



CTPP Status Report



December 2015



U.S. Department of Transportation
Federal Highway Administration (FHWA)
Bureau of Transportation Statistics (BTS)

Federal Transit Administration (FTA)
AASHTO Standing Committee on Planning
TRB Census Subcommittee

Census Transportation Planning Product (CTPP) Update

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The CTPP Oversight Board will be meeting in February in Atlanta. The purpose of this special meeting is to design an implementation plan for the strategic plan and mission developed as a result of the Board's last special meeting in Dallas in December, 2014. It is critical that the CTPP Technical Service Program serves its users as best as possible. This meeting is key in allocating resources appropriately. This is YOUR program; if you would like to have some input on the direction, services, or general operating practices of the CTPP now is the time to let me know.

The board is currently soliciting for two new State and one new MPO members, with new jobs, new positions and impending retirements we are seeking a state member in each of AASHTO regions 2 (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia) and 4 (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wyoming), and a large Northeastern MPO.

Please let me know if you are interested in the results or outcomes of our annual

meeting, or any other item. As always, I am open to your comments and suggestions. Please contact me at pweinberger@ashto.org.

2012-2016 CTPP Tabulation Reduction Update

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The Census Bureau has directed that the special tabulation for the next 5-year (2012-2016) CTPP data product be approximately one-third the size of the 2006-2010 CTPP tabulation. Additionally, there is a limit to the number of tables that can include all levels of geography; most tables will be produced at census summary levels of place, Minor Civil Division (MCD) (for strong MCD states), County, Public Use Microdata Area (PUMA), State, Metropolitan Statistical Area (MSA) (and principal city), nation and the Traffic Analysis Zones (TAD) custom geography. The Census Bureau suggests that no more than 30 – 35 tables be generated at all geographies, including Census Tract and Traffic Analysis Zone (TAZ).

Removing specific tables should be based on the priorities of data users using objective measures such as the number of downloads per table, or the number of users who identify a table as a priority. If a table is removed due to limited usage and it is an

iterated table with multiple collapses, other iterations should be considered for removal.

To help determine which tables to retain or eliminate in the 2012 to 2016 CTPP dataset, we analyzed user activities in the CTPP Data Access Software webpage and conducted multiple surveys among CTPP users and Table Specification Subcommittee members. Additionally, the ratio of estimates to Margin of Error (MOE) was assessed across tables and geographies as a reference for table quality. If a table displays a high ratio of estimates that have MOE to estimate ratio over 65 percent or has a high ratio of missing or null cells, it was carefully evaluated before being retained.

Using a combination of efforts outlined above, we proposed a reduced tabulation and hosted a series of “Town Hall” meetings in November 2015 to collect input on the elimination of tables in the CTPP. Additional input came from power users; those who download data from our FTP site. In these meetings we presented the methodology used to determine if tables should be removed based on usage, or if they are duplicative - either within the CTPP or with standard ACS products, and are reliable. Meeting participants will send comments by December 1st, at which time we will compile input and finalize the reduced tabulation list. The “Town Hall” meeting web room will be open until we have the proposed table list for 2012-2016 CTPP. Current proposed reduced tabulation and “Town Hall” meeting presentation slides are available for download in the web room.

The final proposed 2012-2016 CTPP tabulation list will be submitted to American Community Survey Office ACSO for Disclosure Review Board review by early 2016, with the next CTPP tabulation available to users in 2018 or 2019, depending on the Census Bureau production schedule.

Please email Penelope Weinberger pweinberger@aathto.org if you are interested in the 2012-2016 CTPP tabulation or have any questions.

Measuring Change in Transit Ridership for a New Mode Using ACS:

The Case of Hudson Bergen Light Rail and Light Rail Overall

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This article presents some of the issues associated with measuring the impacts of a major new transit capital investment, especially when that investment is in a mode that is not currently identified as a choice in the American Community Survey or the Census Journey to Work. This is the case for a new, Light Rail Line (LRL) that was constructed and opened over a 6 year period, the Hudson-Bergen Light Rail Line (HBLR) in Hudson County, Northern New Jersey. This is a 17 mile long LRT line that opened in eight different stages beginning in April 2000. All but one station was opened by winter 2006, when the 2006-2010 ACS data was collected. The line goes from the city of Bayonne through Jersey City, NJ. The downtown area of Jersey City has been the location of the construction of almost 15 million Square feet of Class one office space being constructed from the mid-1990’s through the late 2000’s. The same area also added nearly 2 million square feet of retail space and many thousands of dwelling units. The HBLR line directly serves this downtown area, along with connections to Manhattan via three rapid transit lines of the Port Authority of NY & NJ known as PATH. Several ferries also provide connections from the HBLR to Manhattan. NJT rider surveys in the mid-2000’s indicate that about one third (33 percent) of HBLR travel was to Manhattan, and over 40 percent was to downtown Jersey City.

In assessing the impact of the HBLR on work travel, it was decided to focus on work travel to the Downtown Jersey City area. Travel to Manhattan is hard to segregate out, as the HBLR is a connecting mode to the rapid transit and ferry systems. Focusing on travel to Downtown Jersey City provides a clear depiction of changes in transit ridership, it was thought that a clearer picture of changes in transit ridership would be evident. The one major problem encountered is that users of HBLR responded to multiple options to describe their trip. The majority of survey participants checked railroad or subway/elevated to describe their mode of travel. However, a few checked “Other”, which cannot be quantified, and a limited number checked streetcar or trolley. This

case study illustrates the challenges of using ACS to track Light Rail usage for work travel. Since it is not explicitly shown as an option, the choice of mode is scattered among a few modes.

Table 1 shows the Census JTW 2000 travel to Downtown Jersey City from the three towns (Bayonne, Jersey City and Hoboken) which have access to a majority of Light Rail service. In 2000, the LRT had just opened for service, so there were practically no riders at the time using LRT because the opening was a week after the census was taken. Table 2 shows travel to Downtown Jersey City from the same towns using ACS 2006-2010 data, which covers the period when all but one station (8th Street in Bayonne) was open to service.

Town	Auto	Bus	Rail	Other	Total Workers
	(Includes Carpool)	(Includes Trolleybus)	(Includes Railroad, Subway/Elevated)	(Includes walk, bike, Taxi, Other)	
Bayonne	1,120	257	46	34	1,458
Jersey City	4,557	2,488	644	1,892	9,579
Hoboken	264	37	361	27	689
TOTAL	5,942	2,782	1,051	1,953	11,726
Mode Share	50.7 percent	23.7 percent	9.0 percent	16.6 percent	

Table 1 JTW Year 2000 to Downtown Jersey City

Town	Auto	Bus	Rail	Other	Total Workers
	(Includes Carpool)	(Includes Trolleybus)	(Includes Railroad, Subway/Elevated)	(Includes walk, bike, Taxi, Other)	
Bayonne	1,176	464	275	53	1,968
Jersey City	5,327	4,279	954	3,155	13,715
Hoboken	402	190	577	219	1,398
TOTAL	6,905	4,933	1,806	3,398	17,081
Mode Share	40.4 percent	28.9 percent	10.6 percent	20.1 percent	
Change from 2000	+963	+2,151	+755	+1,445	+5,355

Table 2 JTW Year 2006-2010 Downtown Jersey City

HBLR ridership increased from about 2,000 riders per day in 2000 to about 40,000 riders in 2010 and 50,000 daily riders in 2015. These are all in trips, so the number of people is about one half this number. As is shown in Tables 1 and 2, auto share overall decreases by 10 percentage points from about 50 percent to 40 percent. Despite a 45 percent growth in work trips to Downtown Jersey City from these areas, auto travel only increased 16 percent. However, rail share only increases by 1.6 percent points, with bus and other modes, especially walk and other increasing (mostly walk). This trend shows that over this time period there was a shift to transit. However, because there is no light rail mode, the census data can only estimate a partial increase in work travel to Downtown Jersey City. Some respondents may have selected “Other”, and because the census is based on longest mode, some bus to light rail trips have been classified as bus. Overall, the number of workers to Downtown Jersey City by rail transit indicates a shortfall in the ACS data because of this lack of a consistent mode definition for LRT and issues with intermodal trips.

Looking at just the subset of Bayonne to Downtown Jersey City travel, auto mode shares declined from 77 percent in year 2000 to 60 percent in 2006-2010. Rail mode share increased from 3 percent to 14 percent and bus mode share increased from 18 percent to 24 percent between 2000 and 2006-2010. Since NJ Transit cut bus service from Bayonne to Downtown Jersey City (most express trips were eliminated), the increase in bus share seems puzzling. The margins of error explain part of this difference, but there could be other factors that could play a role.

New Jersey Transit staff confronted similar issues with another Light Rail Line, the 34 mile River Line between Trenton and Camden in southern New Jersey. A similar

issue of riders selecting railroad and subway/elevated was observed, however this area had no history of rail transit since the 1960’s, there was an increase in “Other” modes. This was probably because a significant number of people said on their ACS survey “Light Rail”, which was coded in most cases to the “Other” mode.

There are now over 25 light rail systems in the United States. Back in 1980 there were only six to seven light rail systems, some of which were referred to as “trolleys”. The issue of using ACS data for this mode will require research and detailed examination of modal data until 2018. That is when the ACS will finally incorporate a separate light rail mode, i.e., light rail or trolley in the journey to work question on the ACS survey. The Census 2020 will have three years of Light Rail data and two years without this detail. However this could show an “increase” in work related transit travel, depending on individual examples. Until then planners should be cognizant of this issue and investigate the modal data within a Light Rail Corridor to see if the ACS data or some combination is needed to estimate transit work ridership. This is why on-board surveys are a necessary companion to any ACS data.

Chattanooga CTPP / AirSage Reasonableness Comparison

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Cambridge Systematics, Inc. has been working with the Chattanooga Transportation Planning Organization (TPO) to collect and analyze data that are being used for general planning and for the update of the travel demand model to an Activity Based approach. As part of this effort, AirSage cell phone derived Origin Destination data which are being collected and used to assist with model trip

distribution (activity choice) estimation and calibration. The following language describes a comparison made against CTPP Journey to Work data to verify reasonableness.

The AirSage HBW trips were compared with the American Community Survey (ACS) derived Census Transportation Planning Product (CTPP) 2010 Journey to Work trips for the region. The geographic

unit of comparison from the CTPP was the Census TAD (Traffic Analysis District) for Chattanooga. The CTPP data export web portal shown in Figure 1 below was utilized to obtain the TAD data. Figure 2 shows the CTPP TAD used for comparison to the zone structure used for AirSage analysis. Several simplifying assumptions are made in the calculations based on knowledge of nationwide carpooling patterns:

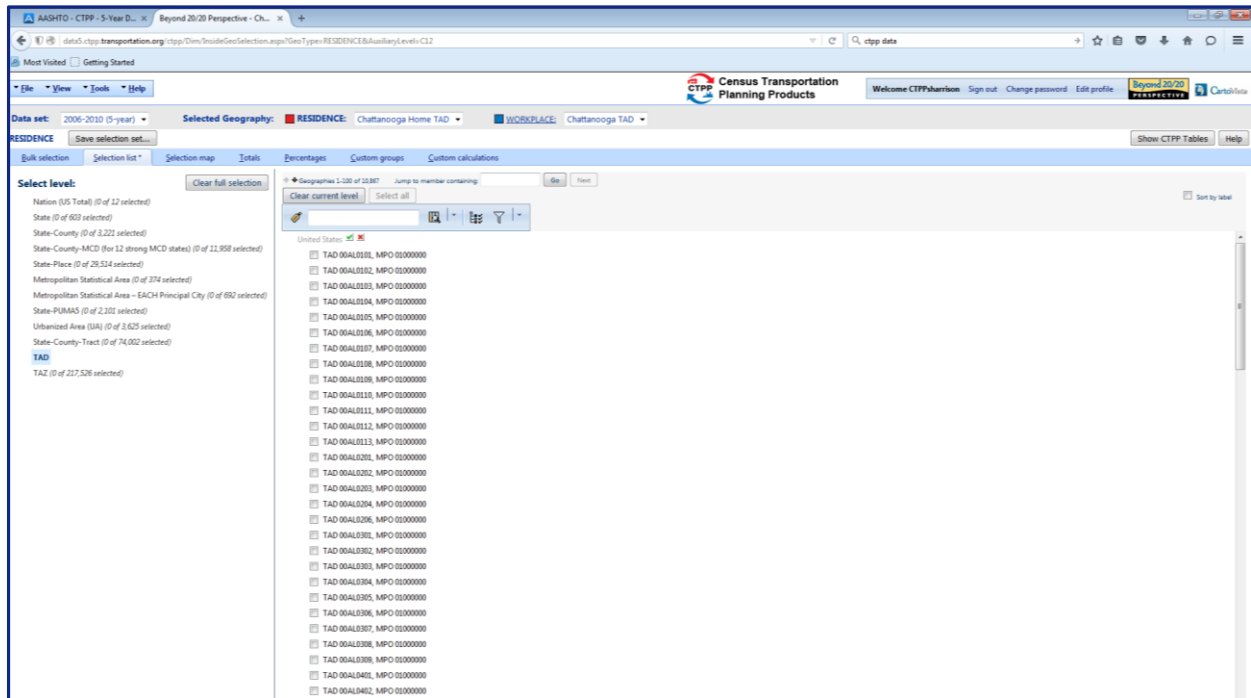


Figure 1 CTPP Web Data Portal

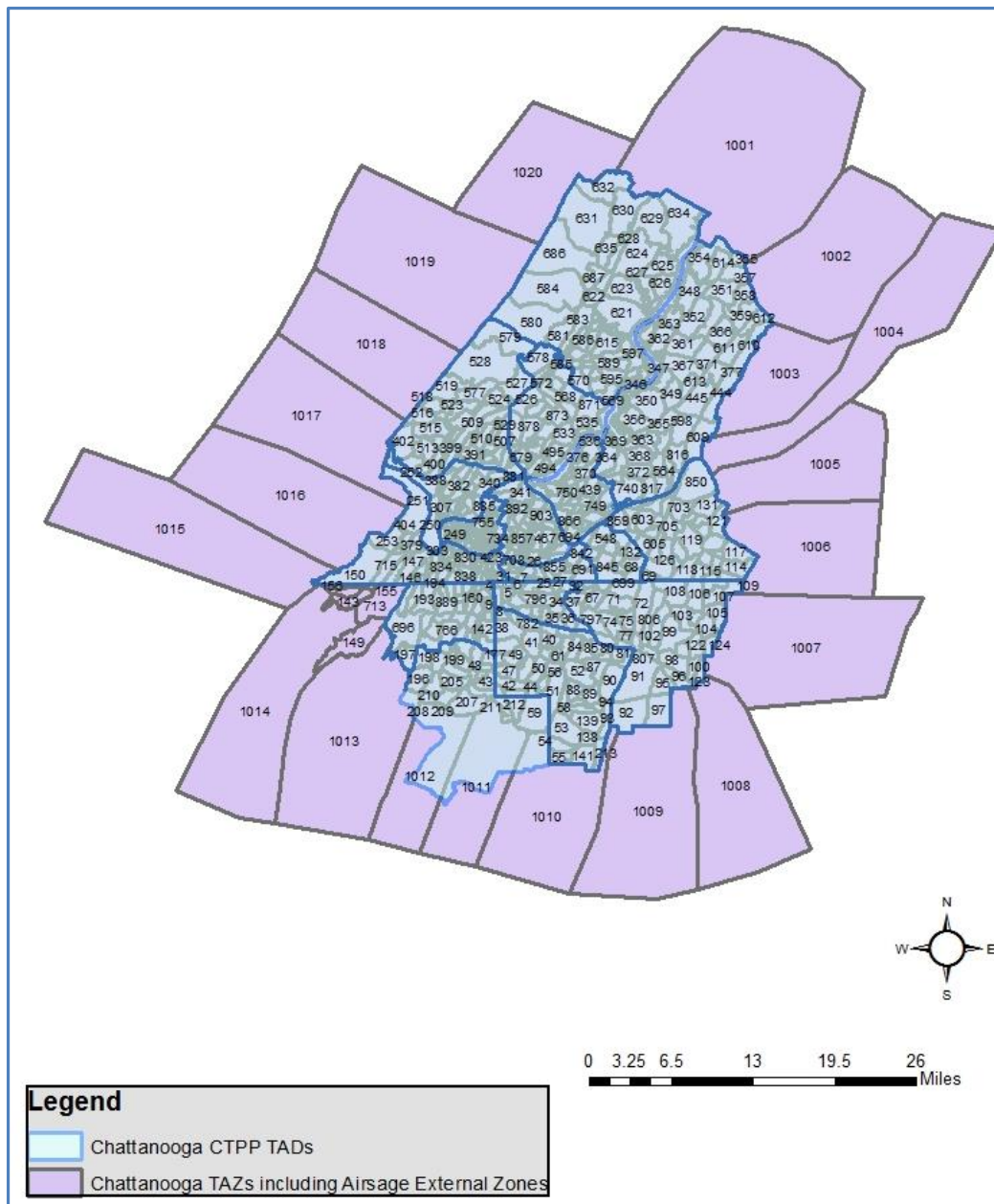


Figure 2 CTPP TAD Geographic Extent

Comparisons were also made against the existing 2010 base year model trip purposes. Results from those comparisons are shown in Table 1. As is shown in the data below, AirSage produces over twice the number of work trips when compared with the CTPP.

Purpose	AirSage (2014)	2010 Model	CTPP 2005 -2010	AirSageTrips/HH	AirSage Trips/Employee
HBW	394,651	253,498	183,979	2.2	1.8
HBO	1,043,880	825,177		5.9	4.8
NHB	892,052	535,705		5.0	4.1
All	2,330,583	1,614,380		13.1	10.8

Table 3 AirSage Trip Comparison

However, the results should be interpreted with caution. There are several differences in assumptions and methodology that can be used to explain this outcome. A few examples include:

- Geographic differences between CTPP origin-destination TADs and the model MPO and external buffer boundary zone areas used in AirSage analysis.
 - Note, the total AirSage geographic extent is larger as shown in Figure 2.
 - Expanding the CTPP TAD extent was not feasible as the CTPP TADs external to Chattanooga are very large and would result in a larger geography.
 - The AirSage data captures a lot of internal traffic in adjoining local areas like Cleveland owing to the shape of the external zone boundaries. These trips will not show up in the CTPP data.
- The AirSage data is 2014 vintage whereas the CTPP data is for the period leading up to 2010.

- AirSage's algorithms for determining trip purposes are not direct replacements for survey data which are generally used to guide model trip generation and distribution development.
- Unlike previous CTPP data tabulations, the ACS-based data are taken over a rolling five-year period of samples. Consequently, there will be differences in the results drawn when compared to previous CTPP efforts.

Further reasonableness checks, unrelated to the CTPP test were undertaken, including test assigning the AirSage trips to the network and factoring the external volumes at boundary areas. Following those tests, and looking at CTPP comparison results etc., it can be concluded that overall the AirSage cell phone O-D data are a useful addition to the suite of tools that can be utilized to assist with model calibration. The caveats as described in the listed bullets should however be considered when choosing to use the data in this manner.

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CTPP 2006-2010 Data: <http://ctpp.transportation.org/Pages/5-Year-Data.aspx>

CTPP website: http://www.fhwa.dot.gov/planning/census_issues/ctpp/

FHWA website for Census issues: http://www.fhwa.dot.gov/planning/census_issues

AASHTO website 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, more than 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 emails to be batched in a daily digest. The website also includes an archive of past emails posted to the listserv.