CTPP Status Report

April 2016

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

Welcome new CTPP Oversight Board members

- Dr Soheila Khoii, Chief of the Travel Data Analysis Branch at California Department of Transportation (CalTrans) brings nearly twenty years' experience.
- Jessie Jones, Division Head of Transportation Planning and Policy joins us with fourteen years of experience at Arkansas State Highway and Transportation Department (AHDT)
- Ben Gruswitz, Senior Transportation Planner in the Office of Modeling and Analysis at the Delaware Valley Regional Planning Commission (Philadelphia area MPO).

Soheila, Jessie and Ben have dived into the board work, joining subcommittees and bringing new ideas to the table.

We love tables!
We are hard at work finalizing our table specifications for the next 2012-2016 five year tabulation. The number of tables will decrease but our goal is to ensure they are useful. Therefore, we need your feedback once you start using the 2012-2016 data.

Did you know that Kansas City has over 200 days of sunshine per year?
We just started planning a census data conference for fall 2017, so start polishing up your research and papers, and come shine with us in Kansas City*

*most likely or somewhere else with sunshine and baseball!

TRB Census Data for Transportation Planning Subcommittee Update

Clara Reschovsky, Census Subcommittee Co-Chair, clara.reschovsky@dot.gov

The Census Data for Transportation Planning Sub-committee sponsored a poster session examining the "Uses of Multiple Datasets for Transportation Planning" at the 95th Annual TRB Meeting in Washington D.C. this past January. Nine fascinating posters spurred conversations ranging from using cell phone data in conjunction with Census data, to finding other sources of local data to estimate household movements in the absence of current Decennial counts. The session was well attended.

Census Bureau Update provided by Brian McKenzie:

- Field testing changes to the "Means of Transportation to Work" this

spring 2016 followed by evaluation fall 2016.

- Concerns about the cognitive difficulty of a number of questions, including the Place-of-Work question
    - Respondents have difficulty knowing a precise address for their workplace, if it is non-traditional or if they do not work at the same place all the time.
    - Researching refinements to this question is also underway in order to improve data quality.
- Purchasing a new employer file for matching workplace addresses during the geocoding locations
- Recently released a new County-to-County workplace file for 2009-2013 ACS which includes basic means of transportation information

For the full presentation, visit: http://www.trbcensus.com/TRB2016/presentation/McKenzie_Census_pres_TRB2016.pdf

CTPP Program Update provided by Penelope Weinberger - AASHTO,

- Census Bureau has experienced a reduction in resources; therefore the next iteration of the CTPP, covering 2012-2016, tabulation size will be reduced by 65 percent.
- CTPP Oversight Board has proposed a list of tables to be eliminated and a list of tables to be produced for large geography levels which may include Census Place, county and Metropolitan Statistical Area (MSA).
- Home geography to work geography flow tables will be impacted the most.

For a full list of the tables, please contact pweinberger@aashto.org.

The 2016 TRB Annual Meeting was a success and we look forward to seeing many of you at the 2017 TRB Annual Meeting. For more information on the 2016 Meeting, please visit: http://www.trbcensus.com.

Poster Session Highlights

Summaries for two posters presented in the Census Data for Transportation Planning Subcommittee poster session are below. All nine posters can be found at http://www.trbcensus.com/TRB2016/.

Poster 1: Spatial and Socioeconomic Analysis of Commuting Patterns in Southern California: Using LEHD Origin-Destination Employment Statistics (LODES), Census Transportation Planning Products (CTPP) and ACS Public Use Microdata Sample (PUMS)

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In the practice of regional transportation planning, the subject of jobs-housing imbalance and/or jobs-housing mismatch is considered a key contributor to long distance commuting and traffic congestion. In addition, the spatial mismatch between where people work and live is considered as an impediment to environmental justice and social equity, given that certain kinds of residents and workers, such as low income and minority populations, tend to be more sensitive to job accessibility due to the cost of housing and long distance commuting. To better understand the relationship between commuting pattern and socioeconomic characteristics in Southern California region, the Southern California

Association of Governments (SCAG) has examined commuting distance by income using multiple datasets including LEHD Origin-Destination Employment Statistics (LODES) Version 7.1 data, Census Transportation Planning Products (CTPP) 2006–2010 5-Year data, and 2009-2013 ACS 5-year Public Use Microdata Samples (PUMS).

Due to the differences in data structure, variables, and geographic units among those three datasets, this study uses different methodologies to examine the relationship between commute distance and income level. Using LODES dataset, this study examines the median commute distance, by wage group, for six counties in the region for the years 2002, 2008 and 2012. The commute distance measured is the Euclidean distance, straight-line distance, or distance measured "as the crow flies" between the centroid of origin block and destination block. This commute distance is weighted by block-level commuter count. The weighted block-level commute distance is compiled to estimate the median commute distance at tract level. Additionally, this study examines the job-to-worker ratio by wage group. To estimate the job-to-worker ratio, a buffer is drawn from the centroid of each tract based on county-level median commute distance and then total jobs and workers within the buffer are counted for each tract.

Using CTPP dataset, the study examines the median commute distance by income group for six counties in the region. The commute distance measured is the Euclidean distance between the centroid of origin tract and destination tract and the commute distance is weighted by tract-level commuter count. This study examined the median commute distance by several variables, such as household income, poverty status and vehicles available.

The study uses the median wages of inter-county and intra-county commuters from the PUMS dataset to compare the earnings of workers residing in their destination-work-counties and those outside the destination-work-counties. The most detailed unit of geography contained in the PUMS dataset is the Public Use Microdata Area (PUMA).

In general, this study shows the similar patterns in commuting distance by income group among LODES, CTPP and PUMS datasets: (1) higher wage workers tend to commute longer distances than lower wage workers; (2) the commute distance is growing in all 6 counties between 2002 and 2012; and (3) the commute distance of workers in inland counties (Riverside and San Bernardino Counties) is longer and grows more rapidly than in coastal counties (Los Angeles and Orange Counties). However, it is also observed that the median commute distance from LODES dataset is longer than those from CTPP dataset, possibly resulting from differences between two datasets in data input source, data coverage, geographic tabulation level, time period and characteristics level.

This poster is available at http://www.trbcensus.com/TRB2016/poster/Vo_SoCal_poster_TRB2016.pdf.

Poster 2: Necessity Breeds Data Innovation: Obtaining Accurate Demographic Data in the Wake of Hurricane Katrina

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In late summer of 2005 the Greater New Orleans Area experienced the devastating wrath of Hurricanes Katrina and Rita creating long lasting demographic shifts at the midpoint between decennial Census efforts.

As a consequence, during the immediate recovery efforts following the storms, there was a lack of reliable and up to date demographic data at a time when it was needed most for transportation by all modes, utility, land-use, and other recovery planning efforts. As a Metropolitan Planning Organization, how can you ensure that a reduced transit service can still be accessed by the neediest neighborhoods? Where should critical services be prioritized in a rapidly evolving demographic landscape? The census data that previously was invaluable to answering these questions was no longer relevant, and with vast numbers of people temporarily housed while they were rebuilding permanent residences there was no reliable way to collect information that would reflect the reality of the remaining decade. In response, local, regional, and federal officials collaborated in finding innovative ways to satisfy these data requirements that were vital for short and long term planning.

Prepare for LUCA/Census 2010 and Determine New Settlement Patterns

The first priority was determining where populations were returning and, more importantly, where they were likely to rebuild. This immediately required acknowledging that 2000 Census data, along with many other pre-2005 datasets, were inadequate for the task. In the short term, in preparation for 2010, the Census Bureau agreed to hand deliver forms to all existing door knobs (as opposed to mailing since the US Postal service does not forward Census forms) for the 2010 census, while simultaneously recognizing that many of these residences are likely temporary while more permanent housing was rebuilt.

Questions as to where this permanent rebuilding was taking place were partially answered through a multi-layered analysis of previously unexplored datasets, such as utility hook-ups, mail deliveries, and new trash can drop offs, all of which indicated that a more permanent residence was being established. Perhaps the most significant dataset was from Louisiana's Road Home Program, which provided rebuilding and flood mitigation assistance to returning residents. This dataset, (accessed through a legal agreement with the State of Louisiana Attorney General) when used in coordination with local construction permit databases, provided address level, geo-coded locations where committed home rebuilding efforts were most likely to take place. These data eventually provided the basis for construction prioritization.

FHWA ER Road Network Planning

Approximately 2000 miles of roadway within the Greater New Orleans Area was submerged in floodwaters for up to five weeks. Of that, over 500 miles were on the federal aid network. The greatest concern for these roads was that the sub base of the roadbed had been weakened due to prolonged saturation, and exacerbated by the constant use of heavy debris removal vehicles. Louisiana Department of Transportation & Development (LADOTD), New Orleans Regional Planning Commission (RPC), and local governments were able to add funding for bike lanes, improved sidewalks, and curbs. ADA compliant accessible ramps were installed as part of the Emergency Relief (ER) program. Over $200 million in federal aid network repairs were completed in a seven year program. At program end the city of New Orleans rehabilitated, restored, or enhanced 38.9 percent of its major road network.

Transit Planning

In the wake of the storms, RPC was asked to help follow the relocation patterns of those most likely to ride transit. In response to need for current data, RPC, in partnership with the Louisiana Department of Social Services (DSS, now the Department of Child and Family Services - DCFS), obtained data showing the location of

beneficiaries of the Supplemental Nutrition Assistance Program (SNAP, Louisiana's food stamp program). Unlike those available from the Census, these data were collected region-wide on a biannual basis and could be summarized at the census block. In the months following Katrina they were an invaluable means of planning the deployment of transit service for the residents that most needed it. The partnership between RPC and LA DCFS continues to this day, with detailed and current SNAP datasets helping to demonstrate at a fine scale the geographic shifts of the region's low-income populations and informing the best ways of ensuring that these homes receive appropriate transportation services.

Land Use Planning

Determining the location of regional destinations such as schools, employment centers, and other services, was the next priority – particularly for agencies tasked with rebuilding the street and transit network, or for those trying to best locate those services. A new and untested city-wide public school system and the rebuilding and/or consolidation of several school facilities, resulted in a rapidly changing school location dataset that required a sustained effort toward ensuring accessibility by students. Transportation planning agencies and the local transit authority used datasets identifying the locations of high school students and helped determine the best way for the transit system to give students accessibility. Regarding employment centers, there was a large effort to clean up InfoUSA data, resulting in a much more relevant job destination dataset that can be used in regional travel modelling, economic development, and land use planning.

Without the need for more relevant data portraying a closer view of the current reality post-2005, the MPO and its partner agencies would probably have continued using the same standard datasets without as much data cleaning. However, the need to rapidly deploy massive infrastructure construction projects such as sewer and water pump stations, levee reconstruction, street-lights, etc. required decision making tools that informed the tough choices that had to be made regarding project prioritization.

This poster is available at: http://www.trbcensus.com/TRB2016/poster/Dupont_Katrina_poster_TRB2016.pdf.

Assessing the Utility of the 2006-2010 CTPP Five-Year Data – A Synopsis

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1.0 Introduction

Since 1980 significant resources have been invested by the transportation community for the production of a special tabulation of Census data. The special tabulation under the CTPP program, has recently undergone two significant changes; a change to an ACS-based product and the creation of disclosure proofed data. In order to better plan for the future of the program, and to decide on the level of investment and allocation of resources across the various components of the program, a research study was developed by AASHTO to better understand use of the CTPP data by the transportation community, to identify common issues and how those are dealt with, and to determine the level of adequacy of the existing training activities and available materials. The outcome of the research is expected to provide insights to the decision-making process on various features of the CTPP program ranging from the overall content to the future of small area data products. The full results will be published in Summer 2016.

The main goal of the study was to better understand the extent to which issues related to the shift from the Decennial Census Long Form to the American Community Survey (ACS) are acknowledged and addressed in the dissemination and use of Census Transportation Planning Products (CTPP) data. This methodological change resulted in accumulation of data over five years, a reduction in sample size, limited availability of annual summaries especially for small geographic areas with population less than 65,000, and additional complexities in interpretation due to margins of error (MOE) associated with each estimate.

These changes raised additional issues:

- Because of smaller sample sizes and lower response rates, the 5-year CTPP data at small geographies is of lower quality.
- Aggregating zonal data, or computing new measures using the existing estimates increases the amount of uncertainty which may have been typically overlooked.
- Due to confidentiality issues and regulations from the Census Bureau's Disclosure Review Board (DRB), 180 of the 343 tables (53 percent) from CTPP 2006-2010 contain perturbed (disclosure proofed) data. These data cells would otherwise have been redacted by the Census Bureau to protect respondents' anonymity.
- It is anticipated that users would like to compare CTPP data to other sources to gain confidence and test consistency across these sources. However, comparison data may also have imperfections reflecting important differences in how they are produced.

The study consisted of three steps that are designed to gather input from various users with a varying degree of expertise and interest:

"**Issue Monitoring**" focused on identifying potential issues for practitioners and analysts based on experiences of the data user community featured in the CTPP newsletter and in the issues presented to Federal Highway Administration's (FHWA) CTPP Support Staff. This step helped identify issues and solutions at the individual user or project level.

"**User and Expert Opinions**" consisted of three separate data collection efforts that started with a "*User Survey*" of individuals with a higher degree of institutional knowledge at state and regional agencies who have more in-depth experience with CTPP and relevant transportation data. The survey collected the range of uses of the CTPP data and related products, users' degree of familiarity with known issues, and how they overcame those. The findings were used in the next round of discussions with a group of subject matter experts and program administrators.

The "*Peer Exchange*" stage collected feedback and suggestions from a panel of experts by filtering the survey results through their knowledge and incorporating their own experience with the issues they face and strategies to deal with those. The peer exchange participants outlined a set of key practical issues, provided guidance to address them, and suggested future directions for the state of practice and research.

"CTPP Oversight Board Interviews" has the same objective using a set of expert CTPP users who have knowledge of both the CTPP user experience and the program administration.

The collective findings from these three efforts identified and categorized the ongoing uses of the CTPP and ACS five-

year data, and presented insights about users' and experts' experience with the data, available tools, and technical support.

The "*Utility Assessment*" step included two cases studies, one on the practical implications of multi-year data compilation, and one on the comparison of Longitudinal Employer-Household Dynamics (LEHD) and CTPP worker flows. In addition, a set of recommendations were included on how to address specific issues on accessing data and how to work with large margins of errors.

The findings from each analysis stage were synthesized, and the key issues related to ACS based CTPP data utilization were documented. Recommendations about future CTPP data releases along with potential future research activities were provided in the project reports.

2.0. User and Expert Opinions

In this paper, we focus on the key characteristics and findings of the "*User and Expert Opinions*" stage of the study. We discuss each one of the three data collection efforts and summarize key findings.

User Survey

The web survey was conducted in September 2014 to shed light on the breadth of the CTPP and ACS data usage by planners at state departments of transportation (DOTs) and metropolitan planning organizations (MPOs). Potential survey respondents were contacted by e-mail and invited to a website to complete the survey. In addition, bulk invitations were sent to members of various email lists and planning organization mailing lists, including the following:

- CTPP listserv;
- Travel Model Improvement Program (TMIP) listserv;
- Association of Metropolitan Planning Organizations (AMPO); and
- National Association of Regional Councils (NARC).

The survey content was developed incorporating the main findings in the "Issue Monitoring" step, and covered the following key topics:

- Use of CTPP
- Importance of CTPP variables
- User perceptions of CTPP software and documentation
- ACS-based CTPP concerns (content, sample size, margins of error, geographical delineation, multi-year accumulation, and perturbation)

202 respondents participated in the survey. Nearly 63 percent of the respondents (124 out of 202) had hands-on experience with CTPP and/or Census data, and the remaining 37 percent of the respondents were labeled as non-users.

The high level of familiarity with CTPP data is exhibited in their responses. Nearly 80 percent of respondents agreed (either strongly agreed or somewhat agreed) that they have a good understanding of the Census ACS data collection processes. Nearly two-thirds were involved with delineating traffic analysis zones for their regions or states.

Respondents were experienced with each of the CTPP general table types, and their experiences with CTPP data extended across both recent and earlier data products.

Users of CTPP data tables felt strongly that these data are valuable resources; more than three quarters of the respondents felt that the CTPP data tables provide more value compared to the ACS tables.

Based on a "check-all-that-apply" question, about three-fourths of the respondents' organizations use CTPP data to support **travel demand modeling**. About half develop **data profiles and summaries**. More than 40 percent of respondents' organizations use the data to support **transit planning**, and almost 30 percent to analyze **bicycle/pedestrian issues**. Nearly one-third of the organizations use CTPP to support **environmental justice** analyses, and 20 percent to perform analyses involving **race and ethnicity**.

We also asked respondents to describe their most recent usage of the ACS CTPP data in an open-response format. Nearly 50 percent reported that the most common recent uses of CTPP data involved the analysis of household, workplace, or home-to-work flow data to better understand a transportation market. For 30 percent, the most recent use was to support travel demand modeling, and for the remaining 20 percent the most recent use was for specific planning studies.

The survey also indicated that CTPP data successfully supported about 40 percent of the analyses reported by the respondents. However, for the majority of the efforts (57 percent), CTPP data did not provide everything that was needed to complete the analyses. The following main themes have risen up as the main reasons for concern or dissatisfaction:

- Questions about data accuracy;
- Issues with small sample sizes for small geographic areas;
- Concerns with using data collected over multiple years;
- Need for additional cross-tabulations; and
- Software issues.

Furthermore, the survey focused on a set of ACS-based considerations such as content; geographic delineation; multi-year data accumulation; margins of error; and perturbation. It also included a set of questions on data dissemination and training materials.

Peer Exchange and CTPP Oversight Board Interviews

A selected sample of web survey respondents using the CTPP and ACS data, researchers identified in the literature search, and CTPP users identified by AASHTO participated in a half-day Peer Exchange to provide additional information and insights regarding ACS-based CTPP data. The Peer Exchange Meeting was held with 16 participants from various sectors of the transportation industry and was hosted by the Atlanta Regional Commission at their offices in Atlanta, Georgia on October 20, 2014.

The Peer Exchange participants were able to provide greater depth than the web survey respondents and they went into greater detail regarding ACS-based CTPP products with a particular emphasis on future planning of CTPP data products.

To further gain an understanding of the perspectives of expert users, in-depth interviews were held with eight members of the AASHTO CTPP Oversight Board in November and December 2015. The discussions were loosely organized around the same issue themes as outlined in the Peer Exchange.

The Board Member interviews provided the perspectives of people who have advanced knowledge of the CTPP data uses and products, as well as the challenges and issues of the CTPP program itself. The time gap between the peer exchange meeting and the Oversight Board interviews, while largely circumstantial, ended up being a benefit since new program issues regarding future Census table limitations arose during that time period.

Both Peer Exchange and Board member discussions focused on the same ACS-based considerations and data dissemination issues as follows:

- Data content;
- Geographic delineation;
- Multi-year data accumulation;
- Margins of error;
- Data perturbation; and
- CTPP data access software and training.

3.0 Results

The analysis of the CTPP user survey supported by the insights from the peer exchange meeting and the in-depth interviews of the board members provided useful insights into the value of 2006-2010 CTPP and ACS data. Key findings can be summarized as follows:

- Most users are knowledgeable about the limitations and challenges of working with data derived from smaller sample sizes and accumulated over multiple years, and believe that 5-year data provide benefits compared to the decennial long form Census data.
- Many users prefer to use small geography data, particularly traffic analysis zones, while recognizing the uncertainties about sample size and data quality. Census tract and county level data are valued highly as well.
- Users acknowledge the sampling issues in small areas and resultant large MOEs. However, they rarely incorporate MOEs in their analysis. Some more experienced users rely on MOEs as a measure of data quality when interpreting the data.
- Perturbed data are welcomed by the community as a means to avoid cells with missing values. Although there is trust towards the methods implemented, more seasoned users still would like to see comparisons before and after perturbation.
- The online software tool is considered to be capable and comprehensive by most users, but there is general consensus on the learning curve being steep. Some users prefer to access data via traditional ways, particularly when analyzing data from a large metro area. The role and functionality of the software may need to be reevaluated considering the substantial reduction in the CTPP content and the provision of most Part I and Part II tabulations by the Census.
- The diversity of training opportunities was very appealing to the community. Respondents who had attended the in-person classes generally found them to be the most effective means of training, and some also pointed out the "marketing" value of these classes. Some Oversight Board members suggested that training be offered on the potential uses of CTPP data instead of only providing instructions on how to access and download a particular tabulation.
- The stakeholders, were generally optimistic that CTPP could continue to provide users with extremely valuable data into the future. The first immediate challenge for CTPP identified by Oversight Board members is to maintain the CTPP's utility for users as the table reductions are made. Some respondents actually saw the reduced number of tables as possibly leading to a more streamlined and effective tool for planners. It will still be imperative that CTPP remain a "stable, reasonably comparable source of data from a large random

sample of the population" for it to maintain its core utility.

- Supplementing the data with travel distance information during the data compilation stage was discussed by the Peer Exchange participants. While this may require additional effort and coordination with national and local agencies, existing online mapping applications can be used as a proof of concept.
- Potential long term ACS improvements worthy of exploration included second jobs, better information on telephone availability, sub modes such as access/egress modes, new modes such as shared ride arrangements, autonomous vehicles, and international commuting trips for border communities.
- Both Peer Exchange Participants and Oversight Board members cited the increasing importance of integrating CTPP and other common transportation planning datasets as a means to improve confidence with the CTPP data. The CTPP program can help this happen by including training on how to integrate CTPP and other datasets, developing tools to enable users to perform these integration steps more easily, and/or including other datasets in the CTPP program itself.
- Finally, several specific additional research topics were identified based both on the outcomes of the Peer Exchange and the web survey. These included the comparison of CTPP data and alternative sources for model validation; the extension of ongoing research in combining CTPP and NHTS data; and the evaluation of household-based and person-based data perturbation.

Using Passive Data to Synthesize Travel Diaries: An Agile Tour-Based Model

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Household travel surveys have been the foundation of travel models for many, many years. Both trip-based (four step) and activity-based models rely on the surveys' travel diary format for measuring the population's travel. Much advancements in travel survey collection techniques has decreased participant burden and improved accuracy, but many planners agree that passive data collection methods (cellular phone traces, ITS devices, etc) are the way of the future. How can travel models adapt to this evolving landscape?

A collection of experiments in three metropolitan regions (Asheville NC, Atlanta, and Seattle) demonstrates an agile, tour-based approach to travel demand modeling that is built upon passive location and consumer data without local household travel survey data. The data-driven model relies on an innovative person-based simulation framework that, on a personal laptop, produces detailed travel diaries for a full population in less than one hour.

The agile demand model is in essence a data synthesis process that fuses consumer data, location data, travel time data in real traffic conditions, and National Household Travel Survey (NHTS) behavioral data in a systematic, privacy-preserving manner. Rather than measuring a small sample of individuals' travel over a day or two with a survey, the entire population is passively measured over a month or a year to characterize statistical distributions of particular events.

For example, statistical distributions of the time of day that people travel to work from home can be estimated from raw location data and summarized by small geographic home zones. A series of statistical distributions like these are used within a discrete event simulation. With many different sources, this measurement approach allows for a much more robust sample that is not unduly affected by outliers and that can be collected repeatedly with ease.

An analyst studying the simulated system can obtain detailed insights on individual movements and associated socio-demographics using the discrete event simulation output, which is a relational database of the same format obtained from an activity-based model with person, household, firm, and tour tables. Currently activity location types include home, work, and other. Trips are not yet split by mode, but this will be developed in the future with expanded data sources.

An analyst can also study future scenarios by comparing model run results with altered input statistical distributions. Because the model runs so quickly, and inputs are easily accessible, it is easier to test scenarios that are vastly different from today. For example, studying the effects of autonomous vehicles is more feasible with this agile model than with a highly-calibrated activity-based model that takes more than a workday to run.

In the Atlanta and Seattle implementations, the synthesized travel data have been internally validated by checking against statistical distributions of the NHTS data that are not used in the simulation. One comparison is shown in Figure 1. Both the ACS demographic data and the LEHD and CTPP flow data are used as external reference points to check the reasonableness of the resulting origin-destination flows for work purposes. Lastly, the synthetic travel diaries are also being compared against each of the region's most recent household travel surveys and their activity-based models using common model validation procedures. Full results will be made available at transportfoundry.com/blog in mid-summer 2016 as part of the final report to a TRB IDEA project.

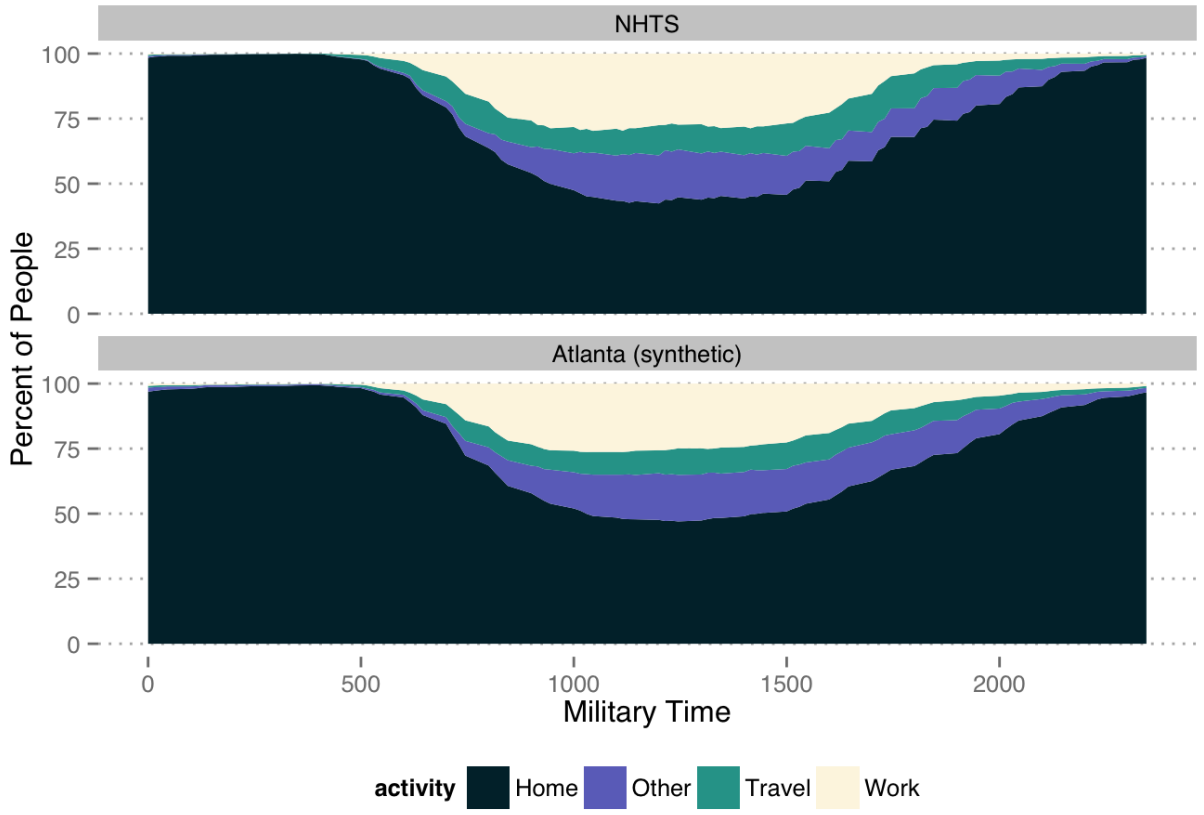

Figure 1 The synthesized travel data in Atlanta are internally validated against the NHTS data with area charts that visualize, over time, stacked percentages of where people are located. The synthesizing process does not control for this directly.

In the Asheville implementation, the model results were additionally passed into the French Broad River MPO's assignment model so that results could be validated against observed traffic volumes. The results will be compared against the assignment results from the trip-based model that was recently developed for the North Carolina DOT and French Board River MPO (FBRMPO) covering the same Asheville region. The comparison will be presented at the TRB Innovations in Travel Modeling conference in May 2016 in Denver, Colorado.

In summary, this passive data-driven approach leads to an advanced microsimulation model without the long development times and run times typically experienced with activity--based models. The approach uses nearly real-time data that are consistently available nationwide. In this fast-paced, quickly-changing world, these combined facts mean that a community of modelers can truly build shared tools that allow planners to keep up and stay relevant in conversations about regional changes and the future of transportation.

Acknowledgments

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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.