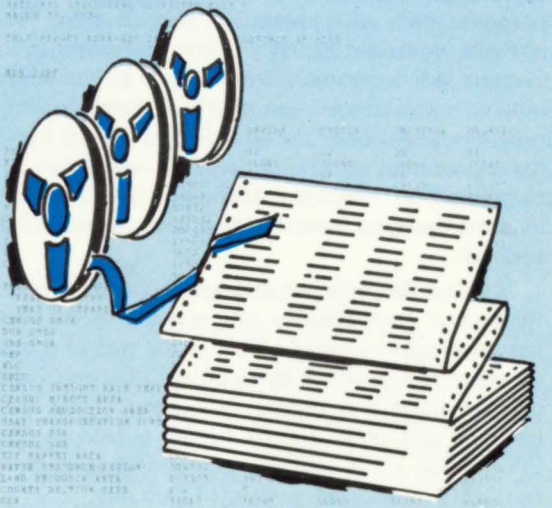
The U. S. DEPARTMENT OF TRANSPORTATION

GEOCODING PROGRAM



PURPOSE, PRODUCTS, AND PROSPECTS

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY
OFFICE OF THE ASSISTANT SECRETARY
FOR POLICY, PLANS AND INTERNATIONAL AFFAIRS
WASHINGTON, D.C. 20590

Geographic encoding systems have evolved through the years from those which simply identify and classify land area to those devised for many diverse statistical purposes. The automation of data processing fostered the design of machine readable coding logic and led to widespread use of geocoding systems. Today machine readable coding logic is the primary objective in the design of any given geographic reference system thus increasing the uses of geocoding to apply to a wider range of information and a broader spectrum of users. Uses in urban planning has promoted the establishment of Geographic Base Files (by the U.S. Bureau of the Census and cooperating local areas) which now exist for almost all major cities in the United States.

However, there exists no standardized national geographic base file. The national geocoding systems existing today were developed for specific purposes and are therefore all different in their structure and capabilities. Systems have been developed for specific purposes such as commodity flow analysis, market analysis, or freight rating. Further, national geocoding systems lack a common denominator as a coding unit, unlike metropolitan geocoding systems which are generally based upon the encoding of a block face. The many national geocoding systems which exist lack compatibility, making it difficult, indeed impossible in some cases, to associate data coded under different systems.

The U.S. Department of Transportation, recognizing the lack of compatibility among many of the systems, has undertaken a major effort in the area of geocoding by creating files which make possible the convertibility of data from one system to another. Thus analysts, planners and policymakers having a need to develop information on a regional or national level have the capability of associating selected data sets.

Research and development by the DOT in the area of geocoding systems has been conducted to fill the void existing in macro systems and to provide users and potential users of geocoded data with the enhanced ability in dealing with the ever increasing amounts of data on the national and regional level. The products resulting from this work are summarized below.

The National Geocoding Conference - Proceedings

The first conference to discuss national geocoding systems was sponsored by DOT in December of 1971 in Washington, D.C. The conference brought together leading individuals from industry, trade associations and government agencies directly involved in the generation, development and use of national geographic codes. The objective of the conference was to give guidance and advice to DOT in its effort to achieve improved and continuing coordination among the many major national geocoding systems. A limited number of copies of the proceedings are available thru: Office of the Assistant Secretary for Policy, Plans and International Affairs, Special Assistant for Information Policy, U.S. Department of Transportation, Trans Point Building, Washington, D.C. 20590.

A Survey of National Geocoding Systems

This document provides the most complete survey of national geocoding systems known. It describes in significant detail every major national geocoding system. The report is organized by type of system delineating them into the following categories: those which are primarily geopolitical in nature and provide general reference coding structures for administrative or other purposes; those which reference either special significance locations or a combination of geopolitical, geostatistical and special significance locations; those which reference areas delineated according to special criteria, such as economic or postal distribution patterns; and finally, those based on grid networks. The document, report number DOT-TSC-OST-74, 26 is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 at a price of $4.10 per copy. Stock number: 050-000-0097.

The DOT National Geocoding Converter File - (File 1)

This computer file provides the capability of relating selected sets of spatially oriented data under the various county based national geocoding systems which have been developed. The file contains a record for each county, county equivalent, Standard Metropolitan Statistical Area (SMSA) county segment or Standard Point Location Code (SPLC) county segment in the U.S. identifying all major county codes and the associated county aggregate codes. File 1 is of great benefit in coordinating data sets at the national, regional and state-wide levels and has useful planning and management and operations applications. The following items are available from the Transportation Systems Center:

BOOKS:

- Volume I DOT National Geocoding Converter File-Structure and Content $1.00 ea.
- Volume II DOT National Geocoding Converter File-Alphabetical Listing by State-Alabama to Missouri
- Volume III DOT National Geocoding Converter File-Alphabetical Listing by State-Montana to Wyoming $6.00 Set

MAGNETIC TAPES:

- DOT National Geocoding Converter File (File 1) (Volume I included) 9 TRACK: 800 or 1600 BPI $50.00

To order, write below and enclose remittance:

Transportation Systems Center
Systems Research and Analysis Directorate
Information Division, Code 220
Kendall Square, Cambridge, MA 02142

The DOT County DIME (Dual Independent Map Encoding) File - (File 2)

The county boundary file provides the geographic outline data and hence the capability to produce maps of county-based data with display software systems currently in wide use. Used in conjunction with File 1 and a display system such as SYMAP, CALFORM or DPS the user can geographically plot data for demonstration purposes and visual aids. The Sequenced County DIME File has been arranged so that each county has a complete boundary whose segments are internally structured in a clockwise manner. The compressed County DIME File is composed of variable length records that contain all the segment data for a county boundary common to two and only two counties. The following items are available by writing the Transportation Systems Center (Address above):

- DOT County DIME File - Technical Summary $1.00 ea.
- DOT County DIME File (order a. or b.) 9 TRACK, 800 or 1600 BPI
  - a. Sequenced (for 32-bit machines)
  - b. Compressed (for IBM 360/370) $50.00 ea.

  (Technical Summary Included)

The DOT National County Component Converter File: Prospects, Problems, Feasibility

This paper is a systematic review of factors affecting the feasibility of developing a county component geocoding converter file, a file which is currently under development at DOT and which will contain subcounty codes. The paper deals with the nature of subcounty geocoding systems in general, the associated problems anticipated. Though somewhat technical in nature the paper may be of interest to many working in the area of geocoding systems. The paper, report number DOT-TSC-OST-74-17, is available through the National Technical Information Service, Springfield, VA, 22151. The accession number is PB-235 707/7WU and the price is $3.75 per copy.

In addition to the products listed above the DOT has under development the following items:

Geocoding Of Truck Survey Data

A report on the use of UNIMATCH (a program developed by the U.S. Census Bureau) to code data compiled by the Federal Highway Administration to geographic locations will soon be available. The report will cover the Department's first major use of the UNIMATCH program which was used to geocode truck data against a special combination file of the American Trucking Association's Standard Point Location Codes (SPLC) and the Census Bureau's Geographic Area Code Index (GACI). The program, tolerant of misspellings and variances in place names, consistently achieved a match rate of over 90%, proving UNIMATCH a tool of great potential in geocoding.

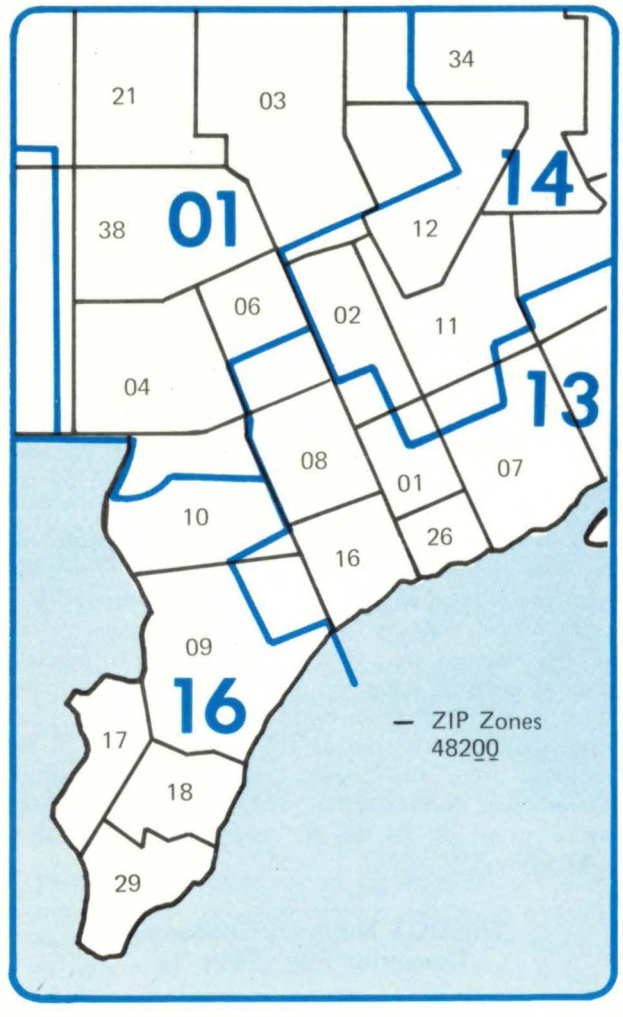
The DOT National County Component Converter File

This computer file, currently under development at the DOT, will contain a record for each county and county equivalent in the United States, identifying for that county all major subcounty area, place, point, city or location codes. This file will allow a user to associate data coded under subcounty systems thus bridging a significant gap which has existed between the national and subcounty levels. Completion of this file is expected by late 1975.

The DOT International Converter File

A file in the preliminary planning stage is the International Converter File which will contain the geographic codes used to designate countries and other national entities such as territories, zones and principalities. This file will allow a user to compare selected sets of nationally coded information of the U.S. with that of other nations. No estimated completion date has been established as yet.

The preceding products have been designed to allow for the more efficient and meaningful manipulation of data which is already available to planners, analysts and policymakers in government and the private sector. Interest in geocoding systems has been increasing significantly in recent years. The DOT has attempted to respond to the needs of users and welcomes suggestions in this area and comments on application experiences with the materials.



FOR MORE INFORMATION WRITE:

U.S. DEPARTMENT OF TRANSPORTATION
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