CTPP Status Report

September 2014

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

Penelope Weinberger, AASHTO,
Pweinberger@aashto.org

The ongoing CTPP technical services program started on July 1, 2014 and is nearly fully funded through June 2019. The CTPP Oversight Board met for its annual in person meeting in Boise, Idaho, in late August. It was the first annual meeting to take place under the new ongoing program. The Board has a lot on its plate right now, developing a specification for the next special tabulation, which is envisioned to be based on the American Community Survey 2012–2016 data set. The most recent CTPP used 2006-2010 ACS samples, so you may have noticed that 2011 is skipped. By using 2012-2016 ACS, the CTPP will take advantage of the increased sample size of the ACS, fully implemented in 2012, and the increased computer opt-in responses. The Board also discussed expanding the CTPP program mandate; should we look at other data sets and sources, how can we incorporate within the 5-year CTPP program budget of about $4.5 million? The status of the NCHRP research tasks, Commuting in America, and the CTPP Utility Project were included in the meeting agenda.

We have been some serious road warriors lately; have you come to a CTPP training session? We've been up and down the west coast, to the Southeast and a few points in between. We've done 14 in-person full day trainings, and about nine presentations and workshops in 2014 alone! If you would like to schedule an in-person workshop or web-based training, please contact me.

In July, we said goodbye and good luck to our colleague Dr. Liang Long, after six years of working with the CTPP program. Dr. Long is realizing a wonderful opportunity in market analysis; their gain is definitely our loss! We wish her all the best. Until a permanent replacement is found, please send your requests for CTPP technical support to Tara Rima at trima@camsys.com.

TRB Census Subcommittee Activities

Mara Kaminowitz, Baltimore Metropolitan Council,
mkaminowitz@baltometro.org

In July 2014, the Census Data for Transportation Planning Subcommittee of the TRB Urban Transportation Data and Information Systems Committee, ABJ30(1)

Update on American Fact Finder and ACS

The 2009-2013 ACS 5-year estimates are scheduled for release on December 4, 2014. The statistics are derived from five years of data collection that cover all geographic areas regardless of size, down to the block group level.

held a webinar on the newest CTPP data release. There were three presenters: Jim Hubbell (Mid-America Regional Council), Vladimir Livshits (Maricopa Association of Governments) and Brian Bresolin (Santa Barbara County Association of Governments).

Jim Hubbell used county-to-county work flow data from CTPP to understand the regional commuting pattern. He also used CTPP data in a comparative study of workers' and residents' income at a certain geography, in a transportation safety project, and in identifying locations where there was a potential to increase transit commuters.

Vladimir Livshits used CTPP 5-year estimates for Maricopa Association of Governments (MAG) travel model validation. He mentioned that the socio-economic data used in the model is not directly comparable with that of CTPP estimates within Maricopa Association of Governments (MAG) regional level. He found the CTPP data useful to validate the model-generated commuting flows among the districts defined by the network topology, the socio-economic and the travel characteristics in the region. The TAZ level CTPP data was aggregated at the MAG district level using GIS techniques. The margin of error at the district level was ignored in this comparison. Figure 1 shows the comparison of district-to-district commuter flows from CTPP data and from the MAG travel model.

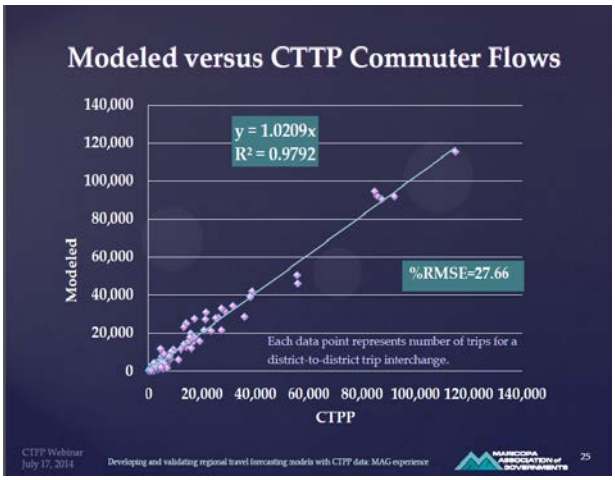

Figure 1. Modeled versus CTPP Commuter Flows at MAG district level

Brian Bresolin used CTPP data for the state of the commute report for Santa Barbara County. He compared worker flows between Santa Barbara and the neighboring counties from different data sources such as 2000 Census, 2006-2010 CTPP, and Longitudinal Employer-Household Dynamics (LEHD) data. Figure 2 shows that data from CTPP and LEHD are broadly consistent. It also shows an increase in the number of commuters to Santa Barbara by 25% from year 2000 to year 2010. Figure 3 uses CTPP data to show the comparison of numbers of in-commute, out-commute and work-and-live inside the cities in the study region.

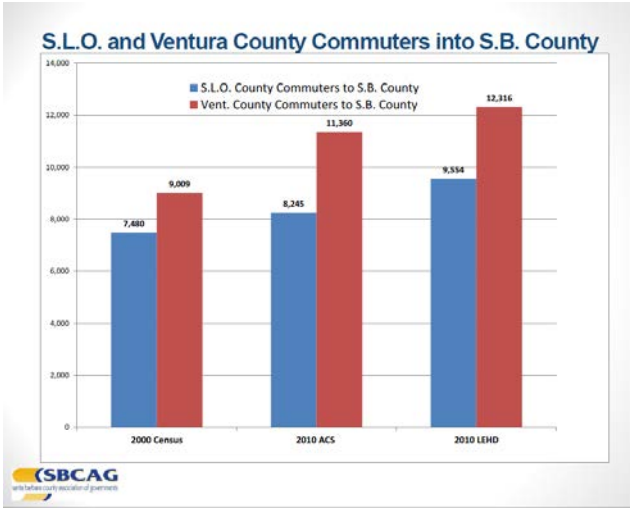

Figure 2. Comparison of worker flow from different data sources

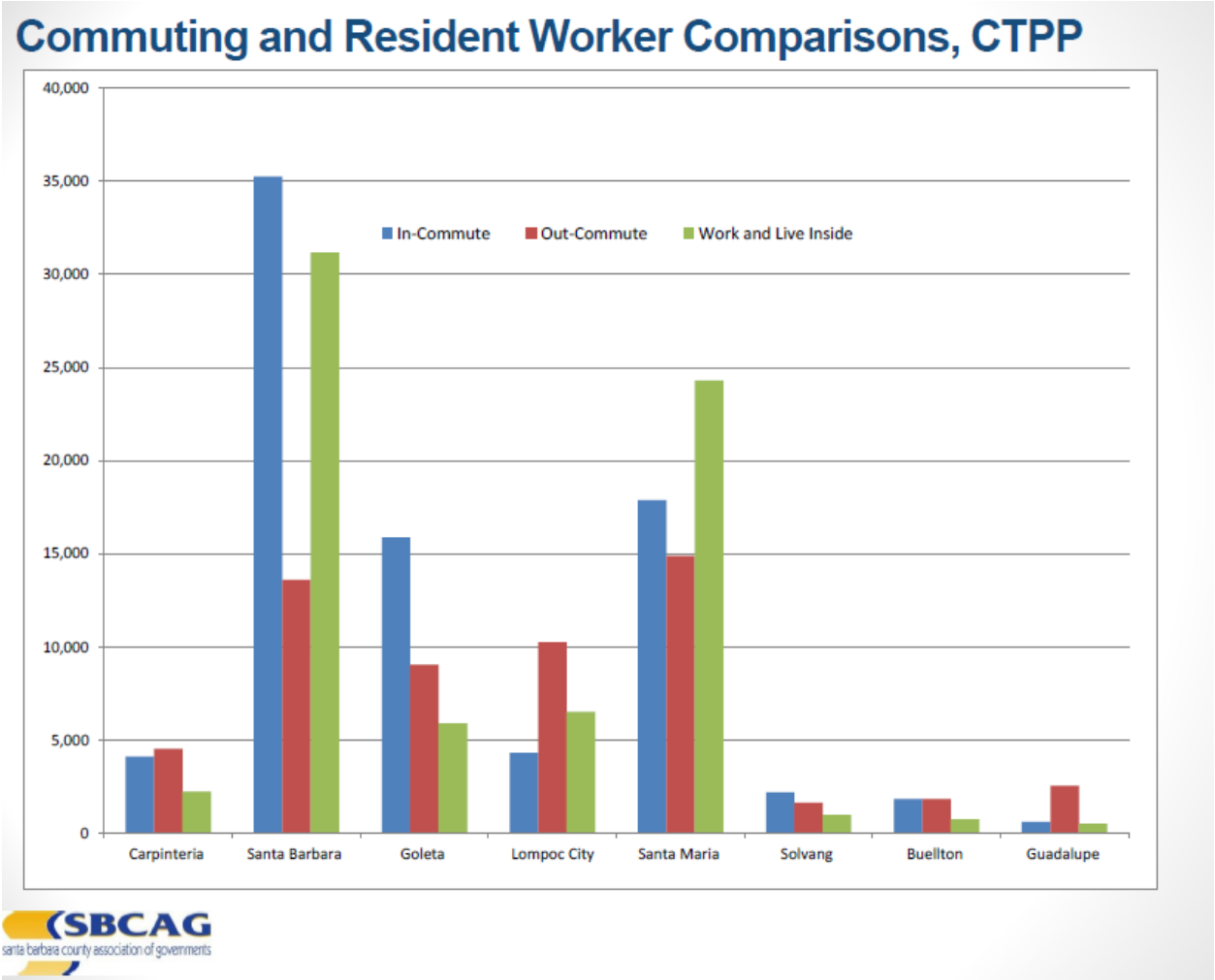

Figure 3. Commuting and resident worker comparison using CTPP

The webinar was moderated by Clara Reschovsky, Metropolitan Washington Council of Governments and Mara Kaminowitz, Baltimore Metropolitan Council, who co-chair the TRB subcommittee on Census data.

The TRB Census subcommittee has issued a call for posters for the 2015 TRB Annual Meeting. The topic is *Applications for Small-Area ACS and CTPP Data: New Data, New Challenges.* More information can be found at http://trbcensus.com/CallforPosters2015.html. Authors of the most innovative posters will be invited to present their research at the subcommittee meeting in January. Other topics planned for the January meeting include Census program updates and a discussion of future ABJ30(1) projects.

For more information about the TRB Census subcommittee please contact Clara at creschovsky@mwcog.org or Mara at mkaminowitz@baltometro.org. To learn more about the webinar, please visit http://trbcensus.com/webinar.htm.

FTA New Starts project using CTPP

Daniel Tempesta, Cambridge Systematics, Inc.,
dtempesta@camsys.com
Marty Milkovits, Cambridge Systematics, Inc.,
mmilkovits@camsys.com

For the New Hampshire Department of Transportation (DOT), Cambridge Systematics is analyzing alternatives to serve a corridor extending from Lowell, Massachusetts, to Nashua, Manchester, and Concord, New Hampshire. A goal is to serve commuter markets in this corridor, including trips destined for the Boston Central Business District (CBD). Funded, in part, by a grant from the Federal Transit Administration (FTA), the study considers a range of alternatives including commuter rail.

The 2006-2010 CTPP Journey to Work (JTW) data were used to gain insights into existing commuter rail ridership on the Massachusetts Bay Transportation Authority (MBTA) commuter rail system. The JTW data were also a direct input to a station-level boarding model used to estimate ridership on proposed commuter rail service options.

To identify JTW trips that could use commuter rail to access the work location, zones within walking distance of North Station, South Station, and Back Bay were identified. JTW trips with a work location in one of these zones and an origin in MA, NH, or RI were selected from the data set.

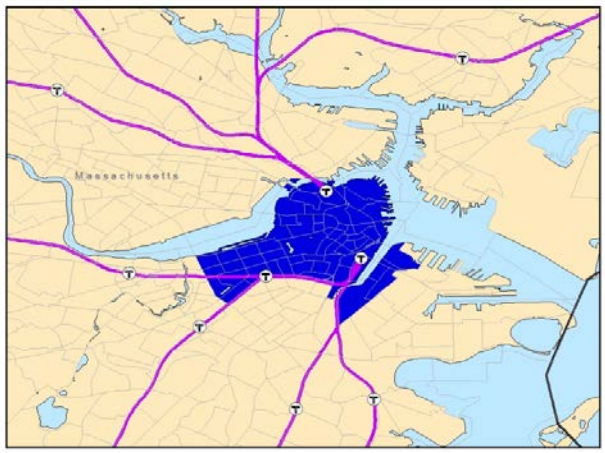

Figure 4. Journey to Work – Work Destinations (highlighted in blue)

The JTW commuter rail shares to the downtown Boston zones were calculated and plotted. The commuter rail share is relatively low, close to the CBD, where other transit modes are available and the number of JTW trips to Boston is large. As the distance from the CBD increases, however, commuter rail mode share also increases. Of course, the demand for travel is inversely related to distance and zones further from Boston, with high commuter rail shares, may actually represent fewer commuter rail trips than zones closer to Boston with low commuter rail shares.

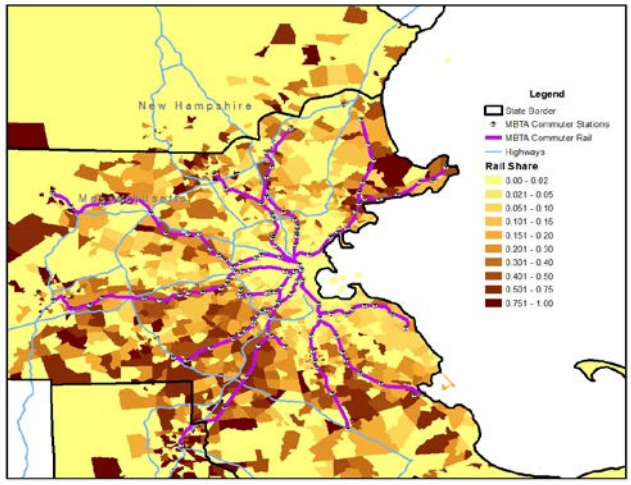

Figure 5: Commuter Rail Share to Boston

To use the JTW data in a station boarding model, each zone must be associated with a station, so the rail level of service can be joined to the JTW data. There are many

aspects that could be taken into consideration, including parking availability, auto travel time, service frequencies, and fare zone. The team decided to use a simple, defensible, minimum straight-line distance algorithm to match zones to stations. This algorithm performed reasonably well in aligning the reported JTW commuter rail trips with observed station boardings. Stations that reported a much higher boarding level are either near downtown areas, where non-work trips would be more prevalent, and/or are junction stations with higher service levels.

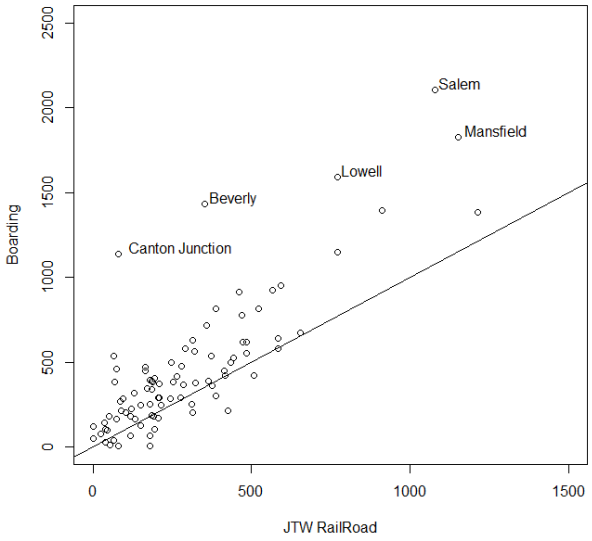

Figure 6. JTW Railroad trips associated with station-by-station boardings

The recommended commuter rail boarding model segments – JTW data – by distance from Boston into 0-10, 11-20, and greater than 20 mile bins to reflect the change in commuter rail mode share by distance. The other inputs to the model are service frequency, station characteristics, and employment surrounding the station.

Use of JTW data was particularly appropriate for this project, where "opening day" ridership is required. Demand induced by the new mode is not captured so the estimated ridership is more representative of the "opening day" rather than after the system has been in operation for some time.

Commuting in America 2013

Bruce Spear, Cambridge Systematics, Inc.,
bspear@camsys.com

The 2013 edition of *Commuting in America* has been completed. This is the fourth in a series of research reports that examine the travel behavior of U.S. workers with respect to their work trip. The first three editions of *Commuting in America*, published in 1987, 1996 and 2006, each authored by Mr. Alan Pisarski, relied heavily on data collected by the Census Bureau from the Journey to Work questions in the decennial Census long form questionnaire, and from National Household Travel Surveys (NHTS) conducted by the U.S. DOT in 1977, 1983, 1990, 1995, and 2001.

Commuting in America 2013 (CIA 2013) differs from the first three reports in several significant ways. First, unlike the prior reports that were published as single volumes, *CIA 2013* has been published as a series of sixteen *Travel Trend Briefs*, with each brief covering a different aspect of commuting. Second, *CIA 2013* was developed by a team of researchers led by Dr. Steven Polzin of the Center for Urban Transportation Research (CUTR) at the University of South Florida, and included Mr. Pisarski, Dr. Bruce Spear, and Dr. Liang Long of Cambridge Systematics, and Ms. Nancy McGuckin. The research was jointly sponsored by the American Association of State Highway and Transportation Officials (AASHTO) and the National Cooperative Highway Research Program (NCHRP).

Third, and perhaps most significant, were the differences in the data sources used. After 2000, the decennial Census long form questionnaire was replaced by the annual American Community Survey (ACS). This change had both positive and negative consequences on the data used in CIA 2013. On the positive side, it enables changes in work travel for large geographic areas (e.g., nationwide, by state or by large metropolitan

area) to be tracked annually rather than only once a decade. On the negative side, because only a small sample of households is interviewed each year, data for smaller geographic areas (e.g., rural counties, smaller metropolitan areas) can only be reported based on a multi-year (3- or 5-year) aggregation, and statistical margins of error for many attributes are often greater than the reported value.

Because of the smaller number of households sampled and disclosure restrictions imposed to prevent identification of individual households, the Census Bureau is unable to report many of the 2- or 3-way cross tabulations (e.g., mode to work by income by race/ethnicity) that were available from the decennial Census. Finally, because actual ACS data collection did not begin until 2006, only six year's worth (2006-2011) of Journey to Work data were available for use in *CIA 2013*, and the research was not able to utilize additional tabulations available from the 2006-2010 Census Transportation Planning Products (CTPP).

As of the end of July, nine of the sixteen *Travel Trend Briefs* have been published and can be downloaded from *http://traveltrends.transportation.org/Pages/default.aspx#.* The remaining Briefs will also be available from the AASHTO Bookstore later this year. Briefs currently include:

- Brief 1 – Overview
- Brief 2 – The Role of Commuting in Overall Travel
- Brief 3 – Population and Worker Trends
- Brief 4 – Population and Worker Dynamics
- Brief 7 – Vehicle and Transit Availability
- Brief 8 – Consumer Spending on Transportation
- Brief 10 – Commuting Mode Choice
- Brief 11 – Commuting Departure Time and Trip Time
- Brief 12 – Auto Commuting

As a supplement to the *Travel Trend Briefs*, the CIA 2013 research team has also prepared a table of the primary source data used to develop each of the tables and figures contained in the briefs. In addition to identifying each data source, the table includes a hyperlink directly to a data table or to a web page that provides access to the source data. While many of the tables and figures in the *Travel Trend Briefs* present only national level results, the *Data Source Table* includes additional hyperlinks that enable the reader to access equivalent source data for specific states and metropolitan areas, where available.

The complete *Data Source Table* will be available in August as a web document on the NCHRP ftp site: *ftp://crpuser:1adnan@aario.nas.edu/NCHRP/08-36_Task111/CIA 2013 Source List.htm.*

CTPP Contact List

CTPP Hotline – 202/366-5000
Email: ctpp@dot.gov
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

AASHTO
Penelope Weinberger
PH: 202/624-3556
Email: pweinberger@aashto.org

Tracy Larkin Thomason, NVDOT
Chair, CTPP Oversight Board
PH: 702/385-6500
Email: Tlarkin@dot.state.nv.us

Susan Gorski, MI DOT
Vice Chair, CTPP Oversight Board
PH: 517/335-2958
Email: gorskis@michigan.gov

Census Bureau: Social, Economic and Housing Statistics Division
Brian McKenzie
PH: 301/763-6532
Email: brian.mckenzie@census.gov

FTA
Ken Cervenka
PH: 202/493-0512
Email: ken.cervenka@dot.gov

BTS
Julie Parker
PH: 202/366-6373
Email: Julie.parker@dot.gov

FHWA
Elaine Murakami
PH: 206/220-4460
Email: elaine.murakami@dot.gov

Ed Christopher
PH: 708/283-3534
Email: ed.christopher@dot.gov

TRB Committees
Stacey Bricka
Texas A&M Transportation Institute
Chair, TRB Urban Data Committee
PH: 512/407-1123
Email: s-bricka@ttimail.tamu.edu

Clara Reschovsky
TRB Census Subcommittee Co-Chair
PH: 202/962-3332
Email: creschovsky@mwcog.org

Mara Kaminowitz
TRB Census Subcommittee Co-Chair
PH: 410/732-0500
Email: mkaminowitz@baltometro.org

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.