



CTPP Status Report



May 2014

AASHTO
THE VOICE OF TRANSPORTATION

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 Products (CTPP) AASHTO Update

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Well, no sooner do the data hit the streets and it's time to start thinking about the next data set! The CTPP is deeply into research and training right now. Training is happening all over the country to get users up to speed on the CTPP data product based on 2006-2010 ACS Data. The CTPP Data Access Software tool is used to access the nearly 350 gigs of data, including almost 200 residence-based tables, 115 workplace-based tables, and 39 flow tables (home to work). Watch the CTPP list serve for training dates and locations, you also can request training at your agency by emailing Ed Christopher at ed.christopher@dot.gov or me at pweinberger@aashto.org. There also are lots of electronic resources, helpful videos, cheat sheets, and webinars to help get you to speed (<http://ctpp.transportation.org/>).

The CTPP program submitted three proposals for the NCHRP research program. Topics on data fusion, data transferability and dealing with margins of error were submitted.

The CTPP Oversight Board will meet in May and again in August. The Oversight Board will address budgeting issues, and deciding what data to purchase. The Oversight Board will specify tables for another five-year ACS-based CTPP. We plan to ask for a tabulation using ACS 2012-2016 this time, skipping 2011, since we want to take advantage of the increasing sample that was implemented starting in 2012. We haven't decided whether or not to include another three-year tabulation, but if you have an opinion about it, I'd love to hear it. That's all for now!

Assessing the Utility of the 2006-2010 CTPP Five-Year Data

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Cambridge Systematics is under a contract with AASHTO working on the project of assessing the utility of the 2006-2010 CTPP data. The research objective is to assess common issues encountered in using CTPP data and suggest solutions to those issues.

The research team currently focuses on information gathering from the transportation community in terms of data limitations and issues. For example, several workplace geocoding issues have been identified for CTPP 2006-2010. The tract, including the Pentagon in Washington, D.C. shows 12,000 workers in the 2006-2010 CTPP compared with 30,000 workers in 2000. If you have identified any issues in CTPP data, please contact Liang Long.

The research team will conduct a web survey of Census, CTPP, and ACS data users within transportation agencies and listserv participants and conference attendees followed by a peer exchange. The peer exchange will be used to develop analysis case studies to further evaluate the utility of the CTPP and ACS data.

ACS Content

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The Census Bureau is working on two separate efforts related to changes to the American Community Survey questionnaire.

1. ACS Content Review

As requested by Congress, the Census Bureau is working with other Federal agencies on reviewing the content on the ACS to ensure that only those questions Federal agencies need to accomplish their missions are included. The objective of this review is to minimize the reporting burden on the 3.5 million U.S. households that respond to the survey each year. The Census Bureau will work with Federal agencies to get a better understanding of who uses commuting data and how its uses relate to Federal regulations. The link to the Content Review web site is: http://www.census.gov/acs/www/about_the_survey/acs_content_review/. In May 2014, the Census Bureau plans to post a link on the content review web site for data users to provide their feedback about the individual topics on the questionnaire. The content of the 2016 ACS questionnaire could reflect decisions from the ACS content review process.

2. ACS Content Testing

The Office of Management and Budget (OMB) convenes an interagency group on ACS Content. Through this group, U.S. DOT has submitted recommendations to test revisions to the question on Means of Transportation to Work, specifically to add the phrase “light rail.” In addition, Census Bureau staff have recommended a test to ask about arrival time at work instead of departure time from home.

Question 31: the current ACS questionnaire asks respondents “How did this person usually get to work LAST WEEK?” Currently, light rail is not explicitly reflected in the list of potential responses. Respondents who take light rail currently have to choose from among several categories that could represent the best fit, including almost all of the public transportation categories and the ‘Other’ category (Figure 1).

31 How did this person usually get to work LAST WEEK? If this person usually used more than one method of transportation during the trip, mark (X) the box of the one used for most of the distance.

<input type="checkbox"/> Car, truck, or van	<input type="checkbox"/> Motorcycle
<input type="checkbox"/> Bus or trolley bus	<input type="checkbox"/> Bicycle
<input type="checkbox"/> Streetcar or trolley car	<input type="checkbox"/> Walked
<input type="checkbox"/> Subway or elevated	<input type="checkbox"/> Worked at home → SKIP to question 39a
<input type="checkbox"/> Railroad	<input type="checkbox"/> Other method
<input type="checkbox"/> Ferryboat	
<input type="checkbox"/> Taxicab	

Figure 1. Question 31 from ACS Questionnaire

For the modified Question 31, light rail is proposed to be added to “Streetcar or trolley car” category and the three rail categories in the questionnaire are modified as follows:

- Subway or elevated rail;
- Commuter or long-distance railroad; and
- Light rail, streetcar or trolley.

Question 33: the current ACS questionnaire asks respondents what time they leave home to go to work (Figure 2). This question is characterized as intrusive, as some ACS respondents have complained about privacy and security concerns. Because this information is crucial for transportation planning efforts, the Census Bureau is exploring new ways to obtain similar information about when people are traveling on the nation’s transportation infrastructure. Shifting the focus of the question away from when they leave their home toward when they arrive at work may alleviate some of those privacy concerns while still providing transportation planners with essential information about when commuters are on the road.

33 What time did this person usually leave home to go to work LAST WEEK?

Hour Minute

: a.m.
 p.m.

Figure 2. Question 33 from ACS Questionnaire

How Much Do We Spend on Housing and Transportation?

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Today, housing costs, followed by transportation, are our greatest household expense. But it has not always been this way. A hundred years ago, food was the largest expenditure (in percent) of household expenses, following by housing expenses. Between 1901 and the 1960s, food expenditures declined from 42 percent to 24 percent. The Consumer Expenditure Survey conducted by the Bureau of Labor

Statistics is the source of this trend data (<http://www.bls.gov/opub/uscs/report991.pdf>). Housing expenditures did not exceed food expenditures until the 1960s. Part of this reflects declining household size; family size declined from average of 4.9 persons in 1901 to 3.1 persons in 1960. Housing expenditures increased from 23 percent in 1901 and rose to 29 percent in 1960.

By 1984-1985, housing costs were over 30 percent of expenditures, and transportation costs were now in second place at nearly 20 percent. Food expenditures continued to decline to 15 percent.

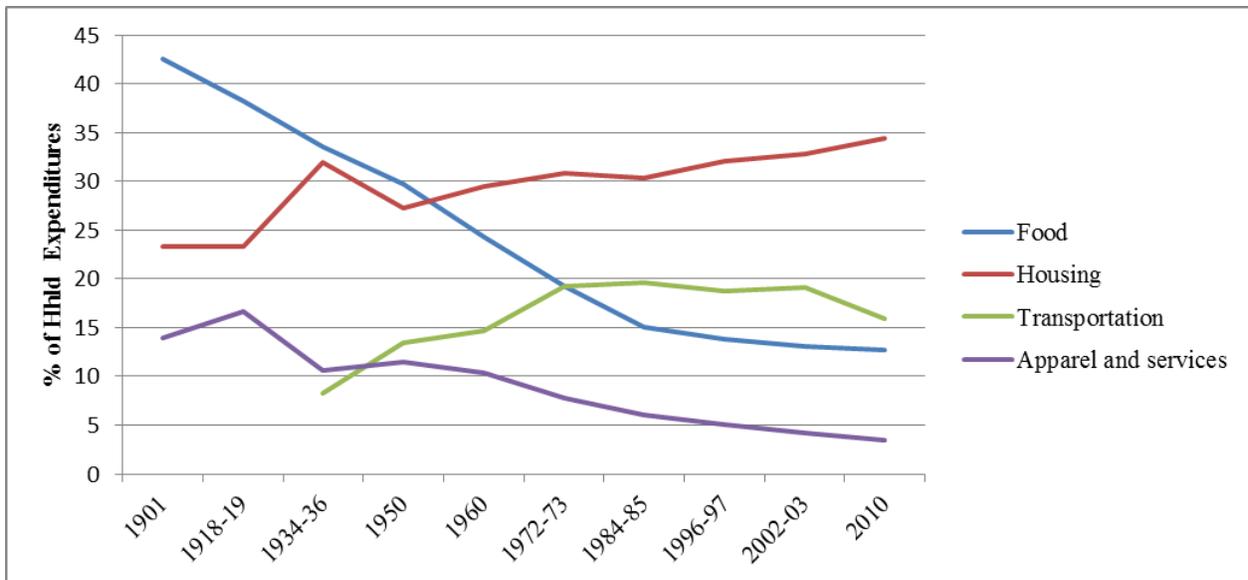


Figure 3. Household Expenditure: 1901-2010

Source: "100 Years of U.S. Consumer Spending" Report 991, May 2006.

Some of the changes that have contributed to these shifts include: the shift from mostly renters to mostly home owners, larger homes, vehicle acquisitions from zero cars, to one car, to more than one car per household, and lower costs for food and clothing.

Table 1 Percent of Home Owners and Household Vehicles: 1901-2010

Date	Homeowners (%)	Households with one or more vehicles (%)
1901	19	–
1934-1936	30	44
1950	48	59
1960	53	73
1972-1973	59	80
1984-1985	63	85
1996-1997	64	85
2002-2003	67	88
2010	66	91

In another BLS report covering the 25-year period (1986 to 2010) found that expenditures for health insurance, personal insurance, and pensions have increased the most (<http://www.bls.gov/opub/btn/volume-1/pdf/a-comparison-of-25-years-of-consumer-expenditures-by-homeowners-and-renters.pdf>).

Santa Barbara County State of the Commute

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The Santa Barbara County State of the Commute Report summarizes commuting characteristics for the Santa Barbara County Association of Governments region, which consists of Santa Barbara County (population 429,200) and its eight incorporated cities taking into account interregional commuting from and to neighboring Ventura and San Luis Obispo Counties. The State of the Commute Report first provides a summary of commuter data and the commuting origin and destination characteristics evident from a comparison of data from the 2000 Census, 2006-2010 American Community Survey Census Transportation

To improve access to their data, the Bureau of Labor Statistics (BLS) now creates Public Use Microdata files that can be downloaded from their webpage. The 2012 Public Use Microdata was released in September 2013. Some of the transportation expenditures that are captured include: new cars and trucks, used cars and trucks, gasoline, oil, tires, insurance, auto repairs, vehicle registration and inspections, bus and taxi fare, and airline tickets. Detailed household and person income are likewise captured. The data are available as SAS, SPSS, STATA, and comma-delimited ASCII files. Instructions for reading into R also are available on the BLS web site.

While detailed geography is not available in the CES, a state field is available in the microdata. Urban area population is used as a tabulation geography, with six different population categories, starting with areas below 100,000, up to 2.5-4.99 million, and 5.0 million and above. In the 2010 Census, one-person households represent 27 percent of all households. About one-third of these one-person households are ages 65 and over. (Source: 2010 Census Briefs: “Households and Families: 2010,” U.S. Census Bureau, April 2012 <https://www.census.gov/prod/cen2010/briefs/c2010br-14.pdf>.)

Planning Products, and the Census Longitudinal Employer-Household Dynamics. The report then details commute flows between all Census Places within the region. In addition, it summarizes and compares travel mode, travel time, and employment by economic sector.

The daily commute to Santa Barbara County is significant, often causing congestion during peak commute periods. Data from the LEHD and CTPP are broadly consistent; indicating that current commuting from Ventura County to Santa Barbara County is approximately 11,360 or 12,316 commuters/day respectively. The LEHD and CTPP indicate commuting from San

Luis Obispo County to Santa Barbara County is approximately 9,554 or 8,245 commuters/day respectively. According to Census data, commuting to Santa Barbara County grew dramatically from 2000 to 2010, by more than 25 percent in the case of commuting from Ventura. By comparison, the number of workers commuting out of Santa Barbara County is far lower, although North County commute flows are roughly balanced. The LEHD indicates com-

muting from Santa Barbara County to Ventura County is approximately 7,865 commuters/day respectively, while approximately 7,834 commute to San Luis Obispo County daily. Outflows from Santa Barbara County to San Luis Obispo County increased by more than 2,000 commuters/day, or some 40 percent, over the 10-year period between 2000 and 2010.

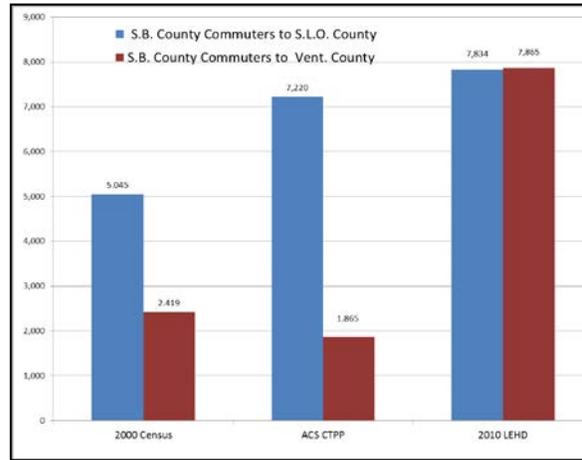
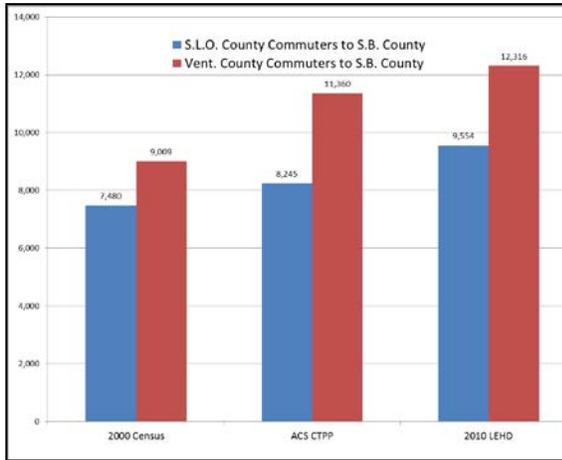


Figure 4. Commuters between Santa Barbara County and San Luis Obispo and Ventura County

Within Santa Barbara County, there also are significant daily commute flows, especially from the North County to the South Coast. The CTPP and LEHD show about 1,000 commute flow from the City of Santa Maria to the City of Santa Barbara. The CTPP and LEHD commute flow from the City of Santa Maria to Orcutt indicates around 1,000-1,100 commuters.

The CTPP commute flows from the City of Lompoc to the City of Santa Barbara indicates 1,915 commuters/day compared to the LEHD's 1,361 commuters. The CTPP commute flow from the City of Lompoc to the City of Goleta indicates 1,115 commuters/day compared to the LEHD's 741 commuters.

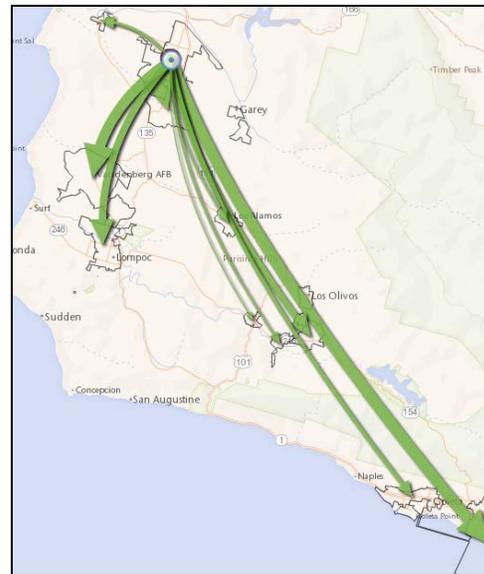


Figure 5. Santa Maria Commuters to Santa Barbara County Places

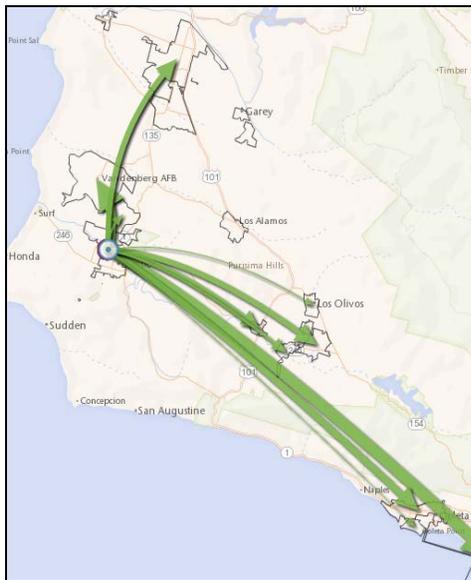


Figure 6. Lompoc Commuters to Santa Barbara County places

Significant differences between the LEHD and the ACS CTPP are indicated for the City of Santa Maria with the LEHD showing a higher number of commuters into the City than the ACS CTPP.

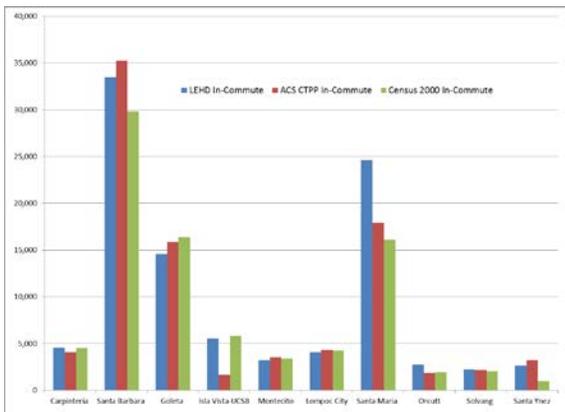


Figure 7. LEHD, ACS CTPP, and Census 2000 inflows Comparison

Significant differences between the ACS CTPP than the LEHD are indicated for the flows from community of Isla Vista/UCSB and the City of Santa Barbara.

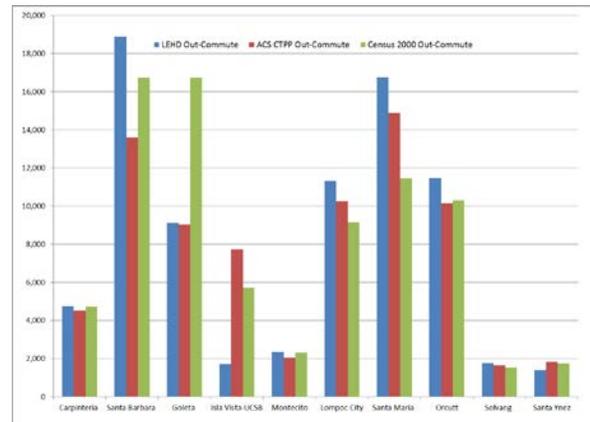


Figure 8. LEHD, ACS CTPP and Census 2000 Outflows Comparison

Countywide the CTPP indicates the highest employment numbers with 201,240 followed by the InfoUSA and LEHD with 185,620 and 167,144 jobs respectively. The LEHD has the lowest employment as it does not include the self-employed workers.

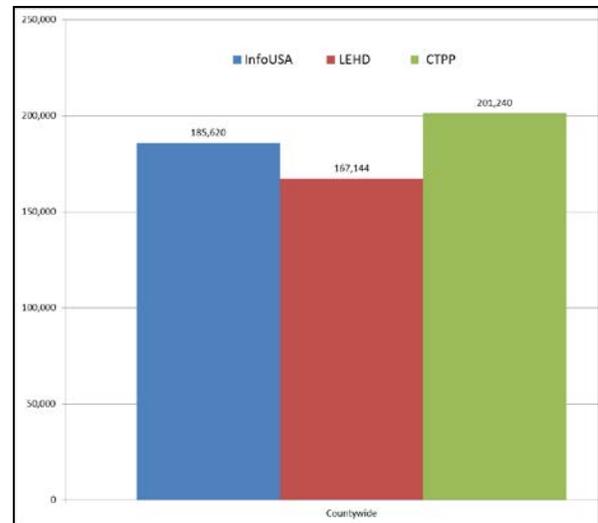


Figure 9. Employment Estimates Comparisons, Countywide, 2010

A comparison by economic sector shows that in most cases the CTPP workplace employment by category is higher, with the exception of agriculture and the arts, and the accommodation and food services categories. There is no armed forces category for the LEHD as it does not count military employees.

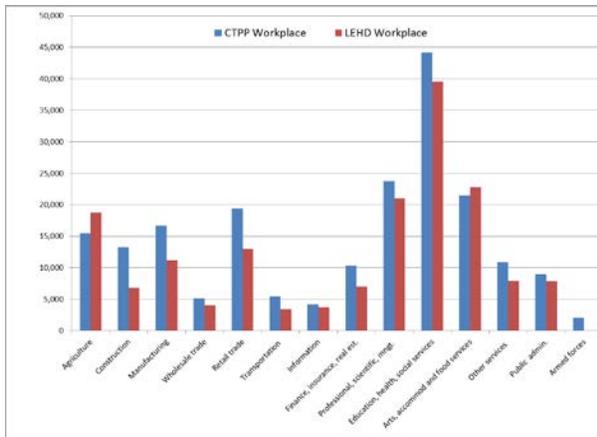


Figure 10. Countywide Comparison of CTPP and LEHD Workplace-Based Employment by Category

A comparison of the jobs/housing ratios indicates that the South Coast and the City of Goleta, specifically, have the highest jobs/housing ratio, ranging from the InfoUSA-based 1.93 to the LEHD-based 1.5 and CTPP-based 1.9. This jobs-housing imbalance and the higher number of south coast jobs drive the regional commute patterns visible in the Census data.

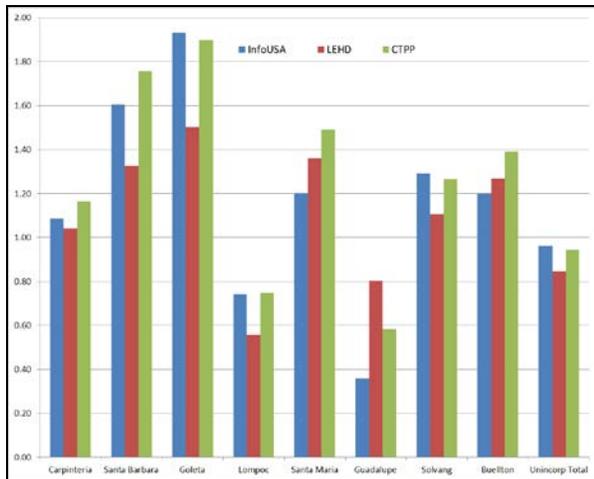


Figure 11. Employment Estimates Comparisons, Countywide, 2010

The full paper is available at:

<http://www.sbcag.org/Meetings/Joint%20TTAC%20TPAC%20JTAC/2014/03%20March%20TTAC.%20TPAC/TPAC/Item%205%20Commute%20Report.pdf>

Using CTPP Data to Improve the Wichita Area Trip Distribution Model

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The Wichita Area MPO (WAMPO) is conducting a model update using numerous data sources, including a household travel survey. CTPP data has served as an additional source of data for model validation. CTPP confirmed that some aspects of the model were working well, but pointed to some problems that were corrected with an improved model process.

For use in this analysis, the CTPP worker flow dataset was scaled to match the total home-based work (HBW) trip total generated by the travel model. This allowed analysis to focus solely on trip distribution patterns, rather than overall trip generation totals. The scaled worker flow data was treated as a production to attraction trip table, aggregated to the Census tract level.

Travel to the CBD

The Wichita central business district (CBD) is home to about 15 percent of jobs in the area. Household travel survey data, CTPP data, and travel model results consistently allocate about 13 to 14 percent of regional commute trip attractions to the CBD. However, the initial modeled distribution of households commuting to the CBD was not consistent with CTPP worker flow data. As demonstrated in Figure 1, initial model results overestimated the amount travel to the CBD from urban areas, while underestimating travel to the CBD from suburban and rural areas.

Comparison of model results to CTPP data prompted improvements to market segmentation by income and addition of an area type variable to the trip distribution model. Later trip distribution model results maintained consistency with regional trip length frequency distributions obtained from the household travel survey, while improving the distribution of commute trips to the CBD.

Travel to and from Urbanized Areas

Like many cities, the Wichita area includes a fairly large urbanized core surrounded by newer suburban development. This urbanized core includes approximately 30 percent of the regional employment and 30 percent of regional households. An exercise similar to that performed for the CBD confirmed the WAMPO model's ability to accurately distribute commute trips to the urbanized area. As shown on the left side of Figure 13, the distribution of modeled commute trips to the urban area are relatively consistent with CTPP worker flow data.

A third exercise evaluated the model's ability to distribute commute trips originating at households within the urban area. As shown on the right side of Figure 13, the model was overestimating travel to the CBD while slightly underestimating the share of trips either staying in the urban area or traveling to jobs in suburban Wichita. This is consistent with the CBD analysis above and helped further guide improvements to the trip distribution model.

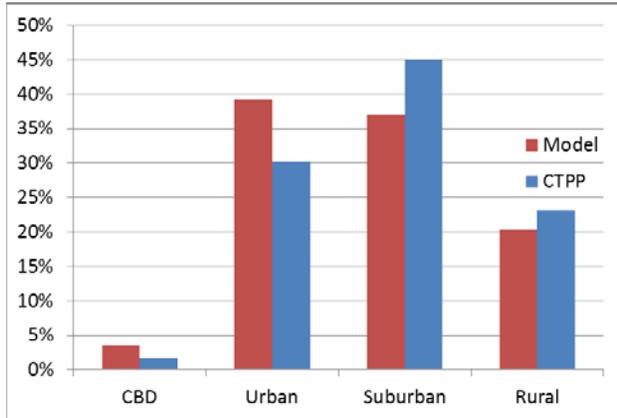


Figure 12. Share of home to work commute trips to the CBD

Source: Initial WAMPO Travel model run and analysis of 2006-2010 CTPP worker flow data.

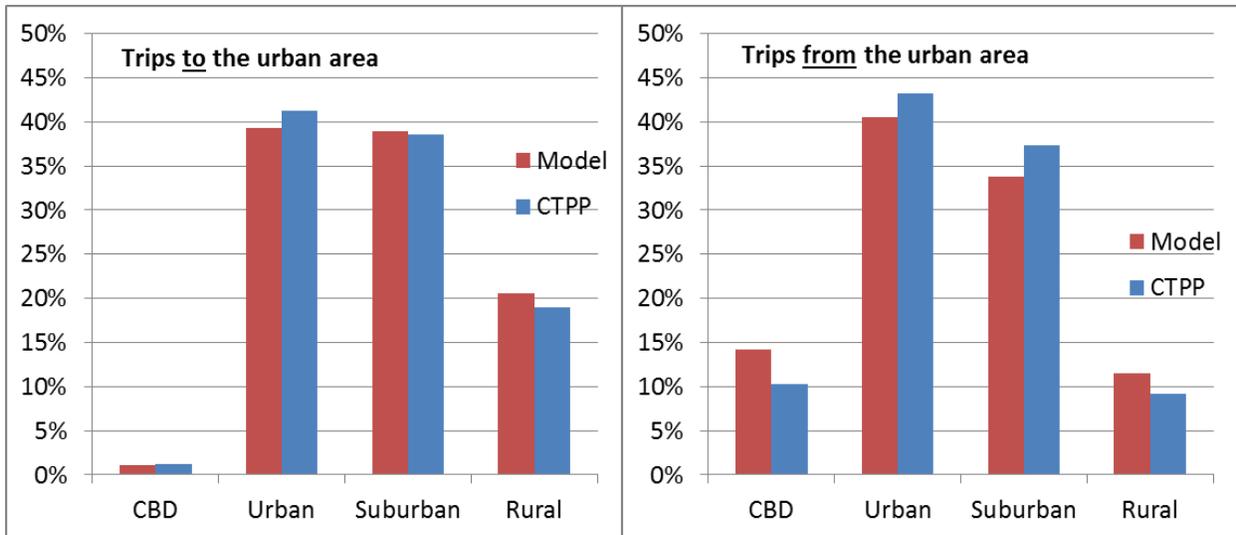


Figure 13. Share of home to work commute trips to and from the urban area

Source: Initial WAMPO Travel model run and analysis of 2006-2010 CTPP worker flow data

ACS Disability Tables

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In 2008, the ACS questions related to disability were significantly revised. Because of this change, small area (tract and block group) data on disability were not available from the ACS until 2013 with the 2008-2012 release. The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination and ensures equal opportunity and access for persons with disabilities. Information on the disability population supports the Federal Transit Administration works to ensure nondiscriminatory transportation in support of the mission to enhance the social and economic quality of life for all Americans.

The questions introduced in 2008 cover six disability types.

- **Hearing difficulty** deaf or having serious difficulty hearing (DEAR).
- **Vision difficulty** blind or having serious difficulty seeing, even when wearing glasses (DEYE).
- **Cognitive difficulty** Because of a physical, mental, or emotional problem, having difficulty remembering, concentrating, or making decisions (DREM).
- **Ambulatory difficulty** Having serious difficulty walking or climbing stairs (DPHY).
- **Self-care difficulty** Having difficulty bathing or dressing (DDRS).
- **Independent living difficulty** Because of a physical, mental, or emotional problem, having difficulty doing errands alone such as visiting a doctor's office or shopping (DOUT).

ACS 2008-2012 disability tables can be accessed via Census Bureau [American Fact Finder](#). The most popular disability tables include:

- Table B18101 sex by age by disability Status (with a disability and no disability);
- Table B18102 sex by age by hearing difficulty;
- Table B18103 sex by age by vision difficulty;
- Table B18104 sex by age by cognitive difficulty;
- Table B18105 sex by age by ambulatory difficulty;
- Table B18106 sex by age by self-care difficulty; and
- Table B18107 sex by age by independent living difficulty.

Table 2 shows totals for the U.S. for accumulated disabilities (one disability, two or more disabilities, or no disabilities). Table 3 is an example of a specific disability, in this case, hearing, by sex and age.

Table 2. Age by Number of Disabilities for the U.S. (ACS 2008-2012 Table C18108)

	United States		
	Estimates	Percent	Margin of Error
Total:	303,984,241	–	±10,092
Under 18 years:	73,835,298	–	±6,591
With one type of disability	2,192,617	3%	±12,309
With two or more types of disability	760,282	1%	±5,862
No disability	70,882,399	96%	±14,602
18 to 64 years:	190,790,030	–	±9,626
With one type of disability	10,356,684	5%	±31,584
With two or more types of disability	8,772,170	5%	±36,178
No disability	171,661,176	90%	±55,983
65 years and over:	39,358,913	–	±5,341
With one type of disability	6,398,168	16%	±13,903
With two or more types of disability	8,071,117	21%	±23,533
No disability	24,889,628	63%	±23,712

Table 3. Sex by Age by Hearing Difficulty (ACS 2008-2012 Table B18102)

			Margin of			Margin of
	Estimate	Percent	Error	Estimate	Percent	Error
Total:	303,984,241		±10,092			
	Male:			Female		
	148,303,859		±11,577	155,680,382		±8,273
Under 5 years	10,289,512		±2,945	9,845,628		±3,225
With a hearing difficulty	59,873	1%	±1,603	44,227	0%	±1,758
No hearing difficulty	10,229,639	99%	±3,232	9,801,401	100%	±3,719
5 to 17 years	27,445,565		±4,789	26,254,593		±4,439
With a hearing difficulty	192,649	1%	±3,076	151,421	1%	±2,485
No hearing difficulty	27,252,916	99%	±5,072	26,103,172	99%	±4,632
18 to 34 years	34,674,557		±10,418	35,275,744		±6,745
With a hearing difficulty	332,785	1%	±4,881	247,005	1%	±3,997
No hearing difficulty	34,341,772	99%	±9,674	35,028,739	99%	±6,776
35 to 64 years	58,739,967		±6,919	62,099,762		±7,786
With a hearing difficulty	2,163,377	4%	±11,464	1,209,336	2%	±10,083
No hearing difficulty	56,576,590	96%	±14,685	60,890,426	98%	±14,124
65 to 74 years	10,117,379		±3,487	11,649,972		±3,368
With a hearing difficulty	1,308,399	13%	±6,259	678,982	6%	±5,127
No hearing difficulty	8,808,980	87%	±7,083	10,970,990	94%	±6,125
75 years and over	7,036,879		±3,270	10,554,683		±3,936
With a hearing difficulty	1,923,060	27%	±6,766	2,048,713	19%	±9,230
No hearing difficulty	5,113,819	73%	±7,194	8,505,970	81%	±10,161

CTPP Contact List

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

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

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

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, 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.