



CTPP 2000 Status Report

August 2004

U.S. Department of Transportation
Federal Highway Administration
Bureau of Transportation Statistics
Federal Transit Administration
In cooperation with the TRB Census Subcommittee

CTPP 2000 Part 3 Data Released

By Nanda Srinivasan, Cambridge Systematics Inc.

On May 14, 2004 the Census Bureau (CB) released preliminary Part 3 data. The data are available in flat ASCII files on the BTS Transtats website (www.transtats.bts.dot.gov). Instructions for downloading the data are listed on Page 6 of this status report.

Each download file contains several zipped data files, and a zipped documentation file. The documentation file includes:

1. Appendices documenting Part 3 data,
2. A data dictionary
3. README file.
4. A SAS program to read the data into SAS, and MS Access Template for easy access to the data. To use the MS Access Template, steps are listed in a document called "conversion notes.doc."

Census Bureau is currently working with its consultant to produce the CTPP Access Tool Software for Part 3. The Access Tool will be similar in look and feel to the versions produced for Part 1, and Part 2, but will have additional steps for selecting origin-destination geography. Because the Access Tool is not expected to be ready until September 2004, we urge you to access the data using the flat files on the BTS website. If you have any questions about these instructions, please contact either Nanda Srinivasan at nanda.srinivasan@fhwa.dot.gov or 202-366-5021 or Clara Reschovsky at clara.a.reschovsky@census.gov or 301-763-2454.

Update on the American Community Survey

*By Nancy Torrieri, U.S. Census Bureau
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The U.S. Census Bureau will delay temporarily the ramp-up to full implementation of the American Community Survey (ACS), scheduled to begin in July 2004. This applies to the U.S. and Puerto Rico, where the ACS program is implemented as the Puerto Rico Community Survey. This action is due to current uncertainties in the appropriations process for FY05. Nevertheless, the Census Bureau is still planning to conduct the fully expanded ACS for housing units in 2005. The start of ACS group quarters data collection will be delayed until 2006

The House Appropriations Subcommittee on Commerce, State, Justice, Judiciary and Related Agencies approved \$146 million for ACS, which is \$81.2 million above the current year, although \$19 million less than the Administration's request. The full House of Representatives voted the same amount for ACS, but the U.S. Senate has not yet acted on the Commerce, State, Justice appropriations bill.

(...Continued on Page 7)

Systematic Measurement of Catchment Areas

By KW Axhausen (IVT, ETH Zürich), M Botte (Socialdata Australia, Fremantle), and S Schönfelder (IVT, ETH Zürich)

Catchment areas and their measurement

Catchment areas, commuter sheds and its cognates try to describe the area that is influenced by a particular location in terms of commuter flow towards it or originating from it. While any numbers of detailed methods exist to calculate them, in many cases one is only interested in a fast and systematic way to measure their size and orientation for many localities and time periods. Transferring a measurement approach for human activity spaces, Schönfelder and Axhausen (2003) and Botte (2003) have demonstrated that the confidence ellipse can be productively used for commuter movements as well. The confidence ellipse is the two-dimensional generalization of the confidence interval, which can be easily calculated using standard statistical software, such as SAS, or with a suitable extension in any GIS program (See for example Schwarze and Schönfelder, 2001). It describes the area that captures, for example, 95% of the flows towards or from a particular location. Its disadvantage is its given form (the ellipse), which is not able to adapt it to the detailed patterns of the flows (See Schönfelder and Axhausen,

2003 for more flexible alternatives). Still, one is often happy to accept this shortcoming for the benefit of being able to calculate it for any number of locations and points in time with a reasonable effort.

The Swiss case

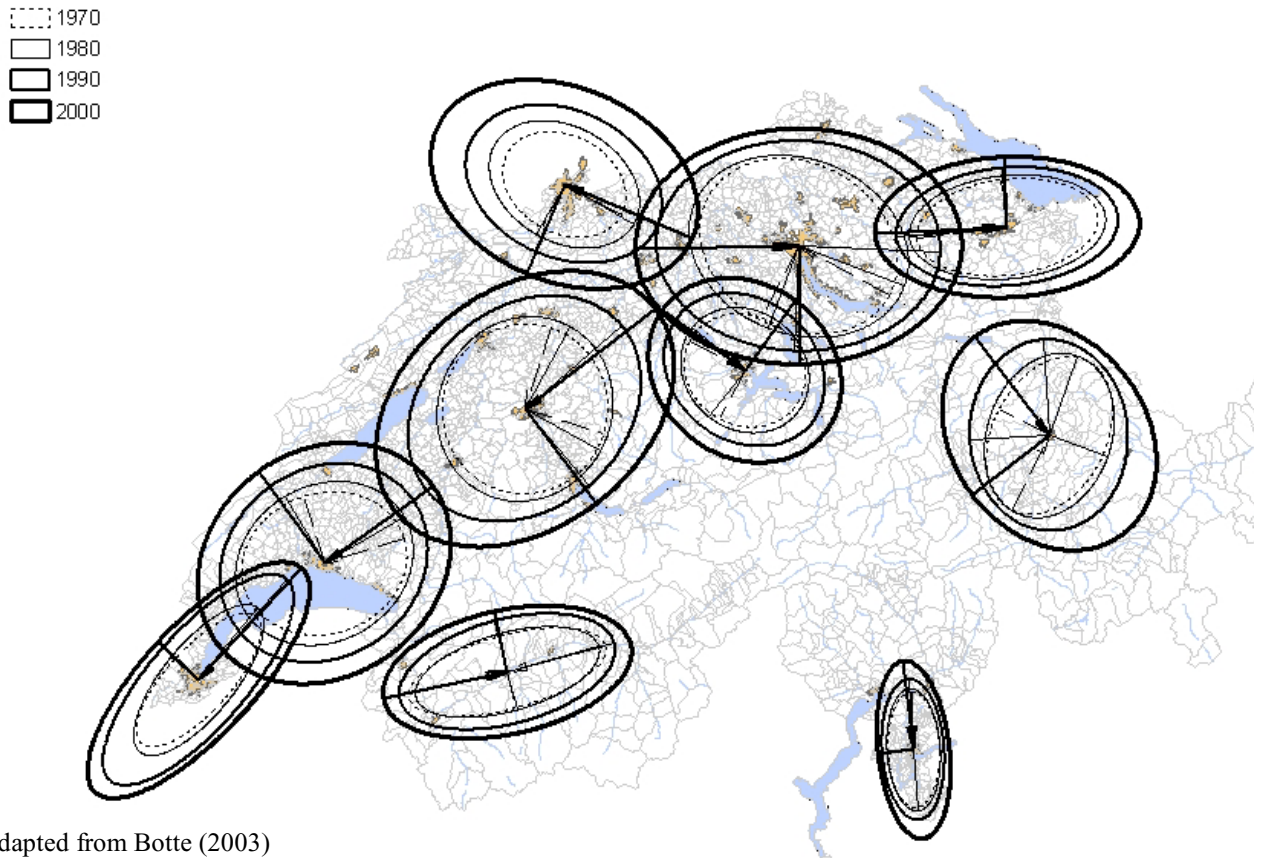
The Swiss Federal of Statistics publishes since 1970 every ten years commuter matrices by municipality and mode. The municipalities cover the territory of Switzerland completely. Unincorporated areas, common in the United States, are not an issue in Switzerland. After combining municipalities which had merged between 1970 and 2000, Botte (2003) calculated the catchment areas of about 3000 municipalities for four decades; both for inflows and outflows (See Axhausen, Botte and Schönfelder, 2004 for analyses of these data). Of particular interest are the (inflowing) commuter sheds of the ten largest Swiss cities by all modes (See Figure 1 on Page 3). The increase in the size of the commuter sheds is very visible, but also their changing spatial orientations. The possibilities offered by this approach are obvious and exciting.

References:

1. Axhausen, K.W., M. Botte and S. Schönfelder (2004) Measuring the spatial reach of persons, cities or organisations, STELLA Group 3 meeting, Arlington, January 2004 (See <http://www.ivt.baug.ethz.ch/vrp/v82.pdf>).
2. Botte, M. (2003) Strukturen des Pendelns in der Schweiz, MSc thesis, ETH Zürich and TU Dresden, Zürich.
3. Schönfelder S. and K.W. Axhausen (2003) Activity spaces: Measures of social exclusion? *Transport Policy*, 10 (4) 273-286.
4. Schwarze, B. und S. Schönfelder (2001) ArcView-Extension VISAR: Visualisierung von Aktionsräumen, Version 1.6, Arbeitsbericht Verkehrs- und Raumplanung, 95, Institut für Verkehrsplanung, Transporttechnik, Stassen- und Eisenbahnbau (IVT), ETH, Zürich.

Systematic Measurement of Catchment Areas....Continued from Page 2

Figure 1. Development of the commuter shed of the mayor Swiss cities since 1970 (95% confidence ellipses excluding the 5% longest commuting distances)



Adapted from Botte (2003)

Examining Data on Transit Use in a Policy Perspective

Robert Dunphy analyzes transit markets using National Household Travel Survey data, and Census data in an article entitled "Finding the Proper Niche for Public Transit Investment" published in *"This Month In Urban Land"*, *Urban Land Institute*, May 2004, Volume 63, Number 5, Washington, D.C." (Available on-line for members at <http://urbanland.uli.org>).

The article is an interesting read for many of us interested in examining, and using data from a transit perspective.

Noting that although transit shares in the nation account for only 1-2 percent of all person trips, Dunphy lists 6 primary regions in the country where transit is both well patronized and extensive (attracting 26 – 35 percent of commuters living in the central city). Apart from these, there are many secondary markets where transit attracts significant (10 – 20 percent central city) commuters. A third set of markets (termed as emerging/new) includes fast growing regions trying to incorporate transit into their transportation system. Dunphy also examines options for Central Business Districts, Central Cities, Auto-dominant areas, and suburban downtowns.

ACS and Decennial Census SAS files available for research purposes

By Elaine Murakami, Federal Highway Administration

A short set of tables have been prepared using 9 of the 36 test ACS counties with data from the 1999-2001 ACS, and the Census 2000 long form. The Bureau of Transportation Statistics and Federal Highway Administration jointly contracted with the Census Bureau to prepare this set of tabulations. The counties are: Hampden, MA; Douglas, NE (TAZ); Lake, IL (TAZ); Multnomah, OR; San Francisco, CA (TAZ); Pima, AZ (TAZ), Franklin, OH; Bronx Borough, NY; and Broward, FL (TAZ). The data are summarized at the place and tract levels, five of the counties have TAZ level geography as well. There are 44 residence-based tables, 21 workplace-based tables, and 11 for flow tabulation.

Making the files as comparable as possible

To make the data more comparable, the group quarters data have been removed from the decennial file, as the ACS test did not include group quarters. Also, as ACS data are limited to those residing in the 9 subject counties, the decennial census data has been similarly restricted to those residing in the 9 counties. The data from both files are rounded, with the decennial data rounded to the nearest 10.

Sample size

Under full implementation of the American Community Survey, the Census Bureau says that 5 years (60 months) of survey data will approximately result in a sample of 12.5 percent of housing unit addresses. The decennial long form in 2000 was a sample of 16.6 percent of housing unit addresses. Five years of ACS data are needed before small area tabulation (tract, BG or TAZ) can occur. Under the ACS test, the 3-year (1999-

2001) samples were designed to approximate the same proportion of housing unit addresses as a 5-year sample under full implementation. Additionally, the return rates are lower for the ACS, so the resulting unweighted samples are considerably lower than the decennial sample.

So, generally speaking, **the ACS sample has only three-fourths the number of samples as the decennial files.**

Unweighted Sample of Persons¹

	ACS-Sample Size	Ratio ACS /C2K	1999-2001ACS	C2K
Pima AZ	13.4	0.67	70,277	104,260
San Francisco CA	9.6	0.47	41,561	89,110
Broward FL	9.5	0.51	94,288	183,840
Lake IL	10.3	0.46	41,390	89,760
Hampden MA	14.6	0.69	41,457	59,720
Douglas NE	15.2	0.75	47,483	62,930
Bronx NY	10.2	0.38	57,069	149,310
Franklin OH	9.4	0.44	64,416	147,680
Multnomah OR	15.0	0.71	64,445	90,320
9-county total	11.2	0.53	522,384	976,930

The result is that there are many fewer O/D pairs in the flow tabulation. This affects both tables that were NOT subject to thresholds (Tables 3-1 and 3-2) and tables that were

¹ Source: ACS and Decennial SAS files, Part 1 (residence based) TAB02X1

subject to thresholds (Tables 3-3 thru 3-11). However, response rate should not be considered the only measure of survey data quality. This point has been reiterated many times by Census Bureau staff, although OMB has historically used response rate as the basic quality measure.²

So, without debating the survey quality between ACS and the decennial long form, and just evaluating the data based on the number of records present, the ACS, based on the test from 1999-2001, results in a serious loss of data BECAUSE of the general loss of records.

Flow data subject to threshold of 3 unweighted records

The impact on flow tabulations using a threshold of 3 unweighted records is severe. The table below shows the number of records for Tables 3-3 onward, which have a threshold requirement. The geography in the NCHRP tabulations is limited to 9 counties in the ACS test sample, and this is an aggregate of those 9 areas. I have not looked at the breakdown for each county.

	Ratio ACS/C2K	1999-2001 ACS	C2K
County-to-County	.67	340	509
Tract-to-tract	.44	18,239	41,697
TAZ-to-TAZ	.42	5,365	12,827

Because ACS data are collected over a period of time, compared to the decennial census, the possibility of disclosure in ACS should be smaller. Having a disclosure threshold for CTPP 2000 has made several tables un-useable,

2 The ACS uses sample for non-response follow-up and achieves a very high response rate in the follow-up survey. The Census Bureau weights the follow-up samples before calculating an overall survey response rate.

and these thresholds will cause more severe loss of data for ACS. One alternative with ACS flow tabulation might be to not require thresholds as those applied to the CTPP 2000.

Alternatives to preserving flow tabulation include:

- a. Defining a geographic unit larger than a tract (example 2 or 3 tracts), but smaller than a county, OR
- b. To accumulate even more than 60 months of data, although this may result in loss of trend analysis capability.

To get a copy of the data

For a copy of the SAS datasets, please contact Nanda Srinivasan (Nanda.srinivasan@fhwa.dot.gov) The data are stored as SAS files. USDOT has no plans to convert the files into other formats. The files were prepared for the primary purpose of providing data for the NCHRP 08-48 project "Using ACS data for Transportation Planning." However, because the Census Bureau's Disclosure Review Board has reviewed the data, we can make the data broadly available to others who are interested.

Download Instructions for CTPP 2000, Part 3

- 1) Go to <http://transtats.bts.gov>
- 2) Select Highway or Transit, and then scroll down to find CTPP 2000 (See Figure 1).
- 3) On the CTPP 2000 page there are four sections: Part I, Part II, Part III, and Part III Selected (See Figure 2 on page 7).
- 4) Part 3: **Summary Levels from State to Census Tract**

The first Part III section contains data for summary levels from **state through census tract**. Select any state and click on download. Each downloaded zipped file should contain two zipped files.

One of these files contains the documentation files and the other file contains the data files. The zip file

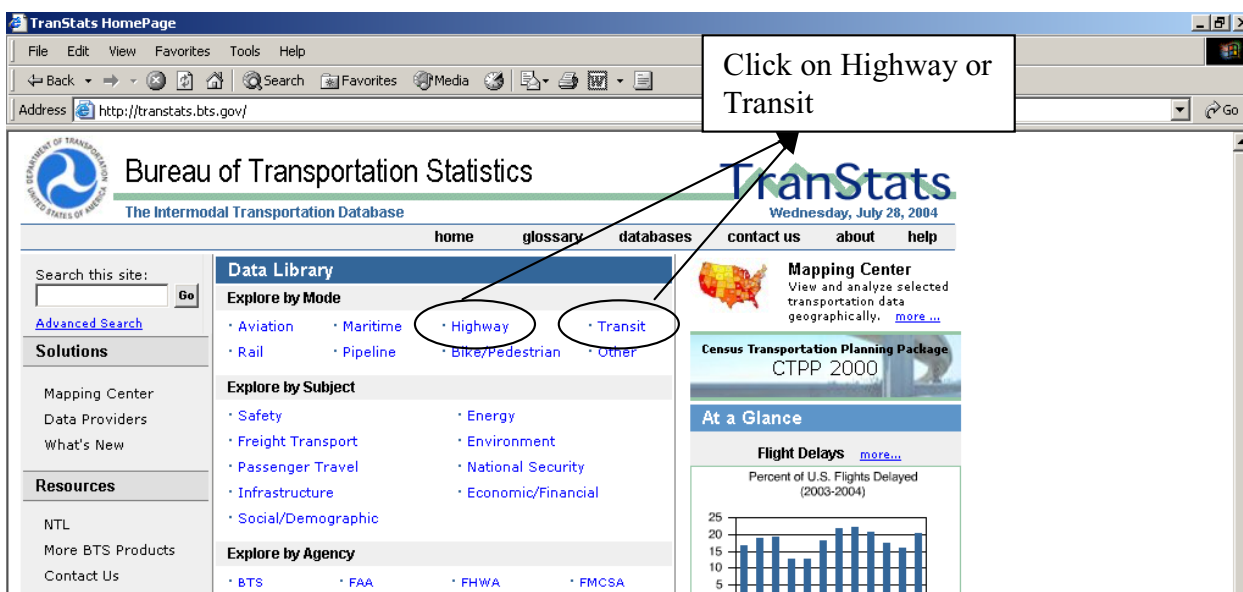
with the data has more zipped files for each summary level such as State, State-County, State-County Tract etc.

- 5) The **Part 3 Selected** section contains the State DOT and MPO **detailed** geography summary levels. Click on the "Download" link, select your state, and then click on the download button to save the file to your computer.

Each downloaded zipped file should contain two zipped files. One of these contains the documentation files and the other contains the data files. The zip file with the data in it has more zip files – one zip file with detailed geography for the state DOT (e.g., mo_ascii.zip for Missouri) and one zip file for each MPO in the state with detailed geography for that MPO (e.g., mpo1741.zip for the Columbia MPO).

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Figure 1. TranStats Website



ACS Survey Ramp-Up Delay (Continued from Page 1)

Although the appropriations process will continue for some time, the Census Bureau has decided on this temporary delay as a fiscally prudent measure. The Census Bureau appreciates congressional support for the ACS, and will continue to monitor closely the appropriations process as we consider

options on how best to proceed with the ramp-up.

We will continue the current program of mailing the survey to approximately 67,000 households per month. Additionally, this temporary delay will not have an impact on the ACS estimates for 2004.

Figure 2. CTPP 2000 Part 3 Download Instructions
(Continued from Page 6)

state. For questions on these files, please contact Clara Reschovsky at the Census Bureau (phone: 301-763-2454, e-mail: clara.reschovsky@census.gov).

CTPP 2000 Part 3	The CTPP 2000 Part 3 - JOURNEY-TO-WORK (JTW) tables provide detailed information about the commute trip from home to work. These PRELIMINARY tables include the following summary levels: State, State-County, State-County-County Subdivision, State-County-County Subdivision Place, State-Place, and State-County-Tract. Detailed State and MPO geography tables are available as part of CTPP 2000 Part 3 Selected data.	Profile Download
CTPP 2000 Part 3 Selected	The CTPP 2000 Part 3 Selected tables include detailed State and MPO geographic data. In the final release, these tables will be included with the main Part 3 data.	Profile Download

Please note that the Part 3 data are PRELIMINARY, and are undergoing evaluation by State DOTs and MPOs. Once these agencies examine the data and ensure that there were no processing errors, Census Bureau will finalize the data, and we will post the final files to the BTS TranStats Website. Data documentation, SAS programs, and MS Access Template are provided in the zipped folder for each state. For questions on these files, please contact Nanda Srinivasan at FHWA (Phone: 202-366-5021, e-mail: nanda.srinivasan@fhwa.dot.gov)

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Listserve: <http://www.chrispy.net/mailman/listinfo/ctpp-news>

CTPP Website: <http://www.dot.gov/ctpp>

TRB Sub-committee on census data: <http://www.trbcensus.com>

FHWA Website for Census issues: <http://www.fhwa.dot.gov/planning/census>

CTPP for 1990 and 2000 downloadable via Transtats: <http://transtats.bts.gov/>

CTPP Place of Residence Profiles: <http://www.transportation.org/ctpp/home/default.htm>

Order CTPP 2000 CD-ROM with Software: <https://www.bts.gov/pdc/index.xml>

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