Census Data Use in Illinois by Small Metropolitan Planning Organizations

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This paper is one of a series in these proceedings documenting the uses of census data by the transportation community in Illinois. The focus in this paper is on uses of census data, specifically the Census Transportation Planning Package (CTPP), by the smaller metropolitan planning organizations (MPOs), those serving areas other than Chicago and St. Louis. The other papers in this series discuss census data uses by the Chicago Area Transportation Study (a large MPO), by transit planners, and by the research and academic community. The use of the CTPP has not been extensive in the state's smaller MPOs. The data are used most often for the development of trip generation models and to provide descriptive statistics on various demographic and travel trends. One major reason for this lack of use was the timing and delivery of the package, which has yet to be delivered in personal computer form. The smaller MPOs cannot process the data tape packages. For example, in 1980, other than the two largest MPOs, Chicago and St. Louis, only one smaller MPO, Peoria, even purchased the package. In all fairness it needs to be pointed out that the smaller MPOs, which for the most part are part of larger comprehensive planning organizations, are indeed heavy users of census data as they relate to their other planning functions. There is also a strong expectation that once the Urban Element has been distributed on CD-ROM, the MPOs will begin to explore its uses and begin applying the data. All the MPOs in the state noted that the CTPP was an important component to their transportation model development, which is ongoing at this time.

There are currently 12 metropolitan planning organizations (MPOs) either partially or totally within the borders of Illinois. Two MPOs, East West Gateway (St. Louis) and the Chicago Area Transportation Study (CATS), are considered large and excluded from the discussion in this paper. Also excluded is the Beloit area MPO, located just across the Wisconsin border north of Rockford. Presented here is an examination of the use of census data within the nine remaining MPO areas in Illinois. Throughout this paper these areas are identified by their core cities, which include Bloomington-Normal, Champaign-Urbana, Decatur, Dubuque (Iowa), Kankakee, Peoria, Rockford, Rock Island-Davenport (IA)-Moline, and Springfield. Figure 1 is a map showing the relative locations of these MPOs.

For this analysis telephone interviews were conducted with the nine MPOs. Each person interviewed was asked a similar set of questions. The intent of the interview was to gain a brief understanding of the MPO and explore its use of the census packages, specifically the Census Transportation Planning Package (CTPP). In all cases the actual individual or individuals who worked with or processed the data were interviewed. As such, the information provided does not represent the endorsement of any of the agencies and only reflects the information as synthesized from the respondents.

The interviews were conducted in a conversational and informal manner by the author, who had met many
of the individuals before the interviews. To adapt to the variety of differences among the agencies, the interviews were open ended and contained a great many follow-up questions. To help keep the interview focused, the following set of questions was developed and used as a guideline:

Has your agency used the 1990 census data, and if so, which products?

Have you used the CTPP?
What types of things have you done with it?
Feel free to talk about both routine and unique studies.
How critical were the census data for these applications?
What made the census data essential?
Could the work have been done without the census data?
Would it have been done without the data?
The list of agencies contacted and the persons interviewed are shown in the appendix to this paper. This listing is presented to provide a point of reference for any future follow-up and to help maintain an up-to-date list of users. This list is also useful as an adjunct to the directory of MPOs published by the U.S. Department of Transportation.

BACKGROUND

It is worthwhile to set the stage by reviewing some CTPP activities that were external to these MPOs but at the same time influential. The Illinois Department of Transportation (IDOT) provides a focal point for the CTPP through a variety of activities.

At the national level IDOT has maintained an involvement through the activities of CATS and some of the other large MPOs. As an original user of the 1970 data, CATS staff has had a rich history of use of the 1970, 1980, and 1990 CTPP through which a national presence has evolved, which has been supported by IDOT.

This support has come in several forms: financial, with the purchase of the CTPP; political, through letter writing to support the transportation questions in the decennial census and the long-form questionnaire itself; educational, through sponsorship of a National Highway Institute CTPP course; and marketing, by keeping the issue of the CTPP current with the MPOs.

Each year IDOT hosts a planning conference for the MPOs in the state consisting of 1.5 days of presentations on different topics by the MPOs. Through this process CATS staff has presented the concepts and supported the use of the 1990 CTPP for three separate years. During the first conference at which use of the CTPP was explained, the concept of submitting traffic analysis zone (TAZ) equivalency files was promoted and the plans for the release of the CTPP were discussed. At the next conference the CTPP content was reviewed, and finally, at the third presentation, the year 2000 efforts were reviewed as well as the upcoming release of the Urban Element on CD-ROM.

In addition to those efforts, IDOT has also put a process in motion that will likely build in a certain reliance on the CTPP data. It began several years ago when IDOT began an initiative to equip the smaller MPOs with the capability to do travel demand modeling and forecasting. This was facilitated by arming each MPO with the latest version of TRANPLAN, the personal computer on which to run it, and some set-up support. Currently, IDOT has a consultant under contract who is working with most of the MPOs to develop their own travel models and data sets and to get the models up and running. This effort began about 1.5 years ago, and in most areas the calibration phase in their model development is nearing.

INDIVIDUAL MPO REVIEWS

A synopsis of the results from each of the interviews follows. As will be seen, there is both a certain degree of commonality among the MPOs as well a degree of difference among them.

Bloomington-Normal

The staff of the Bloomington-Normal MPO wear multiple hats. The parent agency, the McLean County Regional Planning Commission, is responsible for comprehensive planning on a countywide basis. Within that county is the MPO that deals with the cities of Bloomington and Normal and several smaller adjacent towns; its area of operation encompasses approximately 100,000 residents.

In terms of census data, the MPO has been a heavy user and consumer for over two decades. In 1970 the organization went though a large-scale travel demand modeling process for which the Urban Transportation Planning Package (UTPP) was used quite extensively. Although the 1970 effort was considerable, it was not continued.

In terms of current heavy census data use, three general activities are under way. First, the MPO is heavily invested in providing statistical support and background information to those who request it locally. Data summaries and tabulations have been prepared for local school districts, administrative departments, and others.

Second, the MPO is active in using the census data for its planning work. Specific tasks have included processing of household and population forecasts. Custom data summaries that deal with specific planning questions have also been prepared at various geographic levels. An example was a special analysis dealing with mobility limitations.

Through the interview it was ascertained that although the MPO is a heavy user of census data, there has been little experience with the CTPP. The products that are routinely used are the Summary Tape Files (STFs). The CTPP data in use consisted of a paper-based tabulation by TAZ that was produced through an outside contract with Ron Treadway of Illinois State University, who has done census-related work for several of the smaller MPOs.

The third area of activity that promises to make greater use of the CTPP is implementation of the TRANPLAN model, development of which is under way. The MPO has developed its own unique TAZ structure, which will be used with the TRANPLAN model.

The census data are believed to be essential since they are the only data available for many of the issues of concern. To date, the CTPP has not really been used because of staff, equipment, and time limitations. However, there was general optimism concerning the release and use of the Urban Element on CD-ROM. The staff has recently been equipped with PCs, and they are heavy CD-ROM users.
This agency has not considered the potential of losing the data from Census 2000, but the staff wondered what the agencies that rely on it to satisfy federal mandates would do. No local travel surveys are currently planned, but the need for some was cited as critical. One person in this MPO is responsible for transportation-related issues.

Champaign-Urbana

The MPO for the Champaign area is the Champaign Urbana Area Transportation Study (CUATS), housed within the Champaign County Regional Planning Commission. Its residential population is in the range of 150,000 covering three cities including Champaign, Urbana, and Savoy. This region includes the University of Illinois at Urbana-Champaign.

CUATS has done a fair amount of work with census data but has not worked with the CTPP. The staff is currently exploring a nine-track tape version of the CTPP, working with a doctoral student at the University of Illinois. One difficulty has been identified and is being worked on. Apparently the equivalency file (which was a paper map) has been lost, and CUATS is working on linking their census TAZs and planning zone system. It was noted that the Urban Element CD-ROM may be helpful with this exercise. The MPO's TAZ structure is in their local geography, which was designed to support the local travel models. The census tract default zones were not used.

One of the major activities under way is moving the census data to the in-house geographic information system (GIS), which is based on the Arc/Info package; the census data are coming from a third-party vendor, Wesex. The Wesex data base is drawn from data contained in STF 3. The flow data in the CTPP (Part 3) have yet to be explored.

Among the smaller MPOs, CUATS is at an advanced level when it comes to travel demand modeling. They have had a working version of TRANPLAN up and running for several years. In the development of the model components, both the 1990 census data and employment data supplied by the state were used. CUATS is part of the larger IDOT contract for development of TRANPLAN, and their model development work is ongoing.

Interestingly, a regionwide door-to-door household travel survey was conducted in the area in 1991. Headed by John Kim of the Urban and Regional Planning Department at the University of Illinois, Urbana-Champaign, the survey boasts a 4 percent sample. However, the data are believed to have some methodological deficiencies and concerns, and only the work-related travel data have been successfully used.

In one respect the census data are believed to be critical to the work that the MPO is pursuing. However, no thought has been given to replacing the census data should they not be available for the year 2000. It was not surprising that there was a lukewarm reaction to the issues of the 2000 census since this MPO has yet to avail itself of the flow (Part 3) and employment (Part 2) data of the CTPP.

During the interview two other census-related efforts of interest surfaced. The first was an undertaking to remedy the problems associated with the Topologically Integrated Geographic Encoding and Referencing (TIGER) File. To this end, a major update was undertaken, which included acquiring address ranges and local information from the 911 operator. Another project, working with the enhanced TIGER File, dealt with geographic determination of the true level of transit service coverage in buffer areas.

Decatur

Decatur is an area of roughly 100,000 people. The MPO, the Decatur Urban Area Transportation Study (DUATS), is housed within the Macon County Department of Transportation Planning and Zoning. However, the transportation planning work of DUATS, for example, work with the IDOT consultant on travel demand model development, is handled by staff from the city of Decatur.

One individual works specifically with the CTPP. From the way it was described, it sounded as though the agency has one of the CD-ROM versions of the CTPP in which the data are in raw form. Unfortunately, neither the agency nor the city has the equipment, computer skills, or wherewithal to process the data in that form.

When DUATS first received the CD-ROM version of the CTPP, Treadway from Illinois State University produced some tables that could then be further analyzed. The tables included household-related summaries and data on workers, vehicles, and modes. The data were summarized at the local TAZ level and developed primarily to support model development.

The modeling work for the area is now being developed. However, from a modeling perspective, the CTPP data have been critical components of the work, being the only data available. For modeling, the census data are being supplemented with local employment and land use data. A localized household survey was not made in the area, but some specialized surveys may take place as the area moves toward its model calibration phase.

In terms of special projects, an atlas-type document was produced using data from STF 3a. It represents an extraction of the demographic portions of the data for residents at the tract and, in some instances, the block level. At the present time the issue of bicycle usage is being studied, and the Nationwide Personal Transportation Survey data in conjunction with the census data are being used.

Interest was expressed in seeing the Urban Element CD-ROM when it is released. In a larger sense, this
agency was at a loss with the CTPP because of an inability to work with the raw data. Other census products used are the reports and paper tabulations.

**Dubuque**

The MPO that covers the area of Dubuque, Iowa, also covers the city of East Dubuque, which is in Illinois. The MPO is responsible for approximately 70,000 residents. It is housed within a parent agency, the East Central Intergovernmental Association (ECIA), which covers a five-county area.

ECIA is a full-service planning agency that uses census data quite extensively. This agency is responsible for planning for local development, developing and completing the area's Community Block Development Grants, performing economic development studies, providing general information in response to requests, and doing the MPO's transportation planning.

The main census data used are the various STF products. The agency itself is PC based, but when needed it can find support from IDOT through a subcontract with a local university. However, for their data needs ECIA does its own processing.

ECIA did not use the CTPP, primarily because of its lack of timeliness. The Census Bureau could not produce the data in time to fit the local planning time frame. Moreover, a direct need for the CTPP has yet to be realized. Around 1990, ECIA conducted an update of their travel demand model (TRANPLAN) and was satisfied with information gleaned from the STF products, which was information at the place of residence. For employment information, ECIA relies on data supplied by the Iowa and Illinois Department of Employment Securities.

The MPO did turn in TAZ equivalency files and is very interested in seeing the Urban Element CD-ROM once it is available.

**Kankakee**

The Kankakee County Regional Planning Commission houses the activities for the area's MPO, which is oriented around the cities of Kankakee, Bourbonnais, Bradley, and Aroma Park, making up a population of 100,000. In a way, the MPO is relatively new. Up to two years ago planning activities were handled through an outside consultant. Since then, the MPO has had its own full-time staff and now has a transportation planner and a transportation engineer.

In terms of census data, the staff uses secondary printed reports heavily and is now developing its computer expertise with the use of CD-ROM technology. One of their major products consisted of a data summary book containing a variety of data items summarized by various levels of geography at the place of residence. The MPO staff also drew upon census data for the development of population forecasts for their long-range plan. These forecasts were done at the TAZ level, which at the time was the census tract.

For ongoing travel modeling, the MPO is a party to the TRANPLAN scheme. In the interview it was learned that originally the Census Bureau default for TAZ, the census tract, was used. Since then the new and local defined TAZ system has been developed and the Census Bureau produced a special data tabulation to bring the CTPP into the new zone system. Because of its proximity to northeastern Illinois, CATS included this area in its CTPP data base and has been working with the data at the TAZ tract level that was defined by the earlier contract staff.

At the urging of some of the staff at Northern Illinois University, this MPO sent a letter to Congressman Rogers in support of maintaining the long-form questionnaire in the census. Earlier in the year letters were sent to the Illinois senators from CATS, and IDOT urged the MPOs to do the same.

**Peoria**

The MPO for the Peoria area is the Tri-County Regional Planning Commission, which handles the transportation planning for the Urbanized Area of Peoria, Tazewell, and Woodford counties. The MPO area population is 250,000.

Peoria, along with the other MPOs, is now in the process of developing a travel demand forecasting tool. This process began some time after the 1990 TAZ equivalency files needed to be submitted to the Census Bureau. Originally, this region did not submit any unique TAZs and instead accepted the default of having their CTPP data aggregated at the tract level. Since that decision was made, the MPO has made a commitment to develop its TRANPLAN modeling capability and was faced with the issue of designing a more refined zone system. Unfortunately, the zone system was developed far too late to be submitted to the Census Bureau for the CTPP tabulation.

To remedy this, the MPO staff (with the help of their GIS) established an equivalency file that they have used to reaggregate the needed data from the census STF products. They have used the STF products to provide the basic inputs for model development. In effect, the staff created their own miniature Part A CTPP. Interestingly, the MPO had checked with the Census Bureau about running a special tabulation and found that it would cost them a few thousand dollars. Apparently, they were unable to gain enough local support to purchase a special tabulation.

The MPO also provides a great deal of census data in response to both staff and outside requests. It is a heavy
user of the CD-ROM versions of the STF products. Because the agency also has comprehensive planning commission responsibilities, it works very closely with the towns in the area on the development of their comprehensive plans. This work draws heavily on census data.

During the interview, staff noted that they are primarily a PC-based agency. They do have one work station, but it is relatively new and has not reached maturity in its use. It was also pointed out that the census data are important and should be expanded for 2000. There was a suggestion that the census should collect complete origin-destination information on all trip types and purposes, whereas there was also a concern that the CTPP itself was difficult to use. It seemed that the main frustration with the CTPP was tied to the latency in delivery of the CD-ROM data. When using the STF, the staff does have the technical skills to pull the needed data directly from the file as opposed to using the extraction software.

In addition, this MPO has made extensive use of the TIGER File for their TAZ work and in allocating employment and other data. Currently, a rural address check is being made using Arc/Info as the GIS.

### Rockford

The duties of the Rockford area MPO are handled within the city of Rockford by staff in the Community Development Department. The population of the planning area is approximately 207,000 and encompasses the city of Rockford, portions of Winnebago County, and several smaller towns and cities.

The MPO has done relatively little with the various census products. The CD-ROM versions of the STFs have been used but not the CTPP. Within the transportation group the census data played a major role in the analysis and preparation of their Title 6 report.

On another project, a great deal of effort was spent mapping the basic demographic data, all of which came from the STF products on CD-ROM processed in a PC environment. The desired data were extracted from the CD with DBase, processed in QuattroPro, and mapped with MapInfo. This analysis was used in support of their plan and plan development. Another project used census data to analyze the population distribution for the purpose of examining the metropolitan area's size and boundaries.

In terms of travel demand models, the Rockford MPO is currently running T-Model, and TRANPLAN is under development. Census data are really not used in the operation of T-Model. The trip generation rates were established some 30 years ago. Other information used in this process includes dwelling unit data, which are locally maintained, and employment data, which come from the state.

For the TRANPLAN work it was thought that many of the basic inputs, like the old trip generation rates, would be used. No direct survey work is planned, and staffing levels were cited as the single most important reason for not doing more census data analysis. However, it was pointed out that the land use and neighborhood planners are heavy users of census data. The transportation planners interviewed were unaware of any of the activities surrounding the 2000 census and of the BTS version of the CTPP.

### Rock Island-Davenport

The MPO for the Rock Island area is the Bi-State Regional Commission. Aside from the Chicago and St. Louis MPOs, this is the largest in the state. It straddles two states (Illinois and Iowa), covers a quad-city region made up of Davenport, Bettendorf, Moline, and Rock Island, and has 350,000 residents.

The MPO staff considers itself a large user of the census products, but has not used the CTPP. Census data uses range from producing statistical summaries to estimating parameters for travel models. Both of these efforts draw heavily upon the STF and Public Law data sets. In terms of statistical summaries, community profile tabulations, data to support a variety of grant applications, and information to help attract development have all been mined from the STF products. For the travel models, input variables include household size, workers per household, and vehicles per household.

For model development, it should be recognized that the MPO did its own allocation of census block and block group data to their planning zone geography. Once the CTPP data are available, MPO staff will have to decide how they want to deal with this issue. Census data were believed to be critical for all their work. The staff could only speculate about what they would do if no census data were available.

Within Bi-State two basic media are relied on for census data: printed reports and the CD-ROM series. The complete data processing capability is PC network based. It was noted that the CTPP had been received, but since it is on a nine-track tape, it has just sat on the shelf. Also, although the staff was aware of and had a copy of the Statewide Element on CD-ROM, no one has used it. They were finding that it was too slow to run and that it took much room on their computers. Since it was not in their local geography, they did not see a real need to overcome these hurdles. They are anxiously awaiting the release of the Urban Element on CD-ROM.

Although this region is rather large, Bi-State as a travel demand modeling agency is relatively new. Until three years ago all the technical development work was done for the area by IDOT. There are no plans for a regionwide household travel survey. There is a rather large-scale bridge crossing analysis under way that will produce a great deal of information for the commission's use.
Springfield

The MPO in Springfield, the state's capital, is housed in the Springfield-Sangamon County Regional Planning Commission. The commission is a full-service comprehensive planning agency, whereas the MPO deals with transportation planning issues. The MPO is responsible for a population of 125,000 residents and is focused on the Springfield Urbanized Area.

To date, the MPO staff have not been big users of the CTPP. However, they are part of the TRANPLAN process and have asked Treadway to provide them with paper-based tabulations of the CTPP data.

The timing of the TRANPLAN development and the need to provide TAZ equivalencies for the Census Bureau was just slightly less than ideal. Originally, the MPO was the test site for the original TRANPLAN purchase. As such, a zone system was developed early and equivalency files were submitted to the Census Bureau. However, as luck would have it, there were changes. With a new consultant to develop the TRANPLAN model, the TAZ zone system was changed. Fortunately, the MPO staff was able to submit the new zone system to the Census Bureau just in time—well past the original deadline but before the Census Bureau staff had done the data processing for the area. Even with the new zone system there may be some TAZ allocation problems, which are currently under study.

CONCLUDING COMMENTS

Throughout Illinois there has been a recent groundswell of activity in the transportation planning community. Around 1990 the state transportation department purchased the travel demand modeling package TRANPLAN and a computer to run it for each MPO. Following up on this, the state has hired a consultant to develop the localized models and get them up and running. This in turn has caused many of the local areas to focus differently on the CTPP than they may have done without the travel demand modeling capability. The census data and the resultant CTPP represent the only data available in these metropolitan areas. In an almost rhetorical way, these are the only data suitable for the use.

In the smaller MPOs the use of the CTPP has not been as extensive as one might expect. The greatest use has been in the development of trip generation models and to provide descriptive statistics on various demographic and travel trends. One major reason for a general lack of use is the timing and delivery of the package. As of the writing of this paper, the MPOs have yet to receive their Urban Element in a form that matches their processing capabilities.

It needs to be pointed out, however, that the smaller MPOs, which for the most part are part of larger comprehensive planning organizations, are indeed heavy users of census data as they relate to other planning functions. There is also a strong expectation that once the Urban Element CD-ROM is distributed to these MPOs, they will begin to explore its uses and begin applying the data. All MPOs interviewed noted that the CTPP was an important component in their transportation model development, which is ongoing.
For the most part the CTPP has been widely used but has yet to be tapped to its fullest potential. Many individuals had ideas about the use of the CTPP and would like to be able to work with the package but acknowledge a general lack of human resources and in some instances a lack of equipment. In one sense for the CTPP to be more widely used the data would have to be available when the questions and needs that would require its use arise.

Finally, there was general agreement that the window of opportunity to expand the base of CTPP users is continuing to close as the CD-ROM version of the Urban Element is delayed. In 1980, other than the two largest MPOs, Chicago and St. Louis, only one smaller MPO, Peoria, purchased the package. The other MPOs did not have the resources for the purchase nor did they see the benefits from using it. For 1990, however, many believed that once this new group of users got the census information and began to explore it, they would integrate it into their local planning processes. As noted, midway through 1996, the 1990 data had yet to be received, and consequently any growing support for the product was on the wane.

APPENDIX: Illinois Small-Area Metropolitan Planning Organizations

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