of facts so important to urban management. An area's facts - describing its real property, its population, its industry, and its resources - must be categorized and summarized frequently and unpredictably. Several versions of the UMDS are now available to do this.

Research sponsored by The RAND Corporation provides some of the theoretical foundation for this urban management work. The study, started by the author in 1958, was completed by Hearle and Mason, and is reported in their Prentice-Hall book, "A Data Processing System For State and Local Governments". Since 1960 we have been engaged in translating this research into practical applications in several cities. It is upon this research and practical experience that the present UMDS is based.

The first version of the UMDS was developed by the author for the City of Los Angeles as a pilot system to test the feasibility of the entire concept. Based on the success of this effort, vastly improved versions were developed. They are now in use as the backbone of continuing demonstration projects in Tulsa, Fort Worth, Denver, Little Rock, and Wichita. The development of a fully operational version of the UMDS was initiated early this year on behalf of the City of Alexandria, Virginia. The Alexandria System will serve the City Manager as a regular and vital part of the operation, management, and planning of the City.

What the UMDS Does

The UMDS is based upon the acquisition of data pertinent to each governmental unit which it serves. The means for the translation of these data into computer language is an integral part of the System. Typically, the data involved pertain to parcels of land, buildings, establishments, and street sections. All data descriptive of these classifications can be accommodated, as well as activity data reflecting events related to the same or other classifications. The UMDS permits each using area to select the exact descriptive and activity data items most useful to it. Experience in this selection process, and in the data acquisition and



organization of the corresponding computer-based file, forms a vital component of the capability to produce meaningful systems for metropolitan use.

The UMDS then uses these data to create and maintain computer-based files of information. Once these files are established, the UMDS enables users to obtain from the files all the information they need for decision and action. After organizing, manipulating, and summarizing this information according to user requirements, the UMDS prints the results in easily read reports precisely in accordance with the current dynamic requirements of its users. Thus, the UMDS provides the means for all operating government units to control operations, carry out surveys, prepare reports and summaries, and perform day-to-day operational functions, at a small fraction of the cost of performing these tasks as individual unrelated jobs.

The UMDS does not require the users to write computer programs to perform these functions. It is completely pre-programmed to use either government- or contractor-operated computing equipment. The UMDS employs three simple forms to replace the hundreds (or perhaps thousands) of computer instructions which were formerly required to carry out a particular analysis and to produce the report. As a result, the UMDS eliminates entirely the time and cost of writing and testing computer programs for this purpose. Only a few minutes are required to fill in the necessary forms, the accuracy of which is automatically checked by the system.

Using the UMDS

Comprehensive land use planning; community renewal; school facilities planning; resource planning for police, fire, and public works departments, and analyses of services provided by health, building, and sanitation departments are representative of the many applications with which the UMDS can assist.

Once data are collected and entered into the UMDS, costly and time consuming surveys and analyses can be dispensed with. The system provides, to the maximum extent possible, for the automatic entry of all changed information into the UMDS as a by-product of existing departmental operations. In addition to the full utilization by each department of its own data base, the system permits a Planning Department to use information collected by and for the Police Department, a Fire Department to have access to Building and Safety data, Police to employ the Assessor's facts, Health to use Sanitation data, and so on. In this way, the time and cost of data collection for specific uses are further substantially reduced.



Although the possible uses of the UMDS are far too many to permit a comprehensive discussion here, some examples will illustrate these uses. The following list suggests some "requests" which might be made of the system. These are "typical" of the many kinds of requests which have been processed by the UMDS. They have produced reports of:

- . All parcel numbers, their area, and zone classification;
- . population by block in various types of dwelling units;
- . all parcels sold in three-year period;
- . number of off-street parking spaces available in commercial areas by zone district, compared with gross floor area;
- . valuation of land and improvements, structural conditions, etc., for all properties located in various proposed freeway routes;
- . all school parcels in prescribed census tracts, giving the area of each parcel and year of building construction;
- . number of dwelling units in prescribed census tracts, listing all parcels receiving building permits;
- . multi-family parcels;
- . all parcels zoned for commercial use, and those parcels actually used in commercial land use zoning;
- . retail and personal service parcels in this census tract;
- . all single family dwellings built in 1957 or later, having a total value of \$20,000 or more;
- . number of families living in sub-standard structures within each urban renewal project area;
- . zoning area by zoning classification and land use;
- . number of structures selected for rehabilitation within each urban renewal project area;
- . proposed alternative crosstown expressway land areas and total assessed values of each;
- . number of industrial firms with five employees or more;
- . number of dwelling units by building condition;
- . amount of floor space utilized, number of employees, and number of off-street parking spaces, for shopping centers and districts;
- . number of dwelling units to be displaced by various renewal actions.



The Future of the UMDS

The UMDS is a major new tool for state and local government. It offers a powerful new way to determine the impact of a wide variety of alternative decisions and to assure that whatever courses of action are finally selected are carried out according to plan.

From a technical standpoint, the computer program, which is the major operating component of the UMDS, is immediately usable - without modification - in a large class of other applications. These applications, involving large files of almost any kind of information, form the basis of an almost unlimited number of computer-based systems for government and business uses.

The computer-based UMDS can be implemented in other urban areas now. It is a tool, not an end in itself. It is, however, an unusually powerful and flexible tool. Just as new uses of the wheel in particular applications remain to be discovered, so increased experience with the UMDS will reveal untold new benefits from uses of this vital tool.

