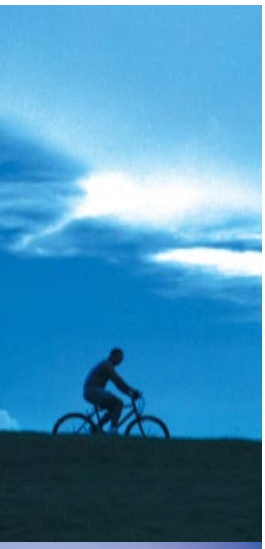
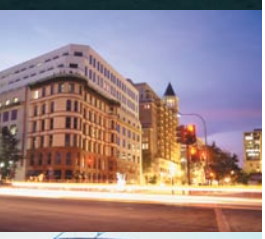
SUMMER 2007

TMIP Connection

The Travel Model Improvement Program Newsletter





The Secrets to HCM Consistency Using Simulation Models

By Ronald T. Milam, AICP – Fehr & Peers, David Stanek, PE – Fehr & Peers, and Chris Breiland – Fehr & Peers

This article is a summary of a recent paper presented at the Transportation Research Board Planning Applications Conference.

Traffic operations analysis has evolved to where many applications require the use of microsimulation software programs. When traffic demand exceeds capacity, applying the methods in the *Highway Capacity Manual 2000* (HCM) is not always appropriate and may underestimate delay and congestion. Recognition of this condition is noted throughout the HCM.

"… the HCM methods are generally not appropriate…for the evaluation of queues that are building over both time and space." – Page 9-1, HCM

"Certain freeway traffic conditions cannot easily be analyzed by the methodology. Multiple overlapping bottlenecks are an example. Therefore, other tools may be more appropriate…" – Page 22-1, HCM

The HCM provides some direction for handling the above circumstances such as advising the use of simulation models. However, this direction tells the user "when" to use simulation and not "how." While traffic operations microsimulation programs are becoming more user-friendly, most of the programs come with limited direction on how to generate performance measures that are HCM-consistent. This is an important limitation because many public agencies responsible for conducting or reviewing traffic operations analysis require the use of HCM-consistent performance measures.

The original HCM research contains the information about how data were collected to support the HCM calculations. The flexibility of microsimulation programs allows the user to create models that allow for performance data to be collected so that they replicate the original data collection. This approach allows for performance calculations to closely approximate those in the HCM.

HCM Performance Measures

To understand whether microsimulation software programs generate HCM-consistent performance measures, the HCM performance measure definitions must be clearly understood. For example, most simulation programs generate total delay for intersections and not control delay. They may also report freeway density in vehicles/mile/lane instead of passenger car equivalents. Further, because simulation programs have multiple methods of collecting and summarizing data, being specific about defining the limits of a weaving section or a ramp junction is essential input information that must be accounted for correctly when building the model.

Simulation Model Specification

When developing a traffic operations model using microsimulation software programs such as SimTraffic, CORSIM, Paramics, or VISSIM, the specification of the model network and output data is critical for creating HCM-consistent performance measures. Network development is particularly important because the network setup includes the identification of points, nodes, or links where output data are to be measured or accumulated. During model setup, the user is also instructing the program about which data to output and, if possible, developing user-defined variables.

For the most part, microsimulation programs provide sufficient data to accurately calculate the "average speed" and "density" performance measures. However, the default output often measures density in terms of vehicles and not passenger car equivalents. An adjustment to account for trucks and other heavy vehicles is necessary to convert the output to passenger car equivalents. Control delay is available in some programs such as CORSIM, but other programs only provide total delay. While total delay is similar to control delay, it is approximately 10 percent higher. According to the *Guidelines for Applying Traffic Microsimulation Modeling Software* (Federal Highway Administration [FHWA], August 2003), this difference is small enough to allow the use of total delay in place of control delay. Nevertheless, use of total delay should be acknowledged by practitioners when reporting intersection analysis results.

Unfortunately for practitioners, mi-

SEE HCM CONSISTENCY ON PAGE 2 ➤

U.S. Department of Transportation
Federal Highway Administration

HCM CONSISTENCY CONTINUED FROM PAGE 1 ➤

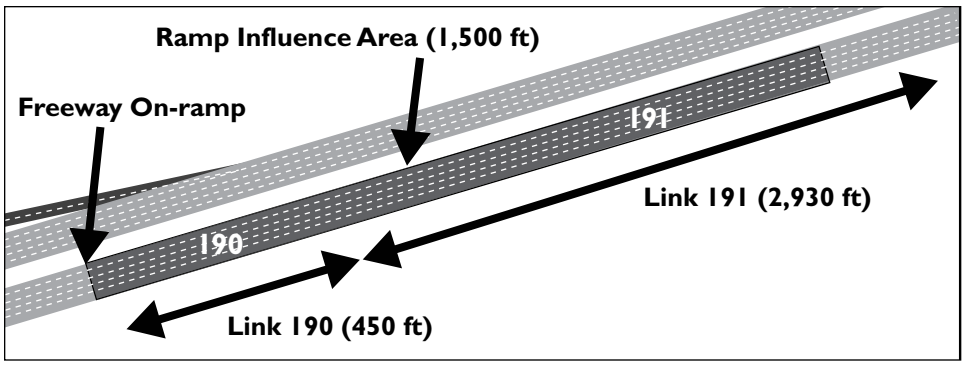


Figure 1. VISSIM Freeway Ramp Junction Coding Example

crosimulation software programs do not all use the same or even similar network coding provisions. As such, any guidance about network development must be software specific. For the purposes of this article, one program example is provided involving a freeway ramp junction in VISSIM. For other examples, refer to the full paper.

a typical freeway ramp merge as coded in VISSIM. The four-lane freeway segment has a one-lane on-ramp that merges with a 450-ft auxiliary lane.

VISSIM will report link statistics including density, which is used to set the level of service, by link and by lane, using the Link Evaluation function. Additionally, the user can specify the segment length along a link for statistical reporting.

To calculate the density only within the ramp influence area, the density for each of the right three lanes (the auxiliary lane and two adjacent through lanes) should be collected for link 190. For link 191, the density for the right two lanes should be collected by lane, but only for the first 1,050 ft of the link (that is, 450 + 1,050 = 1,500 ft). The density of the ramp influence area is estimated by first calculating the volume-weighted average density across links for each lane, and then by calculating the volume-weighted average density across lanes.

Link: Link Number
Lane: Lane Number
v: Average speed [mph] (Vehicle Class 0)
Volume: Volume [veh/h] (Vehicle Class 0)
Density: Vehicle density [vel:/mi] (Vehicle Class 0)

Link:	Lane:	v '0':	Volume (0):	Density (0):
190;	1;	36.85;	246.33;	6.68;
190;	2;	43.41;	2256.81;	51.99;
190;	3;	49.07;	2146.62;	43.75;
190;	4;	54.75;	2184.74;	39.90;
190;	5;	5729;	2154.18;	37.60;
191;	1;	54.39;	2223.31;	40.88;
191;	1;	59.83;	2170.22;	36.28;
191;	1;	60.78;	2132.72;	35.09;
191;	2;	56.81;	2239.51;	39.42;
191;	2;	60.74;	2219.06;	36.53;
191;	2;	61.74;	2188.25;	35.44;
191;	3;	59.48;	2272.74;	38.21;

Across Links

Across Lanes

Figure 2. VISSIM Link Evaluation Results

VISSIM Ramp Merge Density and LOS Comparison			
Location	**Length**	**Density**	**LOS**
Link 190	450 ft	45.8 vehicles/lane-mile	F
Link 191	2,930 ft	37.3 vehicles/lane-mile	D
Ramp Influence Area	1,500 ft	42.1 vehicles/lane-mile	E

Table 1.

Freeway Ramp Junction

The HCM defines the freeway ramp junction influence area for a merge location as the two shoulder lanes plus adjacent auxiliary lane(s) within 1,500 ft downstream of the ramp gore. Figure 1 above shows

The density estimates and levels of service (LOS) are different if based on link 190 or 191 alone versus the ramp influence area as shown in Table 1.

If the ramp junction LOS were based on the 450-ft link 190, then the severity of traffic operations would be overstated. Also, note that these results are not yet complete because they are based on vehicles/lane-mile instead of the HCM-consistent measure of passenger cars per mile per lane.

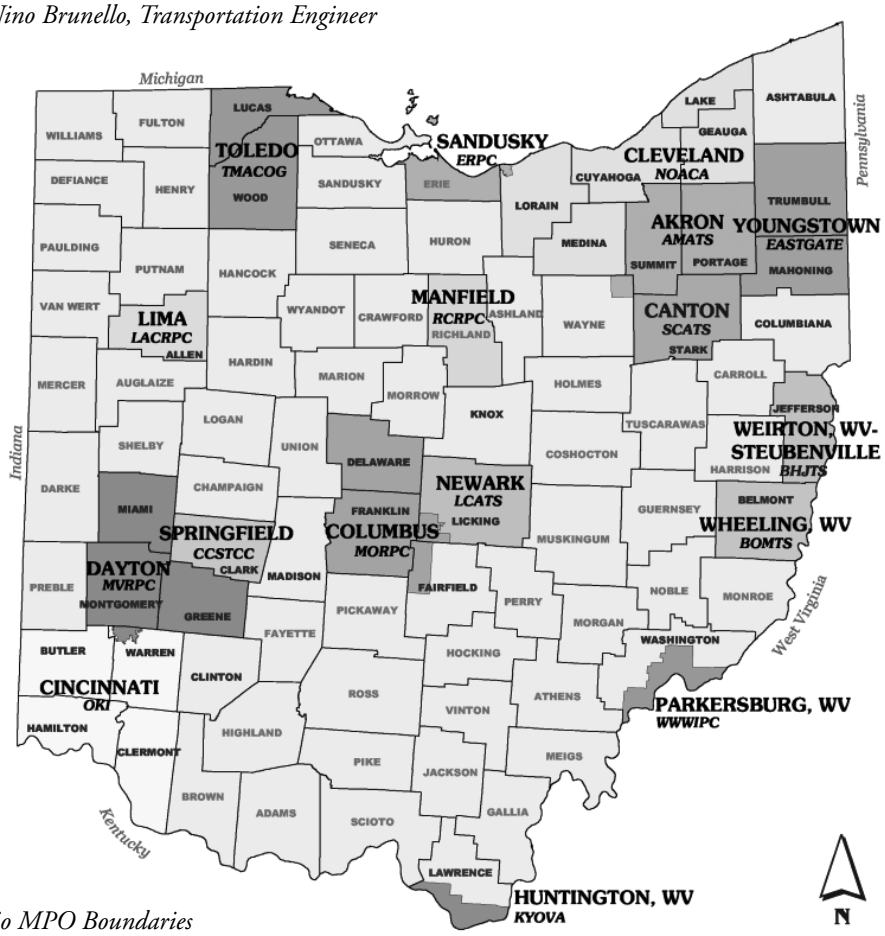
Conclusions

The example above demonstrates the importance of correctly specifying simulation model networks and output variables to generate HCM-consistent performance measures and analysis results. This information is not available through user manuals or software help instructions.

While the HCM does a good job in describing when to use simulation, and the FHWA *Guidelines for Applying Traffic Microsimulation Modeling Software* provides useful information on how to perform simulation modeling, insufficient guidelines still exist when it comes to the actual application of specific software programs if achieving HCM consistency is desired. The profession would benefit from additional federal efforts such as the NGSIM program that relate directly to simulation model output and analysis. Absent this type of information, software vendors could provide more complete information about the ability of the software programs to generate HCM-consistent performance measures.

Ohio Model Users Group

By Nino Brunello, Transportation Engineer



Ohio MPO Boundaries

The Ohio Travel Demand Model Users Group (OTDMUG) first met in December 1999. The group was founded by and is supported by the Ohio Department of Transportation (ODOT). Membership was initially made up of ODOT, MPOs, university researchers, and consultants from within Ohio, but attendance has grown to include other Ohio government agencies and parties from neighboring states and across the U.S. The OTDMUG meets quarterly, and membership is open to all interested parties.

The group serves the numerous model users within the state. Ohio currently has 15 regional MPO models, with six crossing into the neighboring states of Indiana, Kentucky, Michigan, and West Virginia

Several of the larger MPOs have enough staff to independently run the models, while the smaller MPOs rely on ODOT's modeling personnel for guidance. Ohio also has a statewide model that is nearly complete, and the interim version of the model has already been used for several state planning studies. The statewide model network covers the entire continental US and parts of Canada, and has higher densities in and around Ohio. It also directly incorporates data from all of the Ohio regional MPO models.

The primary purpose of the OTDMUG is to foster a cooperative effort in travel demand forecasting and the design and implementation of travel demand models throughout the entire state. The OTDMUG also serves as a forum for the discussion and study of common problems of a statewide nature, and for the related development of policy and action recommendations.

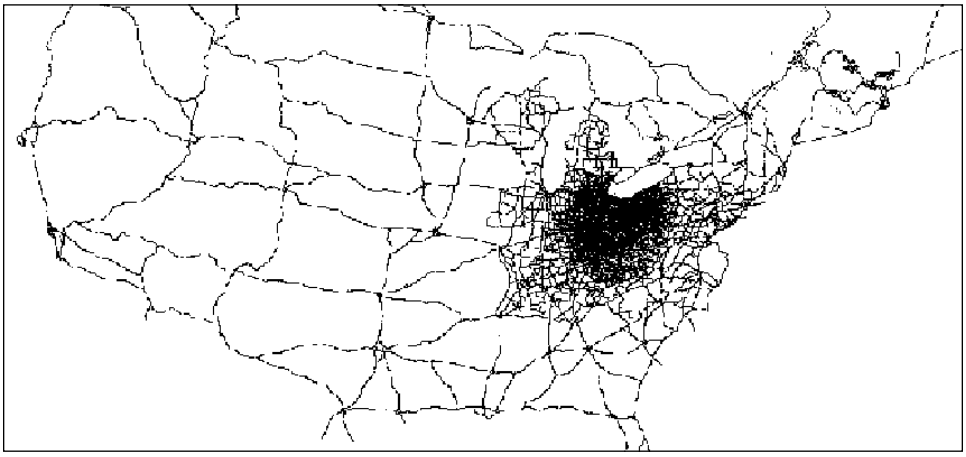
The functions of the OTDMUG include:

1. fostering, developing, and aiding in the coordination of travel demand forecasting and the design and implementation of travel demand models;
2. undertaking studies, collecting data, and engaging in such other activities as the group finds necessary or desirable for the advancement of travel demand forecasting and the design and implementation of travel demand models; and
3. serving as an advisory council related to travel demand forecasting and the design and implementation of travel demand models.

At each meeting, the group brings in several speakers for presentations. Past speakers have included personnel from ODOT, the Kentucky Transportation Cabinet, Ohio MPOs, Michigan MPOs, Pennsylvania MPOs, FHWA, FHWA-Ohio, Ohio EPA, modeling software vendors, and engineering and planning consultants. In addition to sharing information, attendees are able to apply their time toward earning Continuing Education Units (CEUs) or Continuing Professional Development (CPD) credits.

OTDMUG presentations have covered a wide spectrum of topics, such as: land use

SEE OHIO MODEL ON PAGE 4 ➤



Ohio Statewide Model Network

Sources of Employment Data

By Ed Christopher, Metro Planning Specialist, FHWA Resource Center

This past January at the Transportation Research Board meetings, several data committees got together to sponsor the annual Travel Data Users Forum. The Forum is an annual event started three years ago for the purpose of bringing together data users and planners to discuss data issues of mutual interest. The topic this year was employment data. Presented below is a summary of material handed out in the session. It lists the sources of employment data from both private and public sectors, although this list should be considered a draft and might not include every possible supplier of these types of data. If anyone has a source that they would like to add to the list please contact Ed Christopher at: edc@edthefed.com.

PRIVATE

InfoUSA
A continuously updated, proprietary database of 250 million consumers and 14 million businesses. http://www.infousa.com/

Dun & Bradstreet
Contains more than 100 million business records. http://www.dnb.com/

Experian
Features demographic and credit information updated monthly on more than 15 million businesses. http://www.experian.com/products/national_business_database.html and http://www.experian.com/

Claritas
Contains business demographics for over 12 million business locations across the U.S. http://www.claritas.com/claritas/

Geo Results
Contains information on over 16 million U.S. businesses; available in Excel, Access, MapInfo, ESRI, and delimited ASCII file formats; contains over 100 fields of information. http://www.georesults.com/

MapInfo Business Points
Database containing more than 15 million geographic points of business locations throughout the U.S. http://www.mapinfo.com/

Applied Geographic Solutions (AGS)
AGS maintains BusinessCounts, a geographic summary database of business establishments, employment statistics, and occupation types. The primary data source is the InfoUSA database. http://www.appliedgeographic.com/

Equifax
A database with demographic selections on over 21 million businesses and over 20 million individuals. http://www.equifax.com/

Global Insight
A database of economic information, supplemented by an extensive collection of financial data. http://www.globalinsight.com/

0-0 DataNetwork Corporation
Includes information on more than 75 million registered organizations in 203 countries. The U.S. database includes over 14.6 million records. http://www.0-0.net/

FEDERAL

Quarterly Census of Employment and Wages (QCEW)-(ES202) Program
Produces a comprehensive tabulation of employment and wage information for workers covered by state unemployment insurance laws and federal workers covered by the Unemployment Compensation for Federal Employees program. Under QCEW a quarterly count covering 98 percent of U.S. jobs is produced and available at the county, MSA, state, and national levels by industry. The database represents the number of covered workers who worked during, or received pay for, the pay period including the 12th of the month. Excluded are members of the armed forces, the self-employed, proprietors, domestic workers, unpaid family workers, and railroad workers covered by the railroad unemployment insurance system. http://www.bls.gov/cew/

Current Employment Statistics (CES) Program
Data on employment, hours, and earnings from a sample of about 160,000 businesses and government agencies, which cover approximately 400,000 individual work sites drawn from a sampling frame of over 8 million unemployment insurance tax accounts. The CES program provides detailed industry data on employment, hours, and earnings of workers on non-farm payrolls. http://www.bls.gov/ces/

Current Population Survey (CPS)
The primary source of information on the labor force characteristics of the U.S. population. The sample is scientifically selected to represent the civilian non-institutional population. http://www.bls.census.gov/cps/cpsmain.htm

Local Area Unemployment Statistics (LAUS)
Monthly estimates of total employment and unemployment are prepared for approximately 7,200 areas. http://www.bls.gov/lau

SEE EMPLOYMENT ON PAGE 6 ➤

OHIO MODEL CONTINUED FROM PAGE 3 ➤

variables, air quality issues, GIS applications, congestion management strategies, microsimulation, user benefit analyses, MPO model updates, statewide model updates, household and travel survey methods, freight modeling, and project-level certified traffic.

Some presentations also come from conference materials. For example, eight OTDMUG members presented at the last TRB Applications Conference, and several were presented at the summer OTDMUG meeting. Since many members of the group come from smaller agencies with limited travel budgets, they can benefit from these presentations without having to recruit volunteers from outside of OTDMUG. Also, members share highlights from other conferences that they have attended since the last meeting.

Further information about the OTDMUG can be found on the website: www.dot.state.oh.us/urban/mug/mug.htm.

The Department of Transportation Headquarters location has moved. TMIP is now housed at 1200 New Jersey Avenue, SE, Washington DC 20590.

We Moved!

The Department of Transportation Headquarters location has moved. TMIP is now housed at 1200 New Jersey Avenue, SE, Washington DC 20590. We are happily settling into our new digs. Our phone, fax, email, and website addresses remain the same.

Update Your MUG Listing

Don't forget to review, update, and/or add your Model User Group (MUG) listing! Go to: http://tmip.fhwa.dot.gov/contacts/ and click on Model User Groups to view your MUG profile – or anyone else's. If there's something missing, or no entry for your MUG, or if your information has changed please drop us a line at: http://tmip.fhwa.dot.gov/contact_us.stm and we'll add or update the information ASAP!

Call for Articles

TMIP Connection is looking for articles of interest to the travel model community. If you have presented or published material that would make a good article in an upcoming issue of TMIP Connection, please contact Sarah Sun or Penelope Weinberger at: sarah.sun@dot.gov or p-weinberger@tamu.edu.

Tell Us What You Think

We want your feedback. Are we meeting your needs? Can you think of something we should be doing, or should be doing better? Do you just want to let us know we're appreciated? Your feedback is not just welcome, but desired. Please complete the feedback form at http://tmip.fhwa.dot.gov/feedback.stm and let us know how we can better serve you!

Mentor Modelers Sought

TMIP is starting a Travel Model Mentoring Program. The mentoring program will provide newer modelers, who are developing models, with a resource to glean quick support and receive the benefit of the advice of more experienced modelers. The program will also give newer modelers the support and platform they need to grow into future mentors themselves. If you wish to volunteer as a Mentor Modeler please send the following information to tmip@tamu.edu:

- topics on which you'd like to mentor;
- size and type of your organization;
- your level (or years) of experience;
- your location (geographic area);
- availability (how much mentoring time you have available, when, etc.); and
- preferred method of contact.

The initial effort will be a database of self-selected Mentor Modelers that we will maintain. This database will not be public. After we collect the information, we will create a mechanism whereby questions may be asked, and they will be forwarded to the appropriate mentor for further action.

Metropolitan Travel Forecasting: Current Practice and Future Direction

TRB Special Report 288, Metropolitan Travel Forecasting: Current Practice and Future Direction, examines metropolitan travel forecasting models that provide public officials with information to support decisions on major transportation system investments and policies. The report explores what improvements may be needed to the models and how federal, state, and local agencies can achieve them. According to the committee that produced the report, travel forecasting models in current use are not adequate for many of today's necessary planning and regulatory uses. The findings of the surveys of metropolitan planning organizations used to help develop this report are available online.

A PDF of the report is available at: http://onlinepubs.trb.org/onlinepubs/sr/sr288.pdf.

Ken Cervenka

Ken Cervenka Joins FTA

TMIP wishes to formally welcome Ken Cervenka to his new position as a Community Planner in the Office of Planning and Environment at the Federal Transit Administration (FTA) headquarters in Washington, D.C. We look forward to Ken's continuing contributions to the modeling community, but now from the federal perspective. Ken will be kicking off a new column in the next issue of TMIP Connection, called Transit Modelers' Corner. Ken will write or host a transit modeling topic of interest to travel forecasters. We look forward to it!

EMPLOYMENT CONTINUED FROM PAGE 4 ➤

American Community Survey (ACS)
A continuous survey method with 300,000 different households sampled every month. ACS will provide estimates of demographic, housing, social, and economic characteristics every year for all states, as well as for all cities, counties, metropolitan areas, and population groups of 65,000 people or more. For smaller areas, it will take three to five years to accumulate sufficient samples to produce data for areas as small as census tracts. http://www.census.gov/acs/www/

Longitudinal Employer-Household Dynamics (LEHD) Program
Longitudinal Employer-Household Dynamics is an innovative program within the U.S. Census Bureau. The program uses statistical and computing techniques to combine federal and state administrative data on employers and employees with core Census Bureau censuses and surveys to produce various data products.
http://lehd.dsd.census.gov/led/

Census Transportation Planning Package 2000 (CTPP 2000)
CTPP 2000 is a special tabulation of the 2000 Decennial Census long-form data commissioned by the state departments of transportation. The data product contains resident-based employment as well as workplace-based workers. Workplace-based workers are determined through a question on the survey that asks each resident worker where they worked the previous week.
http://www.dot.gov/ctpp/

Regional Industrial Multiplier System (RIMS)
Although not a survey or direct data collection process, the Regional Industrial Multiplier System is noteworthy because of its ability to estimate the impacts of economic changes on employment and de facto employment numbers. The RIMS is a regional input-output (I-O) set of multipliers developed by the Bureau of Economic Analysis (BEA) for doing Output, Earnings, and Employment analysis. In short, it uses an "economic account" method for job estimation. BEA is a secondary data user to Bureau of Labor Statistics (BLS) and the Census Bureau but it is definitely a presence at the national economic data front. The BEA RIMS data are available down to the county level.
http://www.bea.gov/bea/regional/articles/rims2/

Data Source	Employment in Thousands
CPS – April 2000	137,264
CES – April 2000	131,677
Census 2000 (April 2000)	129,722
CTPP – 2000	128,279

Metropolitan Travel Survey Archive

By Dr. David Levinson, Department of Civil Engineering, University of Minnesota

The Metropolitan Travel Survey Archive (MTSA) Project (phase II) was funded by the Federal Highway Administration following an earlier phase sponsored by the Bureau of Transportation Statistics.

There were two objectives of the MTSA project. The first objective was to identify, track, and collect new travel surveys that have been conducted across the country. The second objective was to make the available datasets compatible with the Survey Documentation and Analysis (SDA) software to enable online analysis of datasets. The rationales for the MTSA project include the following:

Travel surveys are useful instruments that provide valuable insight into the travel behavior characteristics of people at city, county, state, or other geographical levels.

Historical surveys help researchers to observe a temporal shift in travel preferences, which may play an important role in making appropriate transportation-related policies and producing better forecasts.

With improved statistical techniques, it is increasingly recognized that a survey dataset may provide insight into the social behavior of the community.

Access to data from the present and the past would make it possible to validate and calibrate new transportation planning models.

Easy access to datasets spanning different time periods on the Internet is likely to increase research opportunities in general.

Properly archiving the travel surveys at a central location (with remote backups) safeguards the data against loss to calamities such as fires, earthquakes, floods, and terrorist attacks that have befallen earlier surveys.

Currently the archive hosts about 58 surveys from 28 different metropolitan travel survey agencies spanning over 40 years. Of these surveys, 44 have been converted to the SDA format while the remaining surveys are incomplete and have either some variable description or a raw data file missing, or both. The archive currently hosts 2,718,329 trip records; 516,108 person records; 219,097 household records; 173,354 vehicle records, and 528,847 location records.

We are still seeking a number of surveys that have been conducted but not archived. A table of approximately 100 surveys still sought can be found at: http://www.surveyarchive.org/sought.html.

Data on the archive can be accessed at http://www.surveyarchive.org.

Hot Topic: LEHD On the Map

By Elaine Murakami, FHWA Office of Planning

Editor's Note: *Our Hot Topics article varies from its usual format a bit this edition. Typically, questions and responses are posted to our TMIP email. We pick the most popular, most variably responded to, or, frankly, the one that interests us the most. We ask the original enquirer to write an article summarizing the discussion and any conclusion, help, or application of the information they derived from the email discussion. This time, the Hot Topic was inspired not by a query, but by an informational post that generated some serious discussion of data and data sources. The discussion is summarized by our own Elaine Murakami, she drew the short straw.*

The Longitudinal Employment and Household Dynamics (LEHD) On the Map project is a potential alternative to CTPP for worker flows between home and work. LEHD is a project of the U.S. Census Bureau funded by the Department of Labor that uses the Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) (formerly ES-202), Unemployment Insurance (UI) files, combined with federal administrative records. "On the Map" is one component of the LEHD that **synthesizes home-to-work flows** at the Census block level. Workplace locations are derived from the QCEW and Multiple Worksite Reports (MWR), and residence locations are derived largely from IRS 1040 forms. The national assignment of individual workers to specific worksites is based on a Minnesota method, where state law requires that individual SSNs are tied to a specific work site.

As Ken Cervenka pointed out in the listserv discussion, "the original beauty of the LEHD approach is the national-level cost savings associated with integration of mostly already-available national-level information into what could be thought of as a national-level population synthesizer." Because LEHD uses administrative records, rather than a survey effort requiring primary data collection like the American Community Survey (ACS), the costs are relatively low. Currently, the LEHD does not include self-employed (estimated at about 10 percent of workers), nor federal workers (less than 1 percent of workers). Also, it does not capture the "informal" labor force, which is also probably underreported in traditional surveys.

For the CTPP 2000, small area flows included Traffic Analysis Zone (TAZ)-to-TAZ and Block Group-to-Block Group flows for some areas. However, the decennial census "long form" has been eliminated for 2010, and replaced with the American Community Survey. While the transportation community is planning to use a five-year accumulation of ACS records to create several CTPP products, the LEHD "On the Map" is a potential alternate source. The LEHD offers to provide updated data as frequently as every year or even every quarter.

As Sam Granato pointed out in the listserv discussion, the transportation data community has had a long history of working with QCEW files. The transportation community has not been very successful at establishing feedback loops with the Employment Security Departments (ESD) to improve addresses and disaggregating businesses with multiple sites. As Ed Christopher mentioned, regarding early research on LEHD funded by the Bureau of Transportation Statistics in Florida and Illinois, ". . .although the MPOs did participate, we later learned that their corrections to the source files were never fed back into the original ES-202 but instead were only used to correct the files that were sent over to the Census Bureau for its LEHD work." Several MPOs have working relationships with their state ESDs to use confidential QCEW files, but corrections made to the files by MPO or state DOT staff have typically not found their way back to the QCEW nor the MWR file.

What you can do!

Step 1: Understand how the data are synthesized.

For a brief description of the data synthesis process, please see: http://www.fhwa.dot.gov/planning/census/lehdonthemap.htm. For a longer technical document that is now somewhat outdated, please see the report by John Abowd et al. "LEHD Infrastructure Files and the Creation of the Quarterly Workforce Indicators" by J. Abowd, B.E. Stephens, L. Vilhuber, F. Andersson, K.L. McKinney, M. Roemer, and S. Woodcock, dated December 5, 2005. http://lehd.dsd.census.gov/led/library/techpapers/tp-2006-01.pdf.

Step 2: Examine the data at the LEHD "On the Map" website, and get a copy of the data from the Cornell Virtual Data Center. Because the data are synthetic, there are 10 implicates created for the home-to-work flow. John Abowd at Cornell recommends that users use all 10 implicates for the best results.

Step 3: Evaluate the data.

Users must carefully review On the Map data before using it for transportation planning.

Again, from Ken Cervenka's post to the listserv, "From what I can tell the LEHD data has a lot of promise, but needs many more real-world independent validation checks that will lead to what might turn out to be substantial adjustments (corrections). But it is not at all clear in my mind how to get such independent information on a major scale, without 1) spending a heck of a lot more money and 2) having some uncertainties about how close the independent information will actually be to "ground truth" reality."

Step 4. Keep track of problems and convey them to your State Employment Security Department. Jeremy Wu, the program manager of the LEHD at the Census Bureau says that the state ESDs are interested in working with transportation agencies to improve the addressing and work site locations. To contact your LEHD state partner, go to: http://lehd.dsd.census.gov/led/led/statepartners.html.

For the complete discussion of this topic, or for other hot topics, go to http://tmip.fhwa.dot.gov/discussions/email_list.stm and join the list or peruse the archives.

Conferences

Institute of Transportation Engineers Annual Meeting and Exhibit
August 5 – 8, 2007 – Pittsburgh, PA
http://www.ite.org/annualmeeting/

87th TRB Annual Meeting
January 13 – 17, 2008 – Washington, DC

Web Knowledge and Information Exchange

Looking Inside the Travel Model Black Box – Fall

TMIP wishes to express its thanks to all the members of the travel model community that step up and participate in our many projects. Without the voluntary support and cooperation of these planners and modelers, TMIP would not be the program that it is today. We rely on you, and thank you.

THE TMIP MISSION

TMIP will...

Do What?
Support and empower planning agencies.

How?
Through leadership, innovation, and support of planning analysis improvements.

Why?
To provide better information to support transportation and planning decisions.

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