CTPP Status Report

January 2011

U.S. Department of Transportation
Federal Highway Administration
Bureau of Transportation Statistics
Federal Transit Administration
AASHTO Standing Committee on Planning
In cooperation with the TRB Census Subcommittee

TAZ Delineation for Use in CTPP

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February through July of 2011 will be critical months for Traffic Analysis Zone (TAZ) and Traffic Analysis District (TAD) delineation for CTPP. If you are an MPO or state DOT and want the 2006-2010 CTPP to include tabulations for TAZs and TADs, you need to allow enough time to delineate these geographic entities and submit them to the Census Bureau.

For the first time, two different custom geographic zone systems will be allowed. In addition to TAZs, a new geographic area called a Transportation Analysis District (TAD) will be defined. TADs will have a minimum population threshold of 20,000. The concepts behind the TADs are to have a geographic unit that meets the Census Bureau's threshold for three-year ACS tabulation, 20,000 people per zone, and to provide high-quality data. Even if a state or MPO chooses not to define TAZs, they should consider defining TADs by aggregating 2010 block groups, 2010 Census tracts, or small rural counties to avoid the "incomplete coverage" problem currently found in ACS standard tabulations. (Only cities and counties with more than 20,000 population are covered in ACS standard tabulations.)

TAZ Delineation Schedule

- December 2010: Final review of the list of state and MPO individuals who will be the point of contact for their areas is delivered by FHWA to the Census Bureau's Geography Division. First prototype version of the TAZ delineation software, called the Master Address File (MAF)/TIGER Partnership Software (MTPS) TAZ Module, delivered to Census Bureau.
- January 2011: MTPS TAZ Module demonstrations at Transportation Research Board Annual Meeting at the Census Bureau booth in the exhibit hall.
- February 2011: MTPS TAZ Module training, webinars are tentatively scheduled for Friday, February 25 and Monday, February 28 coordinated by FHWA.
- March through early April 2011: Posting of MTPS TAZ Module, 2010 Census data, and geographic shapefiles on a secured web site for state/MPO download. This will occur on a rolling basis. Each participating agency will have three months to delineate their TAZs and TADs and return the files to the Census Bureau for review and processing.

(continued on page 2)

2006-2008 CTPP Released!

2006-2008 CTPP based on ACS data has been fully released! Tabulation is limited to areas with 20,000 residential population or more. The data with the access software are available at www.ctpp.aashto.org. Go check it out! The initial version was released in mid-January, and upgrades and bug fixes are rolling in on an as-needed basis.

This round of CTPP is using web-based data delivery. Please refer to the article written by Paul Agnello for more information about the data access software. http://www.fhwa.dot.gov/ctpp/sr1008.htm

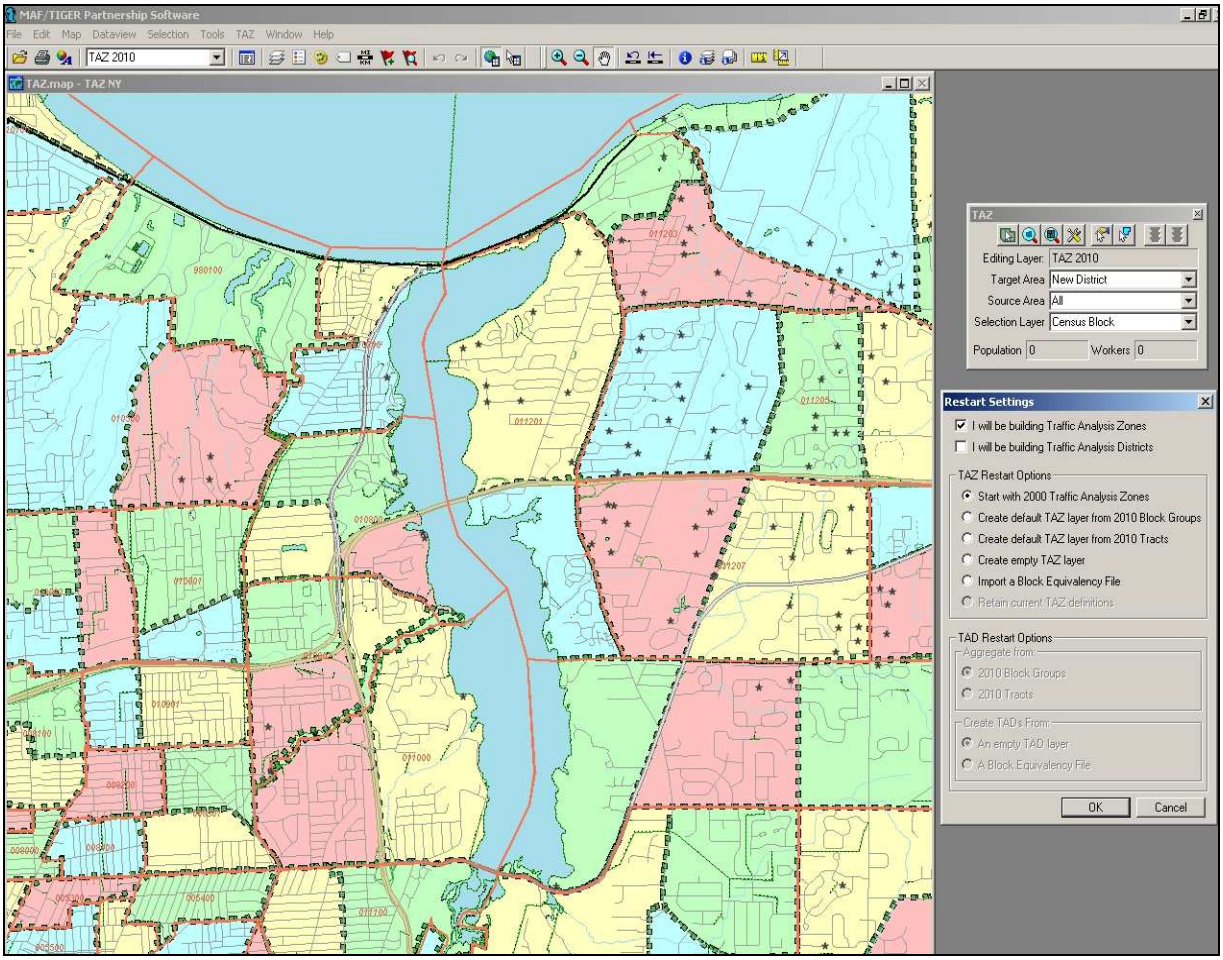
TAZ Delineation for Use in CTPP (continued)

- June through early July 2011: All files must be returned to Census Bureau's Geography Division within three months after the receipt of the TAZ/TAD delineation software and data.

TAZ Software Example
Note: The figures shown below do not represent the final version of the MTPS TAZ Module; those in the final version may look somewhat different.

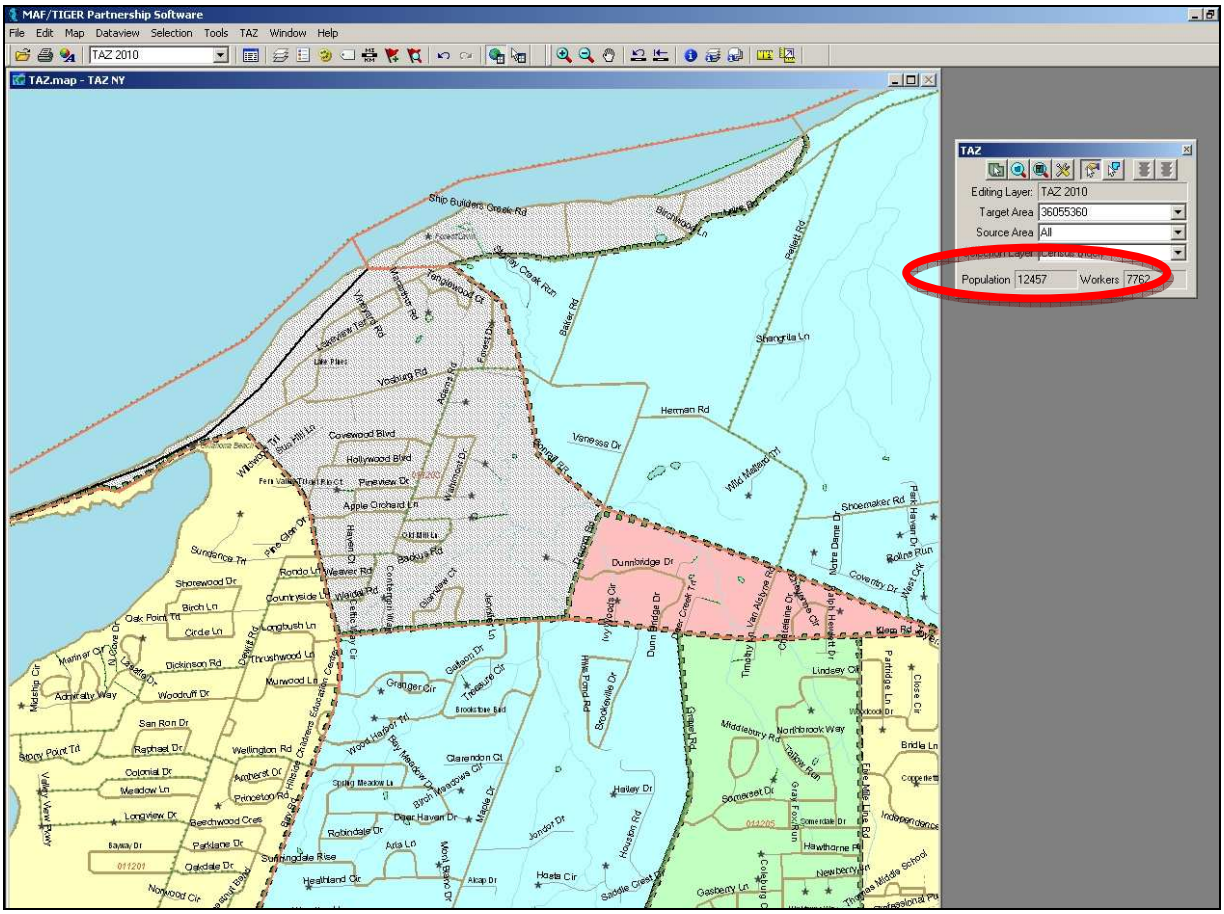
The TAZ delineation software is being developed by Caliper Corporation. The software, referred to as the MTPS TAZ Module, has a Geographic Information System (GIS) basis, similar to their Maptitude product and is a stand-alone package that does not require purchase and/or a license(s) to run. The MTPS TAZ Module allows MPOs and state DOTs to delineate TAZ entities (TAZs/TADs) based on 2010 Census tabulation geography (census tracts, block groups, or blocks). The module will have the ability to delineate TAZs only; both TAZs and TADs; or TADs as aggregates of default TAZs (e.g., 2010 Census tracts or block groups). It also will give participants the option of delineating their 2010 TAZs starting from scratch; using their TAZs from Census 2000; creating new TAZs starting from the 2010 Census block groups or 2010 Census tracts; or by importing block equivalency files (i.e., loading your own file in which you already have assigned TAZ codes to 2010 Census blocks) (Figure 1).

Figure 1. This image shows the TAZ software map display, toolbox, and start (restart) settings available to the participant.



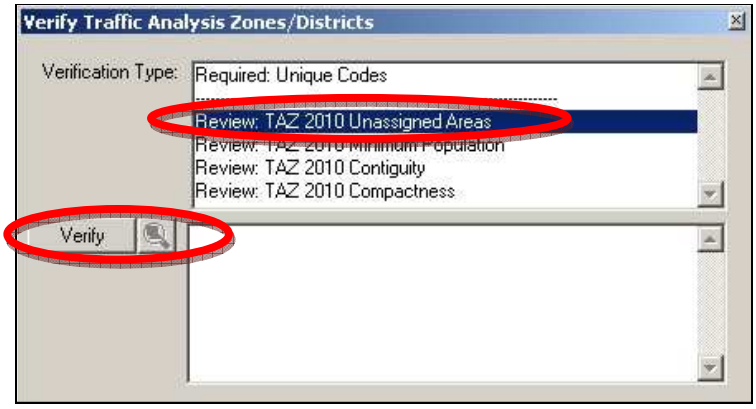
The MTPS TAZ Module will allow the participant to spatially edit geographic data by adding and removing area, as well as creating new and deleting existing TAZ entities. The residential and worker tallies will be updated with each edit that is made to the TAZ entity (Figure 2).

Figure 2. The grey area represents the TAZ selected for editing. The population and worker tallies (red circle) change as blocks are added to or removed from the TAZ.



The MTPS TAZ module contains automated checks for nesting and overlap issues. For example, TAZs must nest within counties and TADs; and TADs must nest within the MPO (TADs can cross county boundaries). A variety of participant run checks will help verify that the delineation has adhered to contiguity, compactness, and minimum population/worker count requirements. The module also verifies that there are no unassigned areas and all assigned codes are unique (Figure 3). Once the MPO or state DOT has completed their work, the module will create a ZIP output file, including new shapefiles and block equivalency files to return to the Census Bureau's Geography Division.

Figure 3. One of the verification checks (unassigned areas) that the MPO or State DOT must run to verify the delineation of the TAZ/TADs.



The Census Bureau's Geography Division will have a booth at the TRB Annual Meeting where there will be a demonstration of the preliminary MTPS TAZ Module.

TAZ Software Training
The FHWA, in coordination with the Census Bureau's Geography Division, will host two web-based TAZ software training sessions (webinars), tentatively scheduled for February 25 and February 28, 2011. The webinars will demonstrate how to use the MTPS TAZ module. The webinar will be recorded and archived on the AASHTO CTPP webinar page. http://ctpp.transportation.org/Pages/webinardirectory.aspx

TAZ Delineation Criteria
Agencies are not required to delineate TAZs or TADs for the CTPP. If an agency chooses not to delineate TAZs for a county, the 2010 Census tracts also will become the TAZs for that county. Even if agencies do not plan to delineate TAZs, they may want to define TADs by aggregating block groups, census tracts, or counties together.

The TAZ business rules are posted at the FHWA webpage: http://www.fhwa.dot.gov/ctpp/tazddbrules.htm

Census Transportation Planning Products (CTPP) AASHTO Update

Penelope Weinberger, AASHTO, Pweinberger@aashto.org

CTPP Oversight Board
The CTPP Oversight Board met on August 25 and 26, 2010. The meeting was chaired by new Oversight Board Chair Jennifer Finch, Colorado DOT. Jennifer Finch is the Director of the Division of Transportation Management and Planning at the Colorado DOT. During the meeting, the draft Mid-Program Report was rolled out. The AASHTO CTPP 2008 to 2012 program is at its midpoint, and highlights of achievements, remaining work, and remaining budget are detailed in the report. The report will be released in late January 2011 and posted on the AASHTO CTPP web site. Highlights include the availability of $1.4 million remaining to commit to CTPP research, training, and data needs as seen fit by the Oversight Board. The next Oversight Board meeting is scheduled for February 2011.

CTPP Training
1. Live Training
AASHTO has participated in a number of conferences and workshops and more are planned. See the listing below for scheduled training. The CTPP program team is always interested in increasing the data users' capacity to use CTPP products. Please contact Penelope Weinberger to discuss your training needs.

Training Date	Venue	Training Format	Training Staff
January 23, 2011 9:00 a.m.-12:00 p.m.	TRB Annual Meeting	Conference Workshop	FHWA, AASHTO, and Census Bureau
February 1, 2011	Michigan State DOT and MPOs Training	In-person presentations	Ed Christopher
February 2011	Florida Model Task Force	In-person presentations	Ed Christopher and Liang Long
February 25 and February 28	TAZ Delineation Software Training for All MPOs and State DOTs	Webinars	FHWA, AASHTO, and Census Bureau
March 21, 2011	Arizona DOT TAZ Delineation and Data Access Software Training	Hands-on computer software training	Ed Christopher and Liang Long
May 8, 2011	TRB Planning Applications Conference	Workshop	Elaine Murakami and Ed Christopher

2. Electronic Training

Five webinars are archived and accessible on the AASHTO CTPP webpage: http://ctpp.transportation.org/Pages/webinardirectory.aspx. Five eLearning modules are developed or under development and will be made available at: http://ctpp.transportation.org/Pages/elearningmodules.aspx. The five topics covered are:

1. Census Transportation Planning Products (CTPP) Based on American Community Survey (ACS) Data;
2. The American Community Survey (ACS) as it relates to CTPP;
3. What makes ACS CTPP tables different from Long Form CTPP tables;
4. Geography; and
5. Margins of Error and Standard Error.

CTPP Five-Year ACS Data Products

The first CTPP using ACS with small area tabulation will use ACS records from 2006-2010. AASHTO has been working with the user community to develop a table request. AASHTO is now working with Westat (the contractor for the NCHRP Project 08-79, "Producing Transportation Data Products from the American Community Survey that Comply with Disclosure Rules") to generate a final request. The data are expected to be released in 2012.

CTPP Web Site: http://ctpp.transportation.org

Data Conference

AASHTO's CTPP program is jointly sponsoring TRB's Using Census Data for Transportation Applications Conference. AASHTO's partners are FHWA, FTA, and RITA. The Conference is scheduled to be held October 27-29, 2011 at the Beckman conference center in Irvine, California.

Calls for papers, posters, and sessions will be developed based on the following conference objectives:

- Disseminate the results of current research focusing on gaps between needs and products;
- Share practitioner experiences using census and other data sources;
- Define strategies for practical improvements in data use for current and emerging data needs; and
- Identify resources and approaches needed, including funding, staffing and training, and dissemination and accessibility to data.

We expect the conference to be an excellent resource to the transportation data user community.

Commutation Flow: CTPP 2000, ACS and CTPP, and LEHD-OTM

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Presently, the New York State Department of Transportation (NYSDOT) has three sources available on commutation flow:

1. The 2000 Census Transportation Planning Package (CTPP) based on the decennial Census Long Form, about 17 percent of housing units;
2. Census Transportation Planning Program (CTPP) based on the American Community Survey (ACS) three-year file 2006-2008, approximately seven percent housing units in the sample over three years; and
3. Longitudinal Employment Household Dynamics On-the-Map (LEHD-OTM), which is available annually, based on the Quarterly Census of Employment and Wages (QCEW) (formerly ES202) and other administrative records.

Each of these three datasets presents a challenge to the transportation community in terms of which snapshot of commutation flow best meets our needs and is the most representative. The Census 2000 Long Form and the ACS are sample surveys of housing units and include all workers who went to work. Because of vacations, illness, and other temporary absences, it is estimated that workers "at work" may be about 2 percent lower than a count of all workers, and about 6 percent of workers have multiple jobs.[1] The LEHD-OTM uses QCEW which uses administrative records of workers covered by unemployment insurance, and does not include self-employed and some other classes of workers, estimated at about 10 percent of all employment. There is an increasing demand for data at detailed geographic granularity, and survey data with small samples may not be sufficient to meet that need.

The lure of LEHD-OTM is that it provides data for home and work pairs synthesized down to the block-level flow and is, therefore, very attractive for zonal analysis, especially since it is updated regularly. However, as they say, "the devil is in the details." Several issues with LEHD-OTM already have been identified:

- Accuracy of workplace location. FHWA has noted that a home office is often reported for all workers, rather than individual locations (multiple work sites) (http://www.fhwa.dot.gov/planning/census/lehdonthemap.htm). For example, this occurs for school district with its various local schools, or a supermarket chain with many retail locations. The employment location for an individual may show up as the home office so the workplace location maybe inaccurate.
- Assignment model based on data from Minnesota and documentation on validation of this model to other states cannot be found. Minnesota requires employers to fully report workplace locations for businesses with multiple work sites.

Today, the Internet enables us to easily access data through Google searches or web interfaces such as American Fact Finder (AFF) or LEHD on the Map. But the ease of finding data is not matched with finding caveats about the data source. Sadly, it is this author's observation that ease of access to information via the Internet may be causing a problem because people assume that the data are correct and bypass any documentation.

We decided to conduct a review of the 2006 LEHD-OTM and compare it with other sources, including the CTPP2000 and the 2001 NHTS. A number of specific tests were done to look at the flow for each county from the top 5, 10, and 15 originating counties. When comparing the LEHD-OTM to the CTPP 2000 findings included:

- The top origin/destination pairs for many counties did not match.
- The internal county flows were often much lower in the LEHD-OTM compared to the CTPP2000, even after adding in an

[1] Chuck Purvis in CTPP Status Report (May 2003) http://www.fhwa.dot.gov/ctpp/sr0503.htm (accessed 12/23/2010).

estimated 10 percent of self-employed, who were assumed to be more likely to work in their own county.

When comparing the LEHD-OTM to the 2001 NHTS:

- The 2001 NHTS has about 15 percent of home-to-work trips exceeding 20 miles. The LEHD-OTM has a much larger proportion of home-to-work pairs exceeding 20 miles.

Usual county-to-county flow pairs from the LEHD-OTM which were not observed in the 1990 or 2000 CTPP suggested that the results in New York State had a similar problem with reporting of home and district office for the reporting of employment.

Based on these differences, a proposal for further examination of the LEHD-OTM home-to-work flows in other states besides New York was submitted to the NCHRP 08-36 program. This proposal was selected for funding, and Task 98 currently is underway by Cambridge Systematics.

In late August 2010, the CTPP three-year file which uses 2006-2008 ACS became available. NYSDOT decided to examine how the three-year data compared with the flow data it had posted on its web site for the 1990 and 2000 CTPP https://www.nysdot.gov/divisions/policy-and-strategy/darb/dai-unit/ttss, under the heading Journey to Work Interactive Application. This webpage was developed to assist our regional staff in easily accessing the Journey to Work data.

We decided to compare the three sources of county-to-county worker flows. Comparing Census 2000 with the CTPP 2006-2008 estimate of flow requires the use of the Margin of Error (MOE) because the ACS sample is so small compared to CTPP2000. In reality, the MOE for the CTPP2000 flow data also should be used. Perhaps the LEHD-OTM also should include an MOE measure, since it is a synthetic universe based on QCEW, combined with administrative records, with model-based assignments of matches between workers and business establishment addresses. But unfortunately, this is not available either. It would be best if we were able to provide a convergent validation between the sources that would give a snapshot of the data so the elements that do not match could be culled out and further analyzed. The CTPP 2006-2008 is limited to counties with over 20,000 population, compared to CTPP2000 which covers all counties. Figure 4 shows some results of the comparison across three data sources for Queen County, New York.

Figure 4. Sample Results of Journey to Work Flow Comparison – Queen County, New York

Destination	*Origin*	*2000*	*2006 LEHD*	*[*	*ACS 2006-8*	*ACS +/- Margin of Error*	*]*
Queens County, New York							
	Queens County, New York	367825	215397	*[*	446035	7046	*]*
	Kings County, New York	62255	74265	*[*	70965	2632	*]*
	Nassau County, New York	66085	57076	*[*	70255	2755	*]*
	Suffolk County, New York	25160	22304	*[*	24885	1584	*]*
	Bronx County, New York	17645	29837	*[*	20690	1669	*]*
	New York County, New York	20120	24849	*[*	20040	1880	*]*
	Richmond County, New York	5630	7267	*[*	6395	814	*]*
	Westchester County, New York	6035	9369	*[*	5205	694	*]*
	Bergen County, New Jersey	3855	3773	*[*	4210	617	*]*
	Hudson County, New Jersey	2365	2560	*[*	2065	452	*]*

Why is such a three-way comparison necessary? When methods are complex, different, and sources as well as definitions vary, how these factors impact the results is more important to people than their methods of construction. If a data point looks right (as in agreeing with CTPP 2000), or if the differences are perceptibly low, then one can conclude that the data are correct. However, if the opposite is true, than this also must be checked.

While NYSDOT was in the process of analyzing these three data sources, we learned that one of our metropolitan planning organizations (MPO) was in the process of updating their regional transportation model. Their consultant was using the LEHD-OTM data and was experiencing some issues with trip generation and assignment to the network. The mere fact that they were encountering problems in the block-level detail that LEHD-OTM could provide suggested that at a minimum, some comparison should be undertaken to illustrate where the flows seemed to be comparable and where there were significant discrepancies. The comparison process enables us to shine a light on where things work, and also where they do not work, and enables people to ask questions about the reasons the numbers are different. We must rely on available data. Therefore, having a full understanding of how well it works can shine a light on any problems that may need to be fixed. NYSDOT's web link to this comparison analysis is located here: https://www.nysdot.gov/divisions/policy-and-strategy/darb/dai-unit/ttss/cttp_acs.

Most of the relevant caveats are listed towards the bottom of the page.

We found that although the counts may vary, when the O&D analysis was done as proportional shares, the data looked more comparable. Therefore, one of our recommendations is that using proportional shares to compare across these data sets may be more useful than comparing counts of workers. We should keep in mind that people often inquire about size, share, and change for many measures. We are often asked for comparative data; for example, what is the commutation flow between Queens and Manhattan, how does it compare with the other counties within NYC, and how has the value changed over time. The issue of assuring that the data are reliable, representative, and can be used must be demonstrated. Equally important is that the end users need to understand the impact of small samples on their decisions.

CTPP and ACS Schedule

Ed Christopher, FHWA Resource Center Planning Team, edc@berwyned.com

Data Product	Planned Release Date
Three-Year CTPP (2006-2008 Data)	January 2011
Three-Year ACS (2007-2009 Data)	January 2011
2010 TIGER Files (new Block, Block Group, and Tracts)	Flow Basis completed by end of February 2011
2010 Census Population Counts for All Census Geography (PL 94-171)	By April 1, 2011
TAZ/TAD Delineation Software Deployed	March through April 2011
TAZ/TAD Delineation Completed	June to early July 2011
2010 Census Summary File 1	June to August 2011
New PUMAs Defined	Fall 2011
ACS (2010), ACS (2008-2010), and ACS (2006-2010)	Fall 2011
New Urban Areas Released	Spring 2012
Five-Year CTPP (2006-2010)	Fall 2012
TIGER with Urbanized Areas and Urban Clusters	Fall 2012

NCHRP 08-36, Task 98 – Improving Employment Data for Transportation Planning

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Project Overview

High-quality employment data, including workplace location, industry type, and number and geographic distribution of workers, are critical to transportation planning and policy analysis. For several decades, transportation planners have relied heavily on journey-to-work data collected as part of the decennial Census Long Form to obtain workplace location and distributions of home-to-work trips. However, the replacement of the 2010 decennial Census Long Form questions by the continuous sample American Community Survey (ACS) has raised concerns within the transportation planning community about the adequacy of the sample size to provide reliable data on workplace locations and home-to-work flows. Consequently, alternative data sources are being examined.

Two public sources of employment data are the Bureau of Labor Statistics' (BLS) Quarterly Census of Employment and Wages (QCEW), and the Census Bureau's Longitudinal Employer Household Dynamics "On the Map" (LEHD-OTM) data. Although neither of these databases were developed specifically for transportation planning purposes, they each hold significant promise. However, many potential users in the transportation community are unfamiliar with these data sources, and lack key information on how the data was collected, limitations and caveats on use, or even where to obtain the data.

The purpose of this research study is to develop a guidebook that provides key information for transportation planners on the QCEW and LEHD-OTM data with respect to how they are collected, how to access and use the data, and their uses and limitations for transportation planning applications. Additionally, the guidebook will identify opportunities for improving the underlying data.

The research study is approximately halfway completed, with a scheduled completion date of July 2011. Work to date has focused on:
1) a comparative review of publicly available QCEW and LEHD-OTM data products;
2) preparing for interviews of selected state employment security agencies regarding current agreements and issues in sharing more detailed employment data with other state and local agencies, particularly state DOTs and MPOs; and 3) creating a nationwide county-to-county database of home-to-work flows from the LEHD-OTM.

NHTS Version 2.0 Released

The Federal Highway Administration announced the enhanced 2009 NHTS data (Version 2.0) in November 2010. The enhanced NHTS data features improved methods of processing outliers and population controls using the 2008 American Community Survey.

The Version 2.0 data file is now available for download on the On-Line Analysis Tools page at http://nhts.ornl.gov/. The On-Line Codebook Browser has been updated and the User's Guide is available at the Publications page at http://nhts.ornl.gov/.

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CTPP Listserv: http://www.chrispy.net/mailman/listinfo/ctpp-news
CTPP Web Site: http://www.dot.gov/ctpp
FHWA Web Site for Census Issues: http://www.fhwa.dot.gov/planning/census
2005-2007 ACS Profiles: http://ctpp.transportation.org/profiles_2005-2007/ctpp_profiles.html
AASHTO Web Site for CTPP: http://ctpp.transportation.org
1990 and 2000 CTPP Data Downloadable via Transtats: http://transtats.bts.gov/
TRB Subcommittee on Census Data: http://www.trbcensus.com

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CTPP Listserv

The CTPP Listserv serves as a web-forum for posting questions, and sharing information on Census and ACS. Currently, over 700 users are subscribed to the listserv. To subscribe, please register by completing a form posted at: http://www.chrispy.net/mailman/listinfo/ctpp-news.

On the form, you can indicate if you want e-mails to be batched in a daily digest. The web site also includes an archive of past e-mails posted to the listserv.